

Strategies for improving outcomes for young children

A catalogue of evidence-based interventions



A Victorian
Government
initiative



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1. Introduction

This catalogue of evidence-based strategies for early intervention in children's health and wellbeing was commissioned from the Centre for Health Service Development, University of Wollongong, by the Victorian Department of Human Services for its Best Start program. Best Start is run jointly with the Victorian Department of Education and Training, and its aims are to improve the health, development, learning and wellbeing of Victorian children aged up to eight years, with an emphasis on prevention and early intervention. These aims are to be accomplished by supporting communities, parents and service providers to improve early year services so they are more responsive to local needs.

Best Start was piloted from 2002 to 2006 with 11 mainstream and two Aboriginal sites. In mid-2006 a further 10 mainstream and four Aboriginal sites were announced, and the funding for the pilot sites extended.

The purpose of this catalogue is to assist Best Start sites in implementing interventions in key outcome areas. Fifteen indicators have been identified by the Department for Human Services under 13 headings. Each Best Start project is required to target four to five areas.

1. Breastfeeding

Increased rate of breastfeeding

2. Antenatal and parental smoking

Decreased rate of women smoking during pregnancy

Decreased rate of children exposed to tobacco smoke in the home

3. Immunisation

Increased rates of immunisation

4. Maternal and child health services

Increased attendance at maternal and child health

5. Sun protection

Increased rate of children who are protected from summer sun

6. Physical activity

Increased rate of children who participate in physical activity

7. Oral health

Proportion of children who clean their teeth at least twice a day

8. Reading, writing and numeracy

Increased rate of parents reading to their children

Improved reading, writing and numeracy

9. Kindergarten

Increased participation in kindergarten

10. Absenteeism

Reduced absences from primary school

11. Child protection

Decreased rate of re-notifications to child protection

12. Injury

Decreased rate of unintentional injury

13. Parenting support

Proportion of children whose parents report high levels of social support

2. Development of the catalogue

2.1 Scope

A major focus of the Best Start program is building partnerships and collaboration among various government agencies and service providers such as maternal and child health clinics, childcare providers, kindergartens (preschools), health services, schools and family support services. This means that the kinds of interventions likely to be useful for 'Best Start' will be diverse in their approaches and settings. They may involve changes to infrastructure, establishing partnerships between services and community organisations, or promoting community involvement in seeking better outcomes for children, as well as engaging directly with parents and other caregivers.

The early intervention programs provided by Best Start include both universal services and programs targeting specific sections of the population identified as vulnerable or 'at-risk'. The *Breaking cycles, building futures* report (Carbone et al., 2004), which was commissioned by Best Start, defined vulnerable families as:

- families on low incomes
- sole-parent families
- families with young parents (under 20 years of age)
- Indigenous families
- families from culturally and linguistically diverse backgrounds
- families experiencing unstable housing or homelessness
- families with a parent who has a disability, problematic substance use or a mental health problem
- families who have had contact with child protection services or the criminal justice system
- families experiencing domestic violence.

2.2 Overview of methodology

Research methods are described in full in the companion volume, 'Technical report: Development of the Best Start catalogue of early intervention strategies for children's health and wellbeing' (from this point forward referred to as 'the technical report'). To summarise this information briefly, the first step in the project was to review relevant literature to identify early intervention for each of the 15 Best Start indicators. The evidence was then evaluated according to a standardised scheme that included the strength of evaluation design and other relevant criteria for quality and applicability in the Victorian context. Three or four strategies were selected for each indicator and a literature review was written, indicating how and why these particular strategies were chosen and (where relevant) describing other promising strategies that did not make the final cut. A template was designed and used to summarise and organise the evidence for each strategy.

2.3 Search strategies

Team members worked with a university librarian to develop a set of key words and identify appropriate electronic databases, websites and other sources to search for each indicator. In some cases, the original search was refined and repeated with input from team members after they had read some background information and begun to explore the literature and were able to generate additional, more specific search terms. The searches focused on evaluations of interventions or programs for each of the indicators.

Team members expanded these searches according to the COSI (core, standard, ideal) model (Bidwell and Jensen, 2004). Where relevant, they searched the databases of systematic reviews conducted under the auspices of the Cochrane and Campbell Collaborations. The searching then extended out into the grey literature through a variety of strategies designed to target sources most likely to be useful.

Further detail on the search methods is available in the companion volume to this catalogue, the technical report (see Section 2).

2.4 Evidence evaluation framework

A standardised scheme was adopted for evaluating the evidence on each of the proposed strategies for the catalogue. Development of the evidence evaluation framework is described in full in the companion volume, the technical report (see Section 2.3).

The evaluation scheme or framework provides an indication of the strength of the evidence and additional information that may be useful in guiding the selection of strategies for Best Start sites, namely:

- is the intervention well documented?
- does the intervention have a sound theoretical or empirical basis?
- has the intervention been evaluated independently at more than one site?
- is cost-effectiveness data available?
- has the intervention been evaluated with Indigenous Australian communities, culturally and linguistically diverse groups, or socially disadvantaged families?

3. How to use this catalogue

3.1 The indicators

The catalogue is organised into 13 sections, namely:

1. Breastfeeding
2. Antenatal and parental smoking
3. Immunisation
4. Maternal and child health services
5. Sun protection
6. Physical activity
7. Oral health
8. Reading, writing and numeracy
9. Kindergarten
10. Absenteeism
11. Child protection
12. Injury
13. Parenting support

The quantity and quality of evidence is inconsistent across the 15 Best Start indicators. For some very well researched areas such as literacy and re-notification, the task for the reviewers was to sift through a vast number of potentially useful interventions to identify those most likely to be suitable in the Victorian context. In other areas it was more difficult to find strategies supported by evaluation evidence, and it was necessary to recommend interventions built on evidence-based principles that appear to be producing promising results.

This particularly applies to areas such as increasing participation in kindergarten and absenteeism. Where the evidence is limited, this is clearly indicated in the literature review and efforts have been made to ensure that the recommended strategies, although not 'gold standard', have other qualities likely to make them useful for Best Start, such as good documentation and cultural appropriateness. Indeed, because of the nature of evaluation methods, some of the most innovative strategies are not supported by evidence at level one or level two but may nevertheless be appropriate for Best Start. These issues are discussed further in the companion volume, the technical report.

3.2 The literature reviews

Catalogue entries for each indicator are preceded by a literature review, which provides essential background information to guide the selection and implementation of the strategies. It is strongly recommended that users of the catalogue read the literature reviews.

The format of the reviews is as follows:

- a background section that provides key information about the indicator, including a definition of terms, where necessary
- a broad description and summary of the available literature (evidence base) relevant to the indicator
- the recommended strategies are described in detail, with information about their implementation and evaluation. This section also provides information about other promising interventions that did not make the final cut in this version of the catalogue
- a discussion of issues relevant to the selection and implementation of evidence-based strategies.

3.3 The evidence table

The evaluation framework included in the catalogue is based on the following criteria for the strength of supporting evidence:

1. **well-supported practice** – evaluated with a prospective randomised controlled trial
2. **supported practice** – evaluated with a comparison group and reported in a peer-reviewed publication
3. **promising practice** – evaluated with a comparison group
4. **acceptable practice** – evaluated with an independent assessment of outcomes, but no comparison group (such as pre and post-testing, post-testing only, or qualitative methods) or historical comparison group (such as normative data from standardised tests)
5. **emerging practice** – evaluated without an independent assessment of outcomes (such as formative evaluation, service evaluation conducted by host organisation).

These categories were based on several classification systems, most notably the one used by the California Evidence-Based Clearinghouse for Child Welfare (www.cachildwelfareclearinghouse.org, downloaded 7/9/06). The basis for this classification system is described in the companion volume, the technical report. Where interventions could potentially fall into two different categories (such as a rigorous but non-independent study), they were assigned to the highest relevant level of evidence.

In addition, the framework provides information on the following indicators of quality:

- replication – has the intervention been implemented and independently evaluated at more than one site?
- documentation – are the content and methods of the intervention well documented (such as provider training courses and user manuals) and standardised to control quality of service delivery?
- theoretical basis – is the intervention based upon a well-accepted theory or developed from a continuing body of work in its field?
- cultural reach – has the program been trialed with people in disadvantaged communities, Indigenous people or people from culturally and linguistically diverse backgrounds?

Cost-effectiveness was originally included in the framework but was later removed because this type of information was available for very few of the recommended strategies.

As the aim was to produce a catalogue of evidence-based strategies, the literature reviews and catalogue entries necessarily focused on interventions that had been rigorously evaluated. In some cases, where evidence was limited, it was necessary to include interventions for which there is relatively little evidence of effectiveness. The reasons for including these interventions are clearly indicated in the relevant sections of the report and catalogue. The focus on evidence means that some established practices that have not yet been evaluated were not able to be included in the catalogue. We would strongly encourage those who have developed early intervention programs for the Victorian context to consider evaluating them using robust methods in order that they may be included in future editions of the catalogue.

3.4 The catalogue entries

For each of the 15 indicators, three or four evidence-based interventions suitable for implementation in the Victorian context have been identified and described.

The catalogue is not intended as a self-contained manual for implementation of the strategies. Rather, it provides sufficient detail to enable local agencies to evaluate whether the interventions are suitable, relevant and achievable within local resources and constraints. Contact details are provided so that sites can seek further information, including manuals and other documentation and advice on implementation. The catalogue includes the following elements:

- a brief report on the literature that supports the particular intervention
- an explanation of the evidence behind the strategy (why the strategy works)
- an explanation of the population group on whom the strategy could be expected to work
- an explanation of where the strategy might be expected to work
- contact details where sites can obtain further information.

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The full list of recommended strategies for the Best Start catalogue appears below (Table 1). The column ‘target groups’ refers to sections of the population for which the interventions are designed and have been evaluated. An intervention may have effects on more than one indicator. Where there is research evidence to demonstrate these effects, they are listed under ‘other indicators affected’.

Table 1: Best Start catalogue strategies

Indicator		Recommended strategies		Target groups	Other indicators affected
Breastfeeding					
1	Breastfeeding	1.1	Baby-friendly Hospital Initiative (WHO)	Low SES CALD	
		1.2	Community outreach	Low SES CALD	
		1.3	Multi-strategy, community intervention	Universal	
		1.4	Health professional education initiatives	Universal	
		1.5	Peer support	Universal	
Antenatal and parental smoking					
2	Fewer women smoking in pregnancy	2.1	Three Centres guidelines for smoking cessation in antenatal care	Universal	3, 5
		2.2	Five-step strategy to quit smoking	Low SES	3, 5
		2.3	Smoke Free Families	Low SES CALD	3
		2.4	Telephone counselling	Low SES	3, 5
3	Less exposure to tobacco smoke in the home	3.1	Car and Home: Smoke Free Zone	Low SES	2
		3.2	STOP program	Low SES	2
		3.3	NAPS	Indigenous	2, 5
Immunisation					
4	Immunisation	4.1	Multi-component interventions including education	Low SES	2, 5
		4.2	Client recall/reminder	Low SES	5
		4.3	Home visiting and case management	Low SES	1, 5, 13, 14
		4.4	Immunisation programs for women, infants and children (WIC) in non-medical settings	Low SES	
Maternal and child health services					
5	Maternal child health service attendance	5.1	Nganampa Health Council (NHC) child and maternal health program, Anangu Pitjantjatjara Lands, SA	Low SES Indigenous	1, 4
		5.2	Mums and Babies Program. Townsville Aboriginal and Islander Health Service (TAIHS), Townsville, QLD	Low SES Indigenous	1, 4
		5.3	Strong Women, Strong Babies, Strong Culture Program, Northern Territory	Low SES Indigenous	1, 2, 4
		5.4	Congress Alukura, Alice Springs, NT	Low SES Indigenous	1, 4

Indicator		Recommended strategies		Target groups	Other indicators affected
Sun protection					
6	Protection from summer sun	6.1	Cool Pool program	Universal	
		6.2	New Moms program	Universal	
		6.3	Provision of trees, shrubbery and broken ground	Universal	
		6.4	SunSmart	Universal	
Physical activity					
7	Participation in physical activity	7.1	SPARK	Low SES	
		7.2	CATCH	Low SES CALD	
		7.3	TOP start	Low SES	
		7.4	Switch-Play	Low SES	
		7.5	Romp n' Chomp	Universal	
Oral health					
8	Brushing teeth twice a day	8.1	Understanding parents beliefs and motivating children	Universal	
		8.2	Top Tips for Teeth	Indigenous	
		8.3	Supervised tooth brushing	Low SES	
		8.4	Tiddalick Takes on Teeth	Indigenous	
Reading, writing and numeracy					
9	More parents reading to children	9.1	PAT	Low SES CALD	10
		9.2	Better Beginnings	Universal	10
		9.3	Bridging the GAP	Indigenous	10
		9.4	ROR	Low SES CALD	10
10	Better reading, writing and numeracy	10.1	EASE	Universal	9
		10.2	Gateways to Literacy	Low SES Indigenous CALD	9
		10.3	Reading for Life	Universal	
		10.4	REAL	Low SES CALD	9
		10.5	PEEP	Universal	9
Kindergarten					
11	Increased kindergarten participation	11.1	Catch the Future	Low SES	10
		11.2	The Early Years	Indigenous	10
		11.3	Mobile Preschool Pilot Program	Indigenous	10

Table 1: Best Start catalogue strategies (cont)

Indicator		Recommended strategies		Target groups	Other indicators affected
Absenteeism					
12	Reduced absences from school	12.1	Coxmoor Breakfast Club	Low SES	10
		12.2	Friendly Schools and Families	Universal	10
		12.3	It's Not OK to Be Away	Universal	
Child protection					
13	Fewer re-notifications to child protection	13.1	The Incredible Years	CALD	
		13.2	PCIT	CALD	
		13.3	Triple P (Positive Parenting Program)	Indigenous CALD	15
		13.4	Healthy Families	Low SES	
		13.5	Nurse-home visitation – Olds Model	Low SES	14
Injury					
14	Decreased injury rates	14.1	Child Pedestrian Injury Prevention Program	Universal	
		14.2	Home visiting – various models including Olds model	Low SES CALD	13
		14.3	Safe Start	Low SES CALD	
		14.4	WHO Safe Communities: Waitakere City Council	Indigenous CALD	13, 15
Parenting support					
15	More social support for parents	15.1	Survival Skills for New Moms	Low SES	
		15.2	Hamilton Health Community Program	Universal	
		15.3	Triple P (Positive Parenting Program)	Universal	13
		15.4	Early Head Start plus interpersonal therapy for depression	Low SES CALD	13

3.5 Further information

For more information on the development of the catalogue, including the search strategies and evidence evaluation framework, consult the companion document, the technical report. For more information about a recommended strategy, contact the person named on the catalogue entry (where possible, this is someone involved in the implementation rather than the evaluation), consult the website, or obtain and read the original sources, such as journal articles and reports (a full reference list is provided at the end of the literature review for each indicator). For more information about the Best Start program, see www.beststart.vic.gov.au

4. Breastfeeding

4.1 Increased rate of breastfeeding – literature review

4.1.1 Background

Support for the importance of breastfeeding for the short and long term development of an infant is very well established (WHO, 1998; RACP, 2006). Current NHMRC recommendations are for sole breastfeeding until six months of age, and continuation of breastfeeding until age two or beyond with appropriate complementary feeds (NHMRC, 2003).

In addition, the NHMRC has identified four strategy areas for the promotion and support of breastfeeding:

1. establish policies, legislation and institutions protective and supportive of breastfeeding
2. develop a breastfeeding-friendly healthcare system – hospitals, health professionals, pharmacies
3. promote breastfeeding-friendly workplaces and childcare services
4. strengthen breastfeeding-friendly communities and families.

4.1.2 The evidence base

There is strong evidence to indicate that initiatives can be effective in the establishment and duration of breastfeeding. Such initiatives need to include multiple strategies (Quinn et al., 2005) and can in some cases demonstrate increasing effectiveness over time (Gau, 2004).

The WHO Baby-friendly Hospital Initiative (BFHI) has repeatedly demonstrated effectiveness in the establishment of breastfeeding but not in its continuation past the initial period, sometimes as short as 10 days (Coutinho et al., 2005; Gau, 2004).

There is also some evidence that extension of health care services through either home visits (Barros et al., 1994; Coutinho et al., 2005) or community and health worker mobilisation to support breastfeeding (Bhandari et al., 2005) has a significant impact on breastfeeding duration. Barros et al. (1994) undertook a RCT of provision of home visits to women five, 10 and 20 days after birth and found delayed introduction in bottle-feeding (90 days cf. 60 days, $p = 0.01$) and for duration of breastfeeding (120 days cf. 105 days, $p = 0.03$). Their observation was that women needed to be taught normal patterns of baby behaviour. Bhandari et al. (2005) used a randomised control trial (RCT) of paired communities designed to test the impact of health and nutrition worker training to counsel women at multiple contact points in the community.

The training package used was the WHO integrated management of childhood illness training manual on 'Counselling the mother', which included specific guidance relating to breastfeeding and complementary feeding. The more effective avenue for counselling varied with the age of the baby. At three months of age, immunisation clinics (56.7 per cent) and home visits (28.4 per cent) were the most common sources of counselling, while at nine months of age, home visits (48.6 per cent), weigh sessions (31.3 per cent) and immunisation sessions (27.1 per cent) were more common. Clearly mapping new mothers' contact points with services and targeting those services with training may prove an effective strategy to help maintain breastfeeding.

In relation to single interventions to support breastfeeding, a meta-analysis¹ by Guise et al. (2003) identified education programs as most effective. Education conducted by nurses or lactation specialists in the antepartum period, of variable duration (30-90 minutes), in individual or group situations and with structured content increased short and long-term duration of breastfeeding. Gau (2004) also found that women with higher breastfeeding knowledge had more positive attitudes towards breastfeeding, had higher rates of breastfeeding in hospital and also breastfeed for longer. The initiation and duration of breastfeeding was directly proportional to breastfeeding knowledge and attitudes.

¹ Meta-analysis - The process or technique of synthesising research results by using various statistical methods to retrieve, select, and combine results from previous separate but related studies. (<http://www.thefreedictionary.com/>)

4.1.3 Selection of recommended interventions

The interventions reviewed here fall into two broad groups: hospital focused strategies and community focused strategies delivered by professionals and volunteers.

Most widely recognised and used is the World Health Organisation's Baby-friendly Hospital Initiative (BFHI) (WHO, 1998). This initiative identifies 10 steps to successful initiation of breastfeeding, which have been implemented in various ways throughout the world. Evidence exists for improved effectiveness when the involved hospitals are externally audited for compliance and their involvement over a period of time (Gau, 2004). Evidence is also available to support the various strategies recommended by the WHO, such as the review by Perez-Escamilla et al. (1994) of the infant feeding policies in maternity wards and their effect on breastfeeding success.

Studies report that the effectiveness of the BFHI in initiating breastfeeding is not sustained once the mother and infant leave the hospital, and community support programs need to be implemented to support maintenance of breastfeeding for the recommended six months of sole breastfeeding, with continuation into the second year and beyond. Strong evidence exists for the impact of education by health professional staff (nurses and lactation specialists) alone (Guise et al., 2003; Lana, Lamounier and Cesar, 2003), integration of breastfeeding counselling within multiple community-based services (Bhandari et al., 2005) and for home visits (Morrow et al., 1999). The latter two approaches have been preceded by specific training of health staff using WHO breastfeeding counselling materials or training by the La Leche League.

Large scale, multi-strategy, community-based interventions have also demonstrated significant improvements in the initiation and maintenance of exclusive breastfeeding. A study by Quinn et al. (2005) reported on the effectiveness of the Linkages Project, a broad scale community-based intervention in Africa and Latin America. Significant improvements were achieved in the initiation of breastfeeding within one hour of birth and also in the exclusivity of breastfeeding of infants from birth to six months of age. Population reach was one million in Bolivia, 3.5 million in Ghana and six million in Madagascar. The projects aimed to maximise existing government and NGO resources and focussed on four main community components – building partnerships, capacity building, behaviour change communication and community activities to reach mothers, together with training, monitoring and evaluation. Improvements were detected as early as nine months after initiation of the programs.

When education alone has been implemented, it was conducted by nurses or lactation specialists in the antepartum period, of variable duration (30-90 minutes), in individual or group situations and with structured content (Guise et al. 2003). This same meta-analysis identified that written materials alone had no effect and when used in conjunction with education did not increase the effectiveness of the education alone. This has important implications for the education of pregnant women (and others), when busy health professionals hand out printed materials or, increasingly, identify websites for information, rather than provide the personal education themselves. Gau (2004) also found that women prefer to receive information about breastfeeding from nurses (58.6 per cent) and doctors (46 per cent), and that breastfeeding initiation and duration was directly proportional to mother's breastfeeding knowledge and attitude.

The literature has some information on the impact of community-based peer support programs. A study by Bryant (1982) in the USA examined the impact of kin, friend and neighbour networks on breastfeeding rates and found no significant effective (study numbers were quite small). The Australian Breastfeeding Association (formerly Nursing Mothers Association of Australia) has been providing peer support for decades. Evaluation of the effectiveness of their strategies has not been systematically examined. A small (n = 130 women) randomised community-based intervention in Mexico City studied the effect of home-based peer counselling (trained by the La Leche League) on duration of breastfeeding rates (Morrow et al. 1999). Significant differences in the rate of exclusive breastfeeding at three months was found between the women who received peer counselling visits compared with the mothers who did not receive the visits. This same result was not found with a similar, quasi-experimental² study in Glasgow (McInnes, Love and Stone, 2000).

The workplace, although recognised as an important, negative influence on breastfeeding continuation, does not appear to have been a location for breastfeeding interventions or their evaluation. This area should continue to be monitored, as government workplaces at least could provide useful locations for pilot interventions and possible role models for private sector in the future.

² Quasi-experimental - Quasi-experimental designs were developed to deal with the complex world of field research, where it is not always practical, ethical, or even possible to randomly assign persons to experimental and control groups. (<http://www.fammed.ouhsc.edu/tutor/qexpdes.htm>)

4.1.4 Discussion

Breastfeeding has been identified as a fundamental base on which a person's future health is founded. It is so fundamental that perhaps it has not been given the due recognition by the community and health services that it deserves. Breastfeeding rates by Australian women are not optimal for good health of their infants and yet it is a single issue intervention that could become a clear focus for public health intervention. This will require a strong commitment by health leaders and health professionals, and decisive interventions at two key points – leading up to and during the immediate post birth period, when hospital policies and health professionals have a significant role to play, and on-going support for at least the first six months of age, utilising existing community-based services, non-government organisations and trained lactation support counsellors. A combination of full implementation of the WHO BFHI strategies, health professional training, personal education of mothers by health professionals and then broadly based community-based support is required.

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4.1.6 Increased rate of breastfeeding: recommended strategies

Table 2: Evaluation evidence for recommended strategies – ‘Increased rate of breastfeeding’

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(1.1) Baby-friendly Hospital Initiative	1	Y	Y	Y	LOW SES CALD
(1.2) Community Outreach	1	Y	Y	Y	LOW SES CALD
(1.3) Multi-strategy, community intervention	1	Y	N	Y	UNIVERSAL
(1.4) Health professional education initiatives	1	Y	Y	Y	UNIVERSAL
(1.5) Peer support	3	Y	Y	Y	UNIVERSAL

Key

Supporting evidence:

1. Well-supported practice – evaluated with a prospective randomised controlled trial.
2. Supported practice – evaluated with a comparison group and reported in a peer-reviewed publication.
3. Promising practice – evaluated with a comparison group.
4. Acceptable practice – evaluated with an independent assessment of outcomes, but no comparison group (such as pre and post-testing, post-testing only or qualitative methods) or historical comparison group (such as normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (such as formative evaluation, service evaluation conducted by host organisation).

Replication:

Has the intervention been implemented and independently evaluated at more than one site? (yes or no)

Documentation:

Are the content and methods of the intervention well documented (such as provider training courses and user manuals) and standardised to control quality of service delivery? (yes or no)

Theoretical basis:

Is the intervention based upon a well-accepted theory or developed from a continuing body of work in its field? (yes or no)

Cultural reach:

Has the program been trialed with people in disadvantaged communities, Indigenous people or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

Recommended strategy 1.1: Increased rate of breastfeeding

Name of intervention	Baby-friendly Hospital Initiative
Organisation	World Health Organisation
Brief literature review	The World Health Organisation's Baby-friendly Hospital Initiative (World Health Organisation, 1998) identifies 10 steps to successful initiation of breastfeeding, which have been implemented in various ways throughout the world. Evidence exists for improved effectiveness when the involved hospitals are externally audited for compliance and their involvement over a period of time (Gau, 2004). Evidence is also available to support the various strategies recommended by the WHO, such as the review by Perez-Escamilla et al. (1994) of the infant feeding policies in maternity wards and their effect on breastfeeding success.
How and why does this intervention work?	This is an integrated approach that involves policy and practice change at the institutional level (hospital), training and best practice at the professional level. A trial involving 4,614 women found that exclusive and overall breastfeeding rates were higher in women attending hospitals with changed policies (in line with WHO), and the rates continued to increase significantly each year (n = 4,614).
On what population does this intervention work best?	Pregnant women and immediately after birth.
Where will this intervention work best?	Hospital setting
What is required to implement this intervention?	Organisational and professional commitment
Resources and contact information	World Health Organisation website http://www.who.int/nutrition/topics/bfhi/en/index.html
References	Perez-Escamilla et al. (1994) Gau (2004) World Health Organisation (1998)

Recommended strategy 1.2: Increased rate of breastfeeding

Name of intervention	Community outreach
Organisation	Health services
Brief literature review	Community support programs need to be implemented to support maintenance of exclusive breastfeeding for the recommended six months, with continuation into the second year and beyond. Strong evidence exists for the impact of education by health professional staff (nurses and lactation specialists) alone (Guise, 2003, Lana, Lamounier and Cesar, 2003), integration of breastfeeding counselling within multiple community-based services (Bhandari, 2005) and for home visits (Morrow et al.,1999). The latter two approaches have been preceded by specific training of health staff using WHO breastfeeding counselling materials or training by the La Leche League.
How and why does this intervention work?	This interventions works through providing ongoing support to the mother, as she deals with the everyday issues that may impact on her health and her capacity to breastfeed her child. It also serves to reinforce the breastfeeding information that she has received during her antenatal contacts with the health services. Increases in initiation (23 per cent increase) and duration (39 per cent increase) were found with education programs (Guise, 2003). Increasing the number of channels providing breastfeeding counselling increased breastfeeding prevalence at three months ($p = 0.002$).
On what population does this intervention work best?	Mothers who have initiated breastfeeding while in the hospital.
Where will this intervention work best?	In home and community settings, where professional support for new mothers is provided within the community.
What is required to implement this intervention?	Training of staff and reorientation of service provision.
Resources and contact information	Training materials available at WHO website: www.who.int/en
References	Bhandari (2005) Guise (2003) Lana, Lamounier and Cesar (2003) Morrow et al. (1999)

Recommended strategy 1.3: Increased rate of breastfeeding

Name of intervention	Multi-strategy, community intervention
Organisation	Lead by health services
Brief literature review	Large scale, multi-strategy, community-based interventions have demonstrated significant improvements in the initiation and maintenance of exclusive breastfeeding. A study by Quinn et al. (2005) reported on the effectiveness of the Linkages Project, a broad scale community-based intervention in Africa and Latin America. Significant improvements were achieved in the initiation of breastfeeding within one hour of birth and also in the exclusivity of breastfeeding of infants up to six months of age. Population reach was one million in Bolivia, 3.5 million in Ghana and six million in Madagascar.
How and why does this intervention work?	The projects aimed to maximise existing government and NGO resources and focused on four main community components: building partnerships, capacity building, behaviour change communication and community activities to reach mothers. These were combined with staff training, monitoring and evaluation. Improvements were detected as early as nine months after initiation of the programs.
On what population does this intervention work best?	This is a universal approach aimed at pregnant women and new mothers.
Where will this intervention work best?	In a location with integrated, community-based services.
What is required to implement this intervention?	These kinds of interventions provide an opportunity for community health services and non-government organisations to work together.
Resources and contact information	
References	Quinn et al. (2005)

Recommended strategy 1.4: Increased rate of breastfeeding

Name of intervention	Health professional education initiatives
Organisation	Health services
Brief literature review	When education alone has been implemented, it was conducted by nurses or lactation specialists in the antepartum period, of variable duration (30-90 minutes), in individual or group situations and with structured content (Guise, 2003). Written materials alone were insufficient and, when used in conjunction with education, did not increase the effectiveness of the education alone.
How and why does this intervention work?	The breastfeeding message is reinforced by professionals who are perceived to be trustworthy in relation to health messages. Practical advice and reliable information on breastfeeding was also provided. Gau (2004) found that women prefer to receive information about breastfeeding from nurses (58.6 per cent) and doctors (46 per cent), and that breastfeeding initiation and duration was directly proportional to mother's knowledge and attitude.
On what population does this intervention work best?	This is a universal approach targeting all pregnant women and new mothers.
Where will this intervention work best?	Education interventions rely on the credibility of the person delivering the information and are best implemented within health services.
What is required to implement this intervention?	Training of health professionals in counselling mothers and health service commitment to service reorientation.
Resources and contact information	WHO training information on website.
References	Gau (2004) Guise (2003)

Recommended strategy 1.5: Increased rate of breastfeeding

Name of intervention	Peer support
Organisation	Australian Breastfeeding Association
Brief literature review	<p>The Australian Breastfeeding Association (ABA) (formerly Nursing Mothers Association of Australia) has been providing peer support to Australian mothers since 1964. Its primary aim is to provide mother-to-mother support through a network of local groups and voluntary counsellors, who assist breastfeeding women through face-to-face and telephone counselling and providing written materials.</p> <p>ABA breastfeeding counsellors are experienced mothers who have completed an intensive training program and have successfully breastfed their own children. They are bound by a code of ethics.</p>
How and why does this intervention work?	<p>Peer support works by providing timely assistance when it is needed. Although the ABA has been operating for some decades, and is based on the work of the La Leche League in the USA, its work has not been formally evaluated. Nevertheless, its website states that: ‘the Association is supported by health authorities and specialists in infant and child health and nutrition, including a panel of distinguished honorary advisers. ABA is recognised internationally as a source of accurate information about breastfeeding management and research’ (www.breastfeeding.asn.au).</p> <p>The literature has some information on the impact of community-based peer support programs, but findings are mixed. A small (n = 130 women) randomised community-based intervention in Mexico City studied the effect of home-based peer counselling (trained by the La Leche League) on duration of breastfeeding (Morrow et al., 1999). Women who received peer-counselling visits were significantly more likely to be still breastfeeding their child at three months of age compared with women who did not receive the visits. However, this same result was not found with a similar, quasi-experimental study in Glasgow (McInnes, Love and Stone, 2000).</p>
On what population does this intervention work best?	This is a universal approach targeting all pregnant women and new mothers.
Where will this intervention work best?	Where a peer support organisation is well established, it can complement the professional advice given in health care settings.
What is required to implement this intervention?	Effective communication between health services and the peer support organisation is desirable.
Resources and contact information	Australian Breastfeeding Association www.breastfeeding.asn.au
References	Bryant (1982) McInnes, Love and Stone (2000) Morrow et al. (1999)

5. Antenatal and parental smoking

5.1 Decreased rate of women smoking during pregnancy – literature review

5.1.1 Background

In 2003 approximately 17 per cent of Australian women reported smoking while pregnant and over half of Aboriginal and Torres Strait Islander mothers report smoking during pregnancy (Laws, Grayson and Sullivan, 2006). In some Australian states and territories the prevalence of smoking during pregnancy is even higher than the incidence of smoking in the overall population (Lassen and Oei, 1998).

Smoking during pregnancy doubles the risk of having a low birth-weight baby and significantly increases the rate of perinatal mortality and other adverse pregnancy outcomes (Walsh, Lowe and Hopkins, 2001). Several factors have been identified with smoking during pregnancy including younger age of the mother, lower educational level, being unmarried and living with a partner who smokes (Walsh et al., 1997).

The effects of smoking during pregnancy have been linked with sudden infant death syndrome, asthma, attention deficit hyperactivity disorder (ADHD) and obesity (Laws, Grayson and Sullivan, 2006). A child's later physical and mental functioning may also be affected by smoking during pregnancy with evidence of a dose-response relationship present (Lassen and Oei, 1998).

5.1.2 The evidence base

Smoking cessation programs in pregnancy can reduce the proportion of women who continue to smoke and can reduce low birth weight and preterm birth (Lumley et al., 2004). Effective interventions for pregnant smokers include promoting cessation before and at the beginning of pregnancy, increasing delivery of the intervention early in the pregnancy, assisting spontaneous and intervention assisted quitters to remain tobacco free post-partum, aiding late-pregnancy smokers and involving the partner of the pregnant smoker (DiClemente, Dolan-Mullen and Windsor, 2000).

A review by Melvin and colleagues (2000) of evidence underlying recommended counselling for pregnant women found there were five important steps for counselling during pregnancy. These included asking the patient about their smoking status, advising the pregnant smoker to quit using personalised messages, assess their willingness to quit, assist the pregnant smoker to quit and arranging for follow-up or referral (Melvin et al., 2000).

Telephone counselling can help people stop smoking when provided as part of a program or separately and can reach a large number of people (Stead, Perera and Lancaster, 2006). Telephone counselling can be offered to antenatal clinic patients identified as smokers or recent quitters at their first clinic visit. A review of trials found telephone counselling to be effective and likely to be most effective when it involves multiple sessions (Stead, Perera and Lancaster, 2006).

An issue for smoking cessation interventions is the number of women who relapse after quitting during pregnancy. Post-partum relapse may be as high as 80 per cent among women who smoke but quit at some time during their pregnancy (Fang et al., 2004). Smoking cessation programs for women who have quit for the pregnancy should shift focus towards the end of the pregnancy to the continuation of cessation for the health of the mother as well as the baby (DiClemente, Dolan-Mullen and Windsor, 2000).

A review of group sessions for pregnant women found them to be ineffective (Dolan-Mullen, Ramirez and Groff, 1994). There is currently insufficient evidence for developing guidelines for the use of nicotine replacement therapy (NRT) during pregnancy (Trotter and Montague, 2003), however NRT may be useful for women who have otherwise not been able to quit (TUDCPGP, 2000).

A review of tobacco interventions among Aboriginal and Torres Strait Islander people found only a few published interventions of which none were able to demonstrate an effect (Ivers R, 2003). None of these interventions were aimed at assisting pregnant Aboriginal and Torres Strait Islander smokers.

5.1.3 Selection of recommended interventions

Almost all interventions aimed at reducing smoking during pregnancy found were based in a pre-natal care setting.

The Smoke Free Families (SFF) program was set up to assist women to stop smoking during and beyond pregnancy. Results of the SFF research, reviews and meta-analyses confirmed that a brief (five to 15-minute) counseling intervention,

delivered by a trained provider and paired with pregnancy-specific self-help materials, can increase cessation rates among pregnant smokers by 30 to 70 per cent (Pletsch and Morgan, 2002). The evidence-based intervention is based on the following five steps:

- ask the patient about their smoking status
- advise them about the benefits of quitting if they smoke and the effect of smoking and quitting on the woman and the foetus
- assess the willingness of the patient to make a quit attempt within the next 30 days
- assist them with ways to quit by providing pregnancy-specific, self-help smoking materials; suggesting problem-solving methods and skills for quitting; providing social support as part of the treatment and helping to arrange social support for the woman among family, friends and co-workers
- arrange to track the progress of the patient's attempt to quit smoking during follow-up visits.

The Five Step Strategy is based on the US clinical practice guideline for treating tobacco use and dependence (US Public Health Service Report, 2000) and incorporates a five-step strategy similar to the Smoke Free Families:

- Ask: to identify smokers and document tobacco use
- Assess: motivation and confidence to quit and stay stopped
- Advise: all smokers to quit based on the health effects of smoking and benefits of quitting; to congratulate those who have quit and encourage them to stay stopped
- Assist: appropriately, dependent on the stage the person is at
- Ask again/arrange follow-up: to provide further support and encouragement.

Quit Victoria provides training for professionals as well as printed resources and take home material for pregnant women.

Three Centres guidelines for smoking cessation in antenatal care – these guidelines are for promoting smoking cessation in pregnant women during routine antenatal care (Trotter and Montague, 2003). The three hospitals that developed the guidelines (Mercy Hospital et al., 2001) have developed manuals, training and systems for monitoring of guidelines. They use a five-step model for offering smoking interventions to pregnant women who smoke or have recently quit. For the guidelines to be of any value they must be used as part of routine care and staff need to be trained in the guidelines and their practice monitored.

Telephone counselling – a pilot study of a telephone counselling service was conducted at the Royal Women's Hospital, Melbourne between April 1998 and September 1998 (Trotter, 2000). This pilot study utilised the Quitline callback service. Pregnant women were asked if they would like to have a telephone counsellor contact them to assist them with smoking cessation. Counsellors, who have been trained to work with this particular group of smokers, make calls to patients as needed (approximately seven calls) both throughout the pregnancy and for three months post-partum. Calls are arranged to occur frequently around critical times such as the planned quit day and weaning. Patients may also initiate calls.

Women who were current smokers or recent quitters presenting at the antenatal clinic were invited to participate. The study recruited 98 smokers and 102 recent quitters. This intervention was provided as part of a smoking cessation program. As a result of this pilot study, the tailored Quitline callback service for pregnant women who smoke or have recently quit is now provided throughout pregnancy and the post-partum period.

5.1.4 Discussion

There is strong evidence to indicate that there are definite benefits to implementing interventions to assist pregnant women with smoking cessation. Prenatal and post-partum care are the most accessible settings to provide effective smoking cessation interventions. The most effective interventions involve a five-step strategy that assists women throughout pregnancy and into the post-partum period when the risk of relapse is very high. The use of telephone counselling services is also an effective resource for assisting women to quit smoking and continue with smoking cessation.

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Table 3: Decreased rate of women smoking during pregnancy – recommended strategies

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(2.1) Three Centres Consensus Guidelines	5	Y	Y	Y	N/A
(2.2) Five Step Strategy on Antenatal Care	1	Y	Y	Y	LOW SES
(2.3) Smoke Free Families to Quit Smoking	4	Y	Y	Y	LOW SES CALD
(2.4) Telephone counselling for pregnant women	3	Y	Y	Y	LOW SES

Key*Supporting evidence:*

1. Well-supported practice – evaluated with a prospective randomised controlled trial.
2. Supported practice – evaluated with a comparison group and reported in a peer-reviewed publication.
3. Promising practice – evaluated with a comparison group.
4. Acceptable practice – evaluated with an independent assessment of outcomes, but no comparison group (such as pre and post-testing, post-testing only or qualitative methods) or historical comparison group (such as normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (such as formative evaluation, service evaluation conducted by host organisation).

Replication:

Has the intervention been implemented and independently evaluated at more than one site? (yes or no)

Documentation:

Are the content and methods of the intervention well documented (such as provider training courses and user manuals) and standardised to control quality of service delivery? (yes or no)

Theoretical basis:

Is the intervention based upon a well-accepted theory or developed from a continuing body of work in its field? (yes or no)

Cultural reach:

Has the program been trialed with people in disadvantaged communities, Indigenous people or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

Recommended strategy 2.1: Decreased rate of women smoking during pregnancy

Name of intervention	Three Centres consensus guidelines on antenatal care
Organisation	The Cancer Council Victoria and Quit Victoria
Brief literature review	The guidelines include a section on promoting smoking cessation in pregnant women during routine antenatal care. This advice is based on a five-step model for offering smoking interventions to those who smoke or have recently quit. The five steps are: ask all women about their smoking using a multiple choice question; advise all women who smoke or have recently quit about the health risks to their babies and themselves of smoking and to quit; assess the woman's willingness to quit; according to willingness, provide assistance (take-home materials, set a quit date, put support in place, provide information for partner); follow-up again by asking about smoking and giving appropriate support and encouragement.
How and why does this intervention work?	The guidelines were developed using four steps. Search questions were developed to scrutinise literature, followed by a systematic search of literature using search questions. The literature was then reviewed and conclusions drawn. Findings were integrated clinical expertise through consultation with field experts. The evidence indicated that the most effective interventions are intensive with multiple formats such as brief counselling, self-help written materials and multiple contacts, including follow-up.
On what population does this intervention work best?	The guidelines are to be used as part of routine antenatal care. All women who are current smokers and recent quitters may benefit from the implementation of the guidelines.
Where will this intervention work best?	This intervention is designed to be implemented by health professionals providing antenatal care.
What is required to implement this intervention?	For the guidelines to be of any value they must be used as part of routine care. Staff need to be trained and their practice monitored.
Resources and contact information	The three hospitals that developed the guidelines (Mercy Hospital et al., 2001) have developed manuals, training and systems for monitoring of guidelines. Quit Victoria (www.quit.org.au) also offers training courses and a flow chart for easy reference.
References	Trotter L, and Montague, M (2000-01) Mercy Hospital for Women, Southern Health Services and Women's and Children's Hospital (2001)

Recommended strategy 2.2: Decreased rate of women smoking during pregnancy

Name of intervention	Five-step strategy to quit smoking
Organisation	No specific organisation
Brief literature review	<p>An effective approach to assessing and assisting patients who smoke is the five-step model known as the 5A's. This approach is a guide to discussing with clients their smoking behaviour. The 5A's are five steps: Ask, Advise, Assess, Assist and Arrange.</p> <p>Step 1: Ask Ask about smoking status using a multiple option question:</p> <ul style="list-style-type: none"> • I have never smoked, or I have smoked fewer than 100 cigarettes in my lifetime. • I stopped smoking before I found out I was pregnant and I am not smoking now. • I stopped smoking after I found out I was pregnant and I am not smoking now. • I smoke some now, but I cut down on the number of cigarettes I smoke since I found out I was pregnant. • I smoke regularly now, about the same as before I found out I was pregnant. <p>Note: Simply asking someone whether or not they smoke is not useful. Women who answer B or C should be congratulated and encouraged to continue. Women who answer D or E should progress through steps 2 to 5.</p> <p>Step 2: Advise. Provide clear and strong advice to quit with tailored messages about smoking and quitting for the mother and the foetus.</p> <p>Step 3: Assess. Assess the woman's willingness to attempt to quit within the next 30 days.</p> <p>Step 4: Assist. Provide self-help material specifically designed for pregnant women. Arrange social support in the smoker's environment. Provide social support. Suggest and encourage the use of problem-solving methods and skills to stop.</p>
How and why does this intervention work?	The approach is supported by the United States Clinical Practice Guidelines (2000).
On what population does this intervention work best?	This strategy has been developed to assist pregnant women in the general population as well as women from a low socio-economic status.
Where will this intervention work best?	This intervention is best implemented by health professionals in a pre-natal care setting.
What is required to implement this intervention?	Training for health professionals (contact Quit Victoria). Guides or manuals for health professionals. Written and other materials for pregnant women.

Resources and contact information	<p>Quit Victoria www.quit.org.au/index2.html</p> <p>Smoke Free Pregnancy Project – Quit SA http://www.quitsa.org.au/asp/smoke_free_pregnancy_project.aspx</p> <p>Preventing Smoking During Pregnancy Practice Resource. http://www.rch.org.au/ccch/research/index.cfm?doc_id=9712</p> <p>A Pregnant Woman’s Guide to Quit Smoking Order Form. http://www.doh.wa.gov/cfh/mch/documents/CessationFinal_122.pdf</p> <p>Smoking Cessation During Pregnancy: Guidelines for Intervention. http://www.doh.wa.gov/cfh/mch/documents/CessationFinal_122.pdf</p>
References	<p>US Public Health Service Report (2000) A clinical practice guideline for treating tobacco use and dependence. <i>JAMA</i>, 238(24): 3244-3254.</p> <p>Bailey D, Taylor P and Zaichkin J, (eds) (2002) <i>Smoking Cessation During Pregnancy: Guidelines for Intervention</i>. Washington State Department of Health, Olympia.</p>

Recommended strategy 2.3: Decreased rate of women smoking during pregnancy

Name of intervention	Smoke Free Families
Organisation	Robert Wood Johnson Foundation
Brief literature review	<p>The Smoke Free Families (SFF) program was set up to assist women to stop smoking during and beyond pregnancy. The evidence-based intervention is based on the following five steps:</p> <ol style="list-style-type: none"> 1. ask the patient about their smoking status 2. advise them about the benefits of quitting if they smoke and the effect of smoking and quitting on the woman and the foetus 3. assess the willingness of the patient to make a quit attempt within the next 30 days 4. assist them with ways to quit by providing pregnancy-specific, self-help smoking materials; suggesting problem-solving methods and skills for quitting; providing social support as part of the treatment and helping to arrange social support for the woman among family, friends and co-workers 5. arrange during follow-up visits to track the progress of the patient's attempt to quit smoking.
How and why does this intervention work?	Results of the SFF research, reviews and meta-analyses confirmed that a brief (five to 15-minute) counselling intervention, delivered by a trained provider and paired with pregnancy-specific self-help materials, can increase cessation rates among pregnant smokers by 30 to 70 per cent (Pletsch and Morgan, 2002).
On what population does this intervention work best?	This intervention is best used with pregnant women in the pre-natal and post-partum period.
Where will this intervention work best?	This intervention is best used in a pre-natal and post-natal care setting.
What is required to implement this intervention?	Contact Smoke-Free Families below to discuss various needs and requirements
Resources and contact information	<p>Smoke-Free Families National Dissemination Office Cecil G. Sheps Center for Health Services Research CB# 7590, 725 Airport Road, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-7590 Phone: 919-843-7663 Fax: 919-966-9764 E-mail: smokefreefamilies@unc.edu</p> <p>Smoke-Free Families National Program Office University of Alabama at Birmingham, School of Medicine, Department of Obstetrics and Gynecology, CIRC 320, 1530 3rd Avenue South, Birmingham, AL 35294-0021 Phone: 205-975-8951 Fax: 205-975-4411 E-mail: SFF@obgyn.uab.edu Website: http://www.smokefreefamilies.org</p>

References

Findings from phase I SFF projects appear in the September 2000 (Volume 9, Supplement 3) Supplement of Tobacco Control: Smoking and Pregnancy: Research Findings from the Smoke-Free Families Program.

Phase II trials and projects have been reported in *Nicotine and Tobacco Research* Vol. 6, Supplement 2, April 2004.

Recommended strategy 2.4: Decreased rate of women smoking during pregnancy

Name of intervention	Smoking cessation telephone counselling program for pregnant women
Organisation	Quit Victoria, Royal Women's Hospital, Melbourne and Department of Human Services, Victoria.
Brief literature review	Telephone counselling can help people stop smoking when provided as part of a program or separately and can reach a large number of people (Stead, Prera and Lancaster, 2006). Telephone counselling can be offered to antenatal clinic patients identified as smokers or recent quitters at their first clinic visit. The intervention involves asking pregnant women if they would like to have a telephone counsellor contact them to assist them with smoking cessation as part of the five-step process: ask, assess, advise, assist, ask again/arrange follow-up. Trained counsellors, who have been trained to work with this particular group of smokers, make calls to patients as needed (approximately seven calls), both throughout the pregnancy and for three months post-partum. Calls are arranged to occur frequently around critical times such as the planned quit day and weaning. Patients may also initiate calls.
How and why does this intervention work?	A review of trials found telephone counselling to be effective and likely to be most effective when it involves multiple sessions (Stead, Prera and Lancaster, 2006). A pilot study of the telephone counselling service was conducted between April 1998 and September 1998. Women who were current smokers or recent quitters presenting at the antenatal clinic were invited to participate. The study recruited 98 smokers and 102 recent quitters.
On what population does this intervention work best?	Pregnant women
Where will this intervention work best?	This intervention would work best as part of a smoking cessation program provided as part of antenatal care. This intervention was delivered at a hospital antenatal clinic. Telephone counselling may be difficult when working with women who lack motivation, have poor communication skills or live unstructured lives.
What is required to implement this intervention?	This pilot study utilised the Quitline callback service. Counsellors are given training for working with pregnant women were utilised for the study.
Resources and contact information	Website: www.quit.org.au The Quitline callback service is free.
References	Trotter L. Pilot study of a smoking cessation telephone counselling program for pregnant women. <i>Quit Evaluation Studies No 10 1998-1999</i> . Chapter 12: 155-169. Stead LF, Perera R, and Lancaster T (2006) Telephone counselling for smoking cessation. <i>Cochrane Database of Systematic Reviews</i> , Issue 3.

5.2 Decreased rate of children exposed to tobacco smoke in the home

5.2.1 Background

The US Surgeon General's report found that environmental tobacco smoke caused disease in non-smokers and that exposed children were more likely to suffer respiratory problems (US Department of Health and Human Services, 1986). The home is the most significant source of exposure to environmental tobacco smoke (ETS) for children (Gehrman and Hovell, 2003). In the US estimates suggest that almost 40 per cent of children younger than five years live with a smoker (Emmons et al., 2001).

Childhood exposure to ETS is associated with an increased prevalence of asthma among adult never-smokers, children exposed to ETS are more likely to become smokers and ETS is a major contributor to lower airway irritants (Larsson et al., 2001). Research has shown that ETS is an important contributor to sudden infant death syndrome (SIDS) with smoking households over-represented among SIDS cases (Golding, 1997).

An Australian survey found that in 1997, 42 per cent of smokers always or usually smoked outside, 33 per cent sometimes smoked outside and sometimes inside and 25 per cent usually or always smoked inside (Trotter and Mullins, 1998).

A Dutch study found that maintaining non-smoking behaviour in the presence of the child was more successful in households where only one parent smoked (Crone et al., 2003). They concluded that this was because the non-smoking parent can support and motivate the smoking parent and it is more difficult to change behaviour when both parents smoke (Crone et al., 2003).

An Australian survey found that in households with children where there is an adult in the house that does not smoke 43 per cent of smokers reported that they smoke outside as opposed to 18 per cent of smokers in households where there are no non-smoking adults (Trotter and Mullins, 1998). In addition the prevalence of exposure of children to ETS tends to be lower among mothers with a higher education level (Crone et al., 2003).

5.2.2 The evidence base

Although there has been an increase in the prevalence of smoke free environments in the home and private cars, a significant proportion of children remain unprotected in these environments (VicHealth Centre for Tobacco Control, 2002).

A review of strategies to reduce exposure to ETS found that smoking bans and restrictions were effective (Task Force on Community Preventive Services, 2001).

The most effective interventions include non-confrontational media campaigns for promoting the social desirability of smoking control within the home and car where children are present with focussed, clinical interventions necessary only with people who have been unable to comply with bans and restrictions (VicHealth Centre for Tobacco Control, 2002).

Clinical ETS interventions can be effective in reducing home exposure for children (Gehrman and Hovell, 2003; Crone et al., 2003). A child's clinic visit appears to be the most effective time to reach parents who smoke (Winickoff et al., 2003a; Winickoff et al., 2003b).

Interventions using a five-step procedure in counselling parents appear to be effective (Crone et al., 2003; Fossum, Arborelius and Bremberg, 2004). These strategies typically involve asking about smoking at home and in the presence of children, discussing the health consequences of ETS exposure to children, assessing readiness to change and what possible changes might be, supporting change and help to remove barriers and deal with problems, follow-up and support for behaviour changes (Crone et al., 2003; Fossum, Arborelius and Bremberg, 2004).

5.2.3 Selection of recommended interventions

The **Newborns Asthma and Parental Smoking Project (NAPS)** is a Western Australian project aimed at reducing wheeze and asthma in newborns by addressing parental smoking and passive smoking. The project included:

- providing resources directly to pregnant women
- training child health nurses
- providing resources to pharmacists
- providing resources to GPs
- local media strategies.

Evaluation of the project showed that the most effective strategies were those employed within the existing health service (VicHealth Centre for Tobacco Control, 2002).

The Stop Tobacco Outreach Program (STOP) used a prospective cohort design to provide an intervention to smoking parents of children admitted to hospital for a respiratory illness. The intervention included an initial motivational interview, written material, nicotine replacement therapy, telephone counselling and a fax referral to the parents' primary clinician (Winickoff et al., 2003a)

The ETS and Children Project aims to reduce exposure of children and infants aged up to six years to environmental tobacco smoke in homes and cars in NSW (The Cancer Council NSW). The project is primarily aimed at parents and carers of children aged up to six years. The objectives of the project are:

- to increase awareness among parents and carers of the health effects of ETS on children and infants
- increase knowledge of strategies to reduce exposure in cars and homes
- increase the number of households with smoking bans or restrictions in the presence of children and infants
- increase the number of professionals identifying infants and children at risk of ETS exposure and providing information and advice to parents and carers.

Surveys conducted as part of the project evaluation showed the percentage of smoke-free homes rose from 46.9 per cent in 2002 to 73 per cent in 2005 and the per cent of smoke-free cars rose from 42.8 per cent in 2002 to 60.7 per cent in 2005 (www.smokefreezone.org).

5.2.4 Discussion

The normalisation of smoking bans and restrictions has been successful in reducing the general exposure of individuals to ETS. Where children are concerned, the home and private vehicles are the main contributors to childhood exposure to ETS. Clinical interventions that can be accessed by parents during pre and post-natal visits and child health visits to health services provide an avenue to assist adults to reduce their child's exposure to ETS when they have not been able to quit smoking or to comply with bans and restrictions.

5.2.5 References

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Winickoff J, Hillis V, Palfrey J, Perrin J & Rigotti N, (2003b). Intervention with parental smokers in an outpatient pediatric clinic using counselling and nicotine replacement. *Pediatrics*, 112(5): 1127-1133.

Table 4: Decreased rate of children exposed to tobacco smoke in the home – recommended strategies

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(3.1) Car and Home: Smoke Free Zone	4	Y	Y	Y	LOW SES
(3.2) STOP Program	4	Y	N	Y	LOW SES
(3.3) NAPS	4	Y	Y	Y	INDIGENOUS

Key

Supporting evidence:

1. Well-supported practice – evaluated with a prospective randomised controlled trial.
2. Supported practice – evaluated with a comparison group and reported in a peer-reviewed publication.
3. Promising practice – evaluated with a comparison group.
4. Acceptable practice – evaluated with an independent assessment of outcomes, but no comparison group (such as pre and post-testing, post-testing only or qualitative methods) or historical comparison group (such as normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (such as formative evaluation, service evaluation conducted by host organisation).

Replication:

Has the intervention been implemented and independently evaluated at more than one site? (yes or no)

Documentation:

Are the content and methods of the intervention well documented (such as provider training courses and user manuals) and standardised to control quality of service delivery? (yes or no)

Theoretical basis:

Is the intervention based upon a well-accepted theory or developed from a continuing body of work in its field? (yes or no)

Cultural reach:

Has the program been trialed with people in disadvantaged communities, Indigenous people or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

Recommended strategy 2.5: Decreased rate of children exposed to tobacco smoke in the home

Name of intervention	Environmental Tobacco Smoke (ETS) and Children Project ('Car and Home: Smoke Free Zone')
Organisation	The Cancer Council, NSW.
Brief literature review	The ETS and Children Project aims to reduce exposure of children and infants aged up to six years to environmental tobacco smoke in homes and cars in NSW (The Cancer Council NSW). The objectives of the project are to: increase awareness among parents and carers of the health effects of ETS on children and infants; increase knowledge of strategies to reduce exposure in cars and homes; increase the number of households with smoking bans or restrictions in the presence of children and infants; increase the number of professionals identifying infants and children at risk of ETS exposure and providing information and advice to parents and carers.
How and why does this intervention work?	Surveys conducted as part of the project evaluation showed that the percentage of smoke-free homes rose from 46.9 per cent in 2002 to 73 per cent in 2005 and the per cent of smoke-free cars rose from 42.8 per cent in 2002 to 60.7 per cent in 2005 (website http://www.smokefreezone.org/index.cfm/page_id/1061)
On what population does this intervention work best?	The project is primarily aimed at parents and carers of children aged up to six years. It has been rolled out to the general population but has also included Aboriginal and Torres Straight Islander people and people from culturally and linguistically diverse communities as priority populations.
Where will this intervention work best?	Community projects and delivery by health professionals.
What is required to implement this intervention?	Training and resources are available from the NSW Cancer Council to assist with project implementation.
Resources and contact information	www.smokefreezone.org
References	The Cancer Council NSW Health Development Division, Environmental Tobacco Smoke and Children Project: Strategic Plan 2001-2005. http://www.smokefreezone.org/site_files/s1001/downloads/Strategic_Plan.pdf

Recommended strategy 2.6: Decreased rate of children exposed to tobacco smoke in the home

Name of intervention	Stop Tobacco Outreach Program (STOP)
Organisation	MGH Centre for Child and Adolescent Health Policy
Brief literature review	STOP was aimed at smoking parents of children admitted to hospital for respiratory illness. The intervention included an initial motivational interview, written material, nicotine replacement therapy, telephone counselling and a fax referral to the parent's primary clinician (Winickoff et al., 2003a).
How and why does this intervention work?	The program was evaluated using a prospective cohort design. Primary outcomes of the study were to successfully complete all three counselling sessions. Follow-up outcomes looked for quit attempts, cessation, NRT use, primary-care visits, household smoking prohibition and satisfaction. At follow-up, parents reported significantly less ETS exposure of their children and a more than doubling in the number of parents who have rules prohibiting smoking in the house. The program successfully engaged parents in the intervention at a child's clinic visit who otherwise may have been unable to access a smoking cessation intervention (Winickoff et al., 2003b).
On what population does this intervention work best?	Parents who smoke, particularly those whose children are developing respiratory illness.
Where will this intervention work best?	STOP should be used to engage parents during their children's visits to health care professionals.
What is required to implement this intervention?	Training, written resources, NRT and access to telephone counselling services.
Resources and contact information	Authors contact: Jonathon Winickoff, MGH Center for Child and Adolescent Health Policy, 50 Staniford St, Ste 901, Boston, MA 02144. E-mail: jwinickoff@partners.org
References	Winickoff J, Hillis V, Palfrey J, Perrin J and Rigotti N, 2003a. A smoking cessation intervention for parents of children who are hospitalised for respiratory illness: The Stop Tobacco Outreach Program. <i>Pediatrics</i> , 111(1): 140-145. Winickoff J, Hillis V, Palfrey J, Perrin J and Rigotti N, 2003b. Intervention with parental smokers in an outpatient pediatric clinic using counselling and nicotine replacement. <i>Pediatrics</i> , 112(5): 1127-1133.

Recommended strategy 2.7: Decreased rate of children exposed to tobacco smoke in the home

Name of intervention	Newborns – Asthma and Parental Smoking Project (NAPS)
Organisation	Asthma WA
Brief literature review	<p>This project is aimed at reducing wheeze and asthma in newborns by addressing parental smoking and passive smoking. The project involved: providing resources directly to pregnant women; training child health nurses; providing resources to pharmacists and GPs; and local media strategies. The most effective strategies were:</p> <ul style="list-style-type: none"> • dissemination of ‘Care for my air!’ packs (formerly ‘Baby Starter’ packs) to all women who intend to give birth at a participating hospital • training for child health nurses, antenatal educators and midwives to deliver education sessions or advice to pregnant women and new mothers related to avoiding tobacco smoke • liaison with tertiary institutions to maintain resources and training and promotion of the message through community networks. <p>The 2005-07 phase of the program will focus specifically on indigenous women and trialing culturally-appropriate materials.</p>
How and why does this intervention work?	<p>The NAPS project was initiated in 1998 to trial various strategies for providing antenatal information to women on the dangers of passive smoking to the foetus and to infant health. Positive evaluation results led to the continuation and expansion of the program in 2000-01. A regional pilot was also conducted during this phase. The program was further extended to the whole state between 2002-05. A further phase is now being implemented from 2005-07. A wide range of evaluated strategies are continuing to be implemented. Evaluation of the project showed that the most effective strategies were those employed within the existing health service (VicHealth Centre for Tobacco Control, 2002).</p>
On what population does this intervention work best?	NAPS has been successfully trialed with women in both metropolitan and regional areas. Trials with Indigenous women are also underway.
Where will this intervention work best?	This intervention will work best in a prenatal and antenatal care setting in metropolitan and regional health services.
What is required to implement this intervention?	Training for health professionals working with pregnant women, new mothers and their families. ‘Care for my air!’ baby starter packs.
Resources and contact information	<p>Contact the project coordinator at ask@smokefreebaby.org.au or 08 9289 3641.</p> <p>Website: www.smokefreebaby.org.au</p> <p>The project Coordinator is based at the Asthma Foundation of WA at: 36 Ord Street, West Perth, WA 6005.</p> <p>PO Box 864, West Perth, WA 6872.</p> <p>Phone: 08 9289 3600</p> <p>Fax: 08 9289 3601</p>
References	VicHealth Centre for Tobacco Control (2002)

6. Immunisation

6.1 Increased rates of immunisation – literature review

6.1.1 Background

Immunisation may be defined as the process that converts an individual from a susceptible to an immune status. The purpose of immunisation is to induce protection (immunity) from subsequent disease, similar to that induced by natural infection, with minimal or no systemic symptoms (Ministry of Health, New Zealand, 2002). The terms ‘vaccination’ and ‘immunisation’ are often used interchangeably though their meanings are not equivalent. Vaccination is a term that originally referred to the inoculation of ‘vaccinia’ virus to render individuals immune to smallpox. Today, the term ‘vaccination’ means the administration, usually by injection, mouth or any other route, of a vaccine. Vaccination or suffering from the disease, does not necessarily always result in immunisation (Ministry of Health, New Zealand, 2002).

Immunisation is a successful and cost-effective intervention for preventing disease. Childhood immunisation, in particular, has been recognised as one of the most significant public health achievements (The Centers for Disease Control and Prevention, 1999). Consequently, improving immunisation cover has been identified by the World Health Organisation (WHO) as an indicator for the United Nations Millennium Development Goal 4, to ‘reduce child mortality’ (WHO, 2004).

It is important that children receive all required immunisations and that these immunisations are provided in a timely manner. However, there are several known barriers to timely child immunisations. Children not immunised on time are likely to be from families of low socio-economic status and members of certain ethnic minority groups (Roberts et al., 2002; Wood and Hafon, 1996). Immunisation rates remain low, particularly in Aboriginal children. Only 58 per cent of Aboriginal children are fully immunised at 15 months, compared to 95 per cent of non-Aboriginal Children (Victorian Department of Human Services, 2004). According to Pruitt, Kline and Kovaz (1995), other identifiable risk factors associated with limited uptake of immunisation include inability to access transport, distrust towards medical practitioners, low parental educational level and single-parent families. There is a strong association between inadequate antenatal care and poor immunisation levels (Swignoski et al., 1995; Stevens-Simon et al., 1996). The section of this report addressing ‘increasing attendances to maternal and child health (MCH) services’, identifies the inclusion of immunisation interventions in the selected MCH programs.

6.1.2 The evidence base

The National Immunisation Program Schedule for Victoria recommends and provides the following vaccines at no cost to children up to eight years: hepatitis B, diphtheria, tetanus, pertussis, polio, haemophilus influenzae type B, pneumococcal, measles, mumps, rubella, meningococcal C and chickenpox (Victorian Department of Human Services, 2005). Despite the availability of these services, Victoria has not reached 100 per cent coverage. Efforts are being made through certain Best Start projects aiming at improving immunisation coverage and targeting hard-to-reach families.

The US Task Force on Community Preventive Services recommends that the starting point for addressing vaccine-preventable disease problems in communities is to assess activities currently being performed, current levels of immunisation coverage and information regarding disease rates. These assessments should then be compared with local and national goals. It is vital not only to select strategies that work in general but also those that are well matched to local needs and capacities. Effective implementation of these strategies is important in improving immunisation coverage at the local level (Task Force on Community Preventive Services, 2000).

Findley, Iriyogen and Sanchez (2004) suggest the following guiding principles when setting up immunisation strategies: sourcing community leadership and support; integrating with current community programs; parental empowerment and education; training peer health educators; tracking with feedback; and linkage with health providers. These are the guiding principles behind the community-based Start Right Program in New York, a program that has successfully raised immunisation rates in children from low socio-economic backgrounds through outreach and tracking for children under five.

There is widespread agreement that the promotion of immunisation is a repetitive, ongoing activity and requires tracking, personalised reminders, and positive feedback to parents (Szilagy et al., 2002; Szilagy et al., 2000; Barnes et al., 1999; Rodewald et al., 1999; Findley et al., 2003).

6.1.3 Selection of recommended interventions

In 2000, the US Task Force on Community Preventive Services completed an in-depth systematic review titled 'Reviews of Evidence Regarding Interventions to Improve Immunisation Coverage in Children, Adolescents and Adults'.

A substantial portion of this section is based on this systematic review and addresses the child-specific interventions.

Strategies aimed at increasing immunisation rates are generally grouped into three main categories:

- increasing community demand for immunisations (patient-oriented interventions)
- enhancing access to immunisation services (system-oriented interventions)
- provider-based interventions (provider-oriented interventions)

(Task Force on Community Preventive Services, 2000).

Each category includes several specific interventions, with a strong focus on strategies targeting children from low socio-economic backgrounds. The four strategies outlined in this report have been recommended on the basis of strong scientific evidence that they improve immunisation coverage, and are patient or system oriented. Provider-based strategies were not selected as they were not appropriate for non-medical based Best Start programs. Table 5 outlines immunisation strategies recommended by the Task Force on Community Preventive Services.

Table 5: Recommended immunisation strategies

Intervention category	Intervention	Recommendation
Patient-oriented	Multi-component interventions that include education	Strong evidence
	Client reminder/recall system	Strong evidence
System-oriented	Home visiting and case management	Sufficient evidence
	Immunisation programs for women, infants and children (WIC) in non-medical settings	Sufficient evidence

Multi-component interventions that include education provide knowledge to target populations and sometimes, to immunisation providers, and use at least one other activity to improve immunisation coverage. These programs address health concerns and barriers to immunisation in an integrated manner. They are based on the premise that prerequisites to health include the physical, social, and political environment in which health risks occur. The programs are aimed at raising community awareness on available immunisation services and incorporate a variety of associated strategies to improve coverage (Task Force on Community Preventive Services, 2000).

Activities that form part of multi-component interventions include a combination of some of the following strategies: mail or telephone reminders, assistance with transportation, home visiting, case management, outreach services, assessment and referral to medical providers, voucher incentives, WIC interventions, event fairs and education programs (Ashkar et al., 2003; Foley et al., 1998; Szilagyi et al., 2002; Browngoehl et al., 1997; Hutchins et al., 1997; Hambidge et al., 2004).

One program using a multi-component approach is the Special Supplement Nutrition Program for women, infants and children (WIC). It works to ensure the health of low-income preschool US children. WIC centres promote immunisation by assessing children's immunisation records and referring those in need of immunisation to their healthcare providers (Ashkar et al., 2003). There is strong evidence to suggest this assessment and referral (A/R) system can improve immunisation cover when combined with other more intensive strategies (Birkhead et al., 1995, 1996; Hoekstra et al., 1998; Hutchins et al., 1997). As part of the WIC program, parents are provided with a monthly food voucher. The parent must return a month later, have the child's immunisation record assessed and pick up another voucher. Children that are not up to date are escorted with the parent to a health clinic to be immunised.

In a variety of settings, a combination of reminder/recall system, outreach, assistance with transportation, scheduling of immunisation appointments and home visiting for those who are most behind on their immunisations have proved to be highly successful in improving immunisation coverage (Szilagyi et al., 2002; Hambidge et al., 2004).

Another innovative approach used to increase immunisation rates is client reminder/recall systems. These systems are used to inform clients when immunisations are due (reminder) or overdue (recall), as well as when to contact their immunisation provider to determine if immunisations are needed. Reminders differ in content and are delivered by a variety of methods. Such methods include communication by telephone, an auto-dialer or mailed letters/postcards. Client reminders can be either specific (such as certain immunisations are due on a specific date) or general.

Client reminder/recall interventions are strongly recommended on the basis of strong scientific evidence that they improve immunisation coverage in a range of settings and populations (including those from low socio-economic backgrounds); when applied at different levels of scale from individual practice settings to entire communities; across a range of intervention characteristics and whether used alone or as part of a multi-component intervention (Task Force on Community Preventive Services, 2000). These systems have been shown to be effective in a variety of settings and have increased immunisation rates up to five per cent to 20 per cent (Szilagyi, 2000; Lieu et al., 1998; Alemi et al., 1996; Stehr-Green et al., 1993; Irigoyen et al., 2000).

The Task Force on Community Preventive Services (2000) identified several economic evaluations of client reminder/recall interventions (Franzini et al., 2000; Lieu et al., 1997, 1998; Irigoyen et al., 2000; McLeod et al., 1998). According to Irigoyen (2000), appointment reminders are highly cost-effective. Postcards have the highest cost-benefit ratio, which he attributes to the higher receipt rate than that of telephone calls. A cost-effectiveness study conducted by Lieu et al. (1998) indicated that letters followed by an automated telephone message was more effective and cost-effective than either message alone. Further analysis shows that the cost-effectiveness of automated telephone messages and letters may vary widely depending on the setting. Their study also provides information on projected annual costs of alternative message strategies (Lieu et al., 1998).

Another successful and recommended intervention used to increase immunisation rates is home visiting (Bond et al., 1998; Task Force on Community Preventive Services, 2000; Browngoehl et al., 1997). Home visits usually involve face-to-face services to clients in their home. Services can include education, assessment of need, referral, or provision of vaccinations. Home visiting programs can also involve telephone or mail reminders. Home visiting interventions are recommended on the basis that they improve immunisation rates. According to Browngoehl (1997), clients who received home visits have significantly higher completed immunisation rates than other clients.

Most available home visiting studies are conducted in socio-economically disadvantaged and hard-to reach sub-populations. It is important to note however, that when applied only to improve vaccination coverage, home-visiting interventions can be highly resource intensive (Task Force on Community Preventive Services, 2000). Four economic evaluations of home visiting programs identified by the Task Force on Community Preventive Services (2000) can be found at www.thecommunityguide.org. Potential barriers to implementing home-visiting programs include the need for staff training and concerns regarding staff safety.

Certain home visiting programs include a case management component. These programs have been shown to be effective at increasing immunisation rates but not cost effective (Wood et al., 1998). It is clear that home visiting programs involve many activities and can therefore be classified as multi-component interventions.

Programs for women, infants and children in non-medical settings have also been shown to be effective in increasing immunisation rates (Hutchins et al., 1997; Askar et al., 2003; Birkhead et al., 1995; WIC Program, 2006). Immunisation programs in WIC settings involve efforts to encourage immunisation of clients from low socio-economic backgrounds in non-medical settings. At a minimum, immunisation – promoting strategies in WIC require assessment and referral. Other services can include education and incentives (Task Force on Community Preventive Services, 2000). Birkhead (1995) indicates that the use of voucher incentives models in WIC settings result in increased immunisation rates. Since WIC programs involve several activities, they can also be classified as multi-component interventions.

In their systematic review, the Task Force on Community Preventive Services (2000) identified two economic evaluations of WIC interventions. Details of these studies are available on www.thecommunityguide.org (Flatt, et al., 1996; Hutchins et al., 1997).

6.1.4 Discussion

The most successful strategies aimed at increasing immunisation rates tend to be multi-component, and involve a variety of interventions that form a holistic approach. An in-depth assessment is necessary in order to identify barriers to immunisation that are specific to a target population. Such barriers must be considered when selecting an appropriate intervention. This could include, for example, incorporating transportation assistance to clients experiencing transportation difficulties or in remote areas. Barriers such as single-parent headed homes or low parental education could be minimised by linking clients with other services that could provide additional social support such as adult literacy programs or single-parent network groups.

Finally, several researchers have reiterated that the promotion of immunisation is a repetitive, ongoing activity and requires tracking, personalised reminders, and positive feedback to parents (Szilagyi et al., 2002; Szilagyi et al., 2000; Barnes et al., 1999; Rodewald et al., 1999; Findley et al., 2003).

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Table 6: Increase rates of immunisation – recommended strategies

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(4.1) Multi-component interventions	1	Y	N	Y	LOW SES
(4.2) Client reminder/recall systems	1	Y	N	Y	LOW SES
(4.3) Home visiting and case management	1	Y	N	Y	LOW SES
(4.4) Immunisation programs for Women, Infants and Children (WIC) in non-medical settings	2	Y	Y	Y	LOW SES

Key

Supporting evidence:

1. Well-supported practice – evaluated with a prospective randomised controlled trial.
2. Supported practice – evaluated with a comparison group and reported in a peer-reviewed publication.
3. Promising practice – evaluated with a comparison group.
4. Acceptable practice – evaluated with an independent assessment of outcomes, but no comparison group (such as pre and post-testing, post-testing only or qualitative methods) or historical comparison group (such as normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (such as formative evaluation, service evaluation conducted by host organisation).

Replication:

Has the intervention been implemented and independently evaluated at more than one site? (yes or no)

Documentation:

Are the content and methods of the intervention well documented (such as provider training courses and user manuals) and standardised to control quality of service delivery? (yes or no)

Theoretical basis:

Is the intervention based upon a well-accepted theory or developed from a continuing body of work in its field? (yes or no)

Cultural reach:

Has the program been trialed with people in disadvantaged communities, Indigenous people or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

Recommended strategy 3.1: Increased rates of immunisation

Name of intervention	Multi-component interventions including education
Organisation	No specific organisation
Brief literature review	Multi-component interventions that include education provide knowledge to target populations (sometimes including immunisation providers) and use at least one other activity to improve immunisation coverage. They are based on the premise that prerequisites to health include the physical, social, and political environment in which health risks occur. The programs are aimed at raising community awareness on available immunisation services and incorporate a variety of associated strategies to improve coverage. Activities that form part of multi-component interventions include a combination of some of the following strategies: mail or telephone reminders, assistance with transportation, home visiting, case management, outreach services, assessment and referral to medical providers, voucher incentives, WIC interventions, event fairs and education programs.
How and why does this intervention work?	These programs address health concerns and barriers to immunisation in an integrated manner. They improve immunisation cover in community-wide settings and in a range of contexts. The Task Force on Community Prevention Service evaluated 15 multi-component studies that demonstrated improved immunisation coverage. The median improvement in immunisation coverage was 16 per cent.
On what population does this intervention work best?	Children from low socio-economic status (SES) backgrounds.
Where will this intervention work best?	In non-medical-based settings.
What is required to implement this intervention?	An assessment of the barriers preventing timely immunisation within the target population and a selection of appropriate interventions (from those listed above) that include an education component. Multi-component interventions vary in cost and resources. These must be considered carefully when selecting an intervention.
Resources and contact information	See references
References	Ashkar SH, Dales LG, Averhoff F, et al. (2003). Foley ME, Kory P and Fairbrother G (1998) Hambidge S, Davidson A, Phibbs S, et al. (2004) Szilagyi P, Schaffer S, Shone L, et al. (2002)

Recommended strategy 3.2: Increased rates of immunisation

Name of intervention	Client reminder/recall systems
Organisation	No specific organisation
Brief literature review	Client reminder/recall systems are used to inform clients when immunisations are due (reminder) or overdue (recall), as well as when to contact their immunisation provider to determine whether immunisations are needed. Reminders differ in content and are delivered by a variety of methods including by telephone, an auto-dialer or mailed letters/ calendars/postcards. Client reminders can be either specific (certain immunisations are due on a specific date) or general.
How and why does this intervention work?	There is strong evidence that client reminder/recall systems improve immunisation coverage in a range of settings and populations (including those from low socio-economic backgrounds); when applied at different levels of scale from individual practice settings to entire communities; across a range of intervention characteristics and whether used alone or as part of a multi-component intervention. These systems have been shown to be effective in a variety of settings and have increased immunisation rates up to five per cent to 20 per cent.
On what population does this intervention work best?	Children from low socio-economic status (SES) backgrounds.
Where will this intervention work best?	In medical and non-medical-based settings.
What is required to implement this intervention?	Information infrastructure and administration.
Resources and contact information	See references
References	Alemi F, Alemagno S, Goldhagen J, et al. (1996) Irigoyen M, Findley S, Earle B, et al. (2000) Lieu T, Black S and Ray P (1997) Stehr-Green P, Dini E, Lindegren M, et al. (1993) Szilagyi P, Bordley C and Vann J (2000)

Recommended strategy 3.3: Increased rates of immunisation

Name of intervention	Home visiting and case management
Organisation	No specific organisation
Brief literature review	Home visits usually involve face-to-face services to clients in their home. Services can include education, assessment of need, referral, or providing vaccinations. Home visiting programs can also involve telephone or mail reminders. Some home visiting programs include a case management component.
How and why does this intervention work?	Rigorous evaluation trials have shown that home visiting programs, although relatively costly, are effective at increasing immunisation rates. Clients who received home visits have significantly higher completed immunisation rates than other clients. Benefits have been demonstrated in socio-economically disadvantaged populations.
On what population does this intervention work best?	Children from socio-economically disadvantaged and hard-to reach sub-populations (those in public housing or in rural areas).
Where will this intervention work best?	Based at non-medical settings, outreach service to the clients home.
What is required to implement this intervention?	Adequate number of staff members, transportation and administration resources.
Resources and contact information	See references
References	Bond L, Nolan T and Lester R (1998) Browngoehl K, Kennedy K, Krotki K, and Mainzer, H (1997) Task Force on Community Preventive Service (2000)

Recommended strategy 3.4: Increased rates of immunisation

Name of intervention	Immunisation programs in women, infants and children (WIC) in non-medical settings
Organisation	The US Department of Agriculture – Immunisation program
Brief literature review	Programs for women, infants and children (WIC) in non-medical settings have been shown to be effective in increasing immunisation rates. Immunisation programs in WIC settings involve efforts to encourage immunisation of clients from low socio-economic backgrounds in non-medical settings. At a minimum, immunisation-promoting strategies in WIC require assessment and referral. Other services can include education and incentives. The use of voucher incentive models in WIC settings result in increased immunisation rates. Since WIC programs involve several activities, they can also be classified as multi-component interventions.
How and why does this intervention work?	As part of the WIC program, parents are provided with a monthly food voucher. The parent must return a month later, have the child's immunisation record assessed and pick up another voucher. Children that are not up to date are escorted with the parent to a health clinic to be immunised. The voucher incentive would not be applicable to Australia as Australia does not have a welfare food voucher system. However, following this example, different vouchers could be offered such as movie passes or book store vouchers.
On what population does this intervention work best?	Children from socio-economically disadvantaged families.
Where will this intervention work best?	In non-medical-based settings.
What is required to implement this intervention?	Adequate number of staff members, transportation and administration resources.
Resources and contact information	Resources are available at URL: www.nal.usda.gov/wicworks Organisation contacts are available at URL: www.fns.usda.gov/wic/Contacts/fnsoffices.htm
References	Ashkar SH, Dales LG, Averhoff F, et al. (2003). Birkhead G, LeBaron C, Parsons P, et al. (1995) Flatt K, Watson JC, Anderson KN, Logan L and Nguyen VA (1996) Hutchins S, Rosenthal J, Eason P, et al. (1999) WIC Program – Immunisation Screening and Referral in WIC. Program details available at URL: www.fns.usda.gov/wic/benefitsandservices/immunization.htm , accessed on 8/10/06.

7. Maternal and child health services

7.1 Increased attendance at maternal and child health

7.1.1 Background

High-quality antenatal care is seen as a fundamental right of all women to safeguard their health and that of their infants (WHO, 1994). There is an extensive international evidence base addressing effective interventions to improve maternal and child health wellbeing (AIHW, 2002). However, interventions that have been successful in mainstream settings have not necessarily translated into improved health in Aboriginal and Torres Strait Islander populations (National Aboriginal and Torres Strait Islander Health Council, 2004).

In 2005, the Department of Health and Ageing conducted a literature review to collate reports of successful and effective health interventions in Aboriginal and Torres Strait Islander maternal and child health, and to provide evidence to contribute to the development of a maternal and child health policy within the office for Aboriginal and Torres Strait Islander Health. Much of this section is based on that report.

7.1.2 The evidence base

Unlike other indicators, no single interventions were identified to increase attendances at maternal and child health services (MCH), particularly in Aboriginal communities. Instead, four programs were identified that offered a holistic approach to antenatal care, with a variety of services. All four programs have been evaluated and results show very positive increases in attendance rates.

There is a strong link between immunisation, breastfeeding and MCH programs. Several MCH programs also include immunisation programs. It is clear that strategies selected to increase attendances and access to MCH services could possibly increase immunisation coverage (Sloman, 1999) and breastfeeding rates. An example is the statistically significant improvements in the timeliness and administration of immunisations and a consistent trend of improvement in increased coverage (Sloman, 1999).

7.1.3 Selection of recommended interventions

The Nganampa Health Council (NHC) is a community-controlled health organisation providing services to Aboriginal communities living in northwest South Australia in the Anangu Pitjantjatjara lands. In the mid 1980s a strategy was developed to improve antenatal care for women in the region. The program was based on standard protocols and care management for antenatal care, birthing, and child health care.

The program uses a holistic approach to service provision and its components include an antenatal care program and health education to young mothers. The child health section includes immunisation, nutrition education, growth monitoring for under fives and targeted health screening at ages five, 10 and 14. Growth plans are developed with parents/carer and include menus that are simple to prepare with food that is accessible within the community.

An independent evaluation conducted by Sloman et al. (1999) involved a retrospective analysis of medical records of 705 births for 374 Aboriginal women covering the period 1984 to 1996. The study identified a nine per cent reduction in low birth weight (14 per cent to eight per cent), 90 per cent immunisation coverage and 84 per cent of pregnant women have at least five antenatal visits. There were also improvements in nutrition status and no children with wasting and reduced perinatal mortality were identified (Sloman et al., 1999). The program also resulted in an increase in attendances from almost no pregnant women to 60 per cent of women presenting at the service during their first trimester (Department of Health and Ageing, 2005a; 2005b).

The Townsville Aboriginal and Islanders Health Service (TAIHS) runs the Mums and Babies Program. The program offers a comprehensive integrated primary health care for young families. The accompanied services include antenatal and postnatal care, immunisation and child health monitoring, transportation assistance, childcare/playgroup on site, STD testing, referral, advocacy and social support. In addition to these services, the program also offers brief interventions for risk factors such as smoking cessation, nutrition, breastfeeding and sudden infant death syndrome (Department of Health and Ageing, 2005a; 2005b).

The program was evaluated by Panaretto et al. (2005) using data from 456 Aboriginal women compared to a historical control group of 540 women. The program resulted in increased service usage, increased antenatal attendance and care, increased mean birth weight by 200g, reduction in preterm births from 17 per cent in 1998 to nine per cent in 2000 (Panaretto et al., 2005).

It is possible to increase Aboriginal attendances at antenatal care services and improve care within this population. According to Atkinson (2001), the key elements to success are community commitment and ownership, open communication and forming strategic partnerships.

The Strong Women, Strong Babies, Strong Culture Program was established in the Northern Territory in 1992. The program is aimed at increasing infant birth weights by earlier attendances to antenatal clinical and improved maternal weight status. Aboriginal women in three pilot communities work with pregnant women in a program that emphasises western medicine and traditional practices. Intervention services include: community-based maternal education and support by respected community women, advice on nutrition, reduced smoking and alcohol use, early antenatal care, testing and treatment for STDs, advice on seeking medical care and adhering to prescribed medication (Department of Health and Ageing, 2005a).

An evaluation conducted by d'Espaignet et al. (2003) identified significant increases in mean birth weight, reduction in low birth weight (LBW), from 15 per cent to 11 per cent in original intervention group, and an increase in antenatal clinic attendances (Mackerras, 1998). Women participated at antenatal care at an earlier stage of gestation. This outcome was more pronounced among young mothers, women having their first baby and older multiparous women (Gross et al., 1998).

Congress Alukura is another successful Aboriginal women's health and birthing service located in Alice Springs, Northern Territory. Services are run through a midwife-led maternity service and women's health clinic. The program was developed in 1984 through a process of community consultation and was guided by the Grandmother's Law (Gross et al., 1998). Interventions and services provided include antenatal and postnatal care, gynaecological services, adult and youth health education, transportation, health worker training, bush mobile clinic, visiting specialists, home visiting and hospital/specialist liaison. The program also provides a comprehensive breastfeeding and nutrition intervention. Another unique feature of the program is the availability of a culturally-appropriate women's only space that has been used to identify other undiagnosed health problems. These components have provided a holistic approach to antenatal care (Department of Health and Ageing, 2005b).

An evaluation conducted by Carter et al. (2003) identified an increase in antenatal clinic visits increased by 42 per cent (2,130 in 1995-96 to 3,016 in 1997-98) and an increase of 100g in mean birth weights of babies born to urban Aboriginal mothers. In addition, the proportion of women having a first trimester antenatal visit increased from 23 per cent (1986-88) to 33 per cent (1993-95).

7.1.4 Discussion

The above successful community-based Aboriginal maternal and child health programs are multi-component services and provide immunisation services as part of their program. There is a strong link between increased attendance or access to maternal and child health services and increased immunisation rates (Sloman, 1999).

Impeding factors that have been noted by some of the Aboriginal antenatal care programs include the lack of participation by fathers who have other priorities and prefer not to be involved. Certain programs such as the Nganampa Health Council antenatal program found difficulties in trying to bridge the three States and Territories covered by the lands, since the welfare regulations are different and families are mobile (Gross et al., 1998). Atkinson (2001) identified the lack of culturally appropriate services as a key barrier to the increase in antenatal care attendances by Aboriginal mothers. For programs to be successful, such barriers to success need to be assessed and addressed.

Despite the barriers, the above programs reflect established community-based programs that have successfully increased attendances to maternal and child health services. Overall factors contributing to success include community empowerment, an emphasis on family support, formulation of partnerships, sufficient funding and programs being initially confined to a small number of communities (Gross et al., 1998; Fejo et al., 1996; Atkinson, 2001).

7.1.5 References

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Table 7: Increased attendances at maternal and child health services – recommended strategies

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(5.1) Comprehensive holistic approach	2	N	Y	Y	LOW SES INDIGENOUS
(5.2) Comprehensive holistic approach	2	N	Y	Y	LOW SES INDIGENOUS
(5.3) Strong Women, Strong Babies, Strong Culture program	2	N	Y	Y	LOW SES INDIGENOUS
(5.4) Comprehensive holistic approach	2	N	Y	Y	LOW SES INDIGENOUS

Key

Supporting evidence:

1. Well-supported practice – evaluated with a prospective randomised controlled trial.
2. Supported practice – evaluated with a comparison group and reported in a peer-reviewed publication.
3. Promising practice – evaluated with a comparison group.
4. Acceptable practice – evaluated with an independent assessment of outcomes, but no comparison group (such as pre and post-testing, post-testing only or qualitative methods) or historical comparison group (such as normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (such as formative evaluation, service evaluation conducted by host organisation).

Replication:

Has the intervention been implemented and independently evaluated at more than one site? (yes or no)

Documentation:

Are the content and methods of the intervention well documented (such as provider training courses and user manuals) and standardised to control quality of service delivery? (yes or no)

Theoretical basis:

Is the intervention based upon a well-accepted theory or developed from a continuing body of work in its field? (yes or no)

Cultural reach:

Has the program been trialed with people in disadvantaged communities, Indigenous people or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

Recommended strategy 5.1: Increased attendance at maternal and child health

Name of intervention	Comprehensive holistic approach involving several strategies (1)
Organisation	The Nganampa Health Council (NHC) program
Brief literature review	<p>It is a community controlled health organisation providing services to Aboriginal communities living in northwest South Australia in the Anangu Pitjantjatjara lands. In the mid 1980s, a strategy was developed to improve MCH care for women in the region. The program was based on standard protocols and care management for antenatal care, birthing, and child health care.</p> <p>The program uses a holistic approach to service provision and its components include an antenatal care program, health education to young mothers, and child health. The child health section includes immunisation, nutrition education, growth monitoring for under fives and targeted health screening at ages five, 10 and 14. Growth plans are developed with parents/carers and include menus that are simple to prepare with food that is accessible within the community.</p>
How and why does this intervention work?	The program has resulted in a nine per cent reduction in low birth weight (14 per cent to eight per cent) and 90 per cent immunisation coverage. There were also improvements in perinatal mortality and nutrition status, and no children with wasting were identified (Sloman et al., 1999). The program also resulted in an increase in attendances from almost no pregnant women to 60 per cent of women presenting at the service during their first trimester and 84 per cent of women having at least five antenatal visits during their pregnancy (Department of Health and Ageing, 2005a; 2005b; Sloman et al., 1999).
On what population does this intervention work best?	Children from low socio-economic status (SES) backgrounds and ATSI populations.
Where will this intervention work best?	In a community-based setting.
What is required to implement this intervention?	Community consultation and ownership of the program. Training of Aboriginal midwives to learn about western health care and practices, and educating western health professionals about effective interaction with Indigenous communities.
Resources and contact information	<p>Alice Springs Office of the Nganampa Health Council 3 Wilkinson Street, PO Box 2232, Alice Springs, NT 0871 Phone: 08 8952 5300 Fax: 08 8952 2299 Director: John W Singer www.nganampahealth.com.au/contacts.php</p>
References	<p>Sloman D, Shelley J, Watson L, and Lumley, J (1999) Department of Health and Ageing (2005a) Department of Health and Ageing (2005b)</p>

Recommended strategy 5.2: Increased attendance at maternal and child health

Name of intervention	Mums and Babies program
Organisation	Townsville Aboriginal and Islanders Health Service (TAIHS)
Brief literature review	In February 2000, TAIHS commenced this new maternal and child health program. A dedicated team of two health workers, one childcare worker, a driver and two female doctors was set up. The team holds a clinic every morning for young families and pregnant women. The aim of the program is to offer a comprehensive integrated primary health care for young families including antenatal and postnatal care, immunisation and child health monitoring, transportation assistance, childcare/playgroup on site, STD testing, referral, advocacy and social support. In addition to these services, the program also offers brief interventions for risk factors such as smoking cessation, nutrition, breastfeeding and sudden infant death syndrome.
How and why does this intervention work?	The program outcomes were increased antenatal attendance and care (Department of Health and Ageing, 2005a), service usage, increased mean birth weight by 200g, and reduction in preterm births from 17 per cent in 1998 to nine per cent in 2000 (Paneretto et al., 2005).
On what population does this intervention work best?	Children from low socio-economic status (SES) backgrounds and ATSI populations.
Where will this intervention work best?	In a community-based setting.
What is required to implement this intervention?	Community consultation, commitment and ownership, open communication and the formation of strategic partnerships.
Resources and contact information	Practice Manager: Nigel Forster Practice Principal: Board Run/CEO/Rachael Atkinson Phone: 07 4759 4000 Fax: 07 4759 4055 [4759 4066 for medical information] E-mail: nforster@taihs.net.au Address: Cnr. Gordon and Meenan Sts, PO Box 7534, Garbutt QLD 4814
References	Atkinson R (2001) Paneretto K, Lee H, Mitchell M, Larkins S, Manassis V, Buettner P and Watson D (2005) Townsville Aboriginal and Islander Health Services Limited (2002)

Recommended strategy 5.3: Increased attendance at maternal and child health

Name of intervention	The Strong Women, Strong Babies, Strong Culture Program
Organisation	Comprehensive holistic approach involving several strategies
Brief literature review	The program was established in the Northern Territory in 1992. Aboriginal women in three pilot communities work with pregnant women in a program that emphasises western medicine and traditional practices. Intervention services include community-based maternal education and support by respected community women; advice on nutrition; reduced smoking and alcohol use; early antenatal care; testing and treatment for sexually-transmitted diseases; advice on seeking medical care and adhering to prescribed medication (Department of Health and Ageing, 2005a).
How and why does this intervention work?	The program has been shown to increase mean birth weight, reduction in low birth weight (LBW), from 15 per cent to 11 per cent in original intervention group, and an increase in antenatal clinic attendances (Mackerras, 1998). Gross et al.(1998) documented the participation of women at antenatal care during early stages of gestation.
On what population does this intervention work best?	Children from low socio-economic status (SES) backgrounds and ATSI populations.
Where will this intervention work best?	In a community-based setting.
What is required to implement this intervention?	Community empowerment and project ownership. The project addressed an area of concern for many local Aboriginal women. Factors that contributed to its success included the formation of partnerships and the fact that the project was initially confined to a small number of communities.
Resources and contact information	See references
References	Department of Health and Ageing (2005a) Groos A, Engeler T, Miller M and McDonald M (1998) Mackerras D (1998) St John of God (2006)

Recommended strategy 5.4: Increased attendance at maternal and child health

Name of intervention	Comprehensive holistic approach involving several strategies (3)
Organisation	Congress Alukura Aboriginal women's health and birthing service
Brief literature review	<p>Services are run through a midwife-led maternity service and women's health clinic. The program was developed in 1984 through a process of community consultation and was guided by the Grandmother's Law (Gross et al., 1998), and officially opened in 1994.</p> <p>Interventions and services provided include antenatal and postnatal care, gynaecological services, adult and youth health education, transportation, health worker training, bush mobile clinic, visiting specialists, home visiting and hospital/specialist liaison. The program also provides a comprehensive breastfeeding and nutrition intervention. Another unique feature of the program is the availability of a culturally-appropriate women's-only space that has been used to identify other undiagnosed health problems. These components have provided a holistic approach to MCH care (Department of Health and Ageing, 2005b).</p> <p>Congress Alukura has been recognised as a centre for excellence, both nationally and internationally. In 1993, it received the 'Excellence in Public Health Practice Award' from the Public Health Association of Australia. In 1994, it won the National Human Rights Award.</p>
How and why does this intervention work?	Outcomes include an increase in antenatal clinic visits by 42 per cent (2,130 in 1995-96 to 3,016 in 1997-98) and an increase of 100g in mean birth weights of babies born to urban Aboriginal mothers. In addition, the proportion of women having a first trimester antenatal visit increased from 23 per cent (1986-88) to 33 per cent (1993-95).
On what population does this intervention work best?	Children from low socio-economic status (SES) backgrounds and ATSI populations.
Where will this intervention work best?	In a community-based setting.
What is required to implement this intervention?	A detailed understanding of the 'Grandmother's Law' and its application to maternal and child health.
Resources and contact information	<p>Location: 25 Gap Road, Alice Springs NT 0870</p> <p>Postal address: PO Box 1604 Alice Springs NT 0871</p> <p>Admin phone: 08 8951 4400</p> <p>Admin fax: 08 8953 0350</p> <p>www.caac.org.au/contact/contact.php</p>
References	<p>Carter B and Hussen E (1987)</p> <p>Carter E, Lumley J, Wilson G and Bell S (2004)</p>

8. Sun protection

8.1 Increased rate of children who are protected from summer sun

8.1.1 Background

Exposure to sunlight is the main cause of melanoma and an important cause of basal cell carcinoma and squamous cell carcinoma, all of which are forms of skin cancer. Australia has the world's highest incidence of melanoma which has a high mortality rate with survival closely linked to early detection and treatment. The other two forms of skin cancer are relatively common but the mortality is low. The impact of sunlight exposure on disease is complex, with both harmful and beneficial effects, and the relationship between the two is still the subject of debate. There is recognition of the need to shift skin cancer prevention messages to a more balanced position than has been the case in the past, with protection from the sun not necessary at all times (Sinclair, 2006). However, what is clear is that exposure to sunlight in childhood is a key determinant of skin cancer risk in adulthood (Whiteman, Whiteman, and Green, 2001; Armstrong, 2004). Intermittent unaccustomed exposure to sunlight is particularly harmful and increases the risk of skin cancer, particularly for melanoma (Elwood and Jopson, 1997). The risk of exposure to sunlight is far greater during the middle of the day, particularly in summer, although the magnitude of this risk will vary significantly depending on latitude.

8.1.2 The evidence base

Strategies to increase sun protection and prevent skin cancer have focused on avoiding sunlight, 'covering up' with clothing and use of sunscreen. Work by the National Health and Medical Research Council (NHMRC) and the Scottish Intercollegiate Guidelines Network (SIGN) resulted in essentially the same set of recommendations:

- use clothing as the primary means of protecting against exposure to sunlight (because this strategy has the highest level of evidence to support it). People with a fair complexion should be especially careful.
- avoid direct exposure to sunlight in the middle of the day
- use a broad-spectrum sunscreen with a minimum sun protective factor (SPF) of 15 as an adjunct to sun avoidance and other protective measure
- use sun protective structures (such as shade structure) whenever possible during daylight hours (NHMRC, 1999; SIGN, 2004).

No evidence was identified in the literature to contradict the recommendations regarding sun avoidance and use of sun protective clothing but the effectiveness of sunscreens is more problematic. There is some evidence that sunscreens can prevent squamous cell carcinoma but not basal cell carcinoma (Gallagher, Lee and Bajdik, 2004) and there is no clear evidence that sunscreens can prevent melanoma (Bastuji-Garin and Diepgen, 2002; Gefeller and Pfahlberg, 2002; Dennis, Beane Freeman and VanBeek, 2003). This is worrying given the reliance that can be placed on use of sunscreens rather than other sun protection strategies (Severi et al., 2002). This is tempered by the knowledge that sunscreen composition is continually evolving and it may be a long time before any protective effect of current formulations is detected (Dennis, Beane Freeman and VanBeek, 2003).

In 2003 the USA Task Force on Community Preventive Services on Reducing Exposure to Ultraviolet Light published the results of a systematic review of interventions to reduce exposure to sunlight. The Task Force reviewed studies published in the English language literature between 1966 and 2000. A total of 6,373 potentially relevant titles were identified, 313 reports were retrieved and 159 were fully reviewed. Two studies on interventions in child care centres and 20 studies on interventions in primary schools met the inclusion criteria for the systematic review.

The Task Force found evidence to support interventions in primary schools to improve children's covering up behaviour (such as wearing sun protective clothing) using a variety of approaches – didactic teaching, interactive classes, home-based activities, interactive CD-ROM multimedia programs, peer education and changes in policy – but insufficient evidence to determine the effectiveness of interventions to improve other sun-protective behaviour such as sun avoidance. They found insufficient evidence to determine the effectiveness of interventions to reduce exposure to sunlight in settings other than schools – child care centres, recreational settings or tourist settings – due to a combination of the limited number of studies and inconsistent results (Saraiya et al., 2003). It is important to note that this conclusion does mean that the interventions that were included in this review do not work, simply that there is insufficient evidence.

One of the interventions included in the Task Force review was the Cool Pool program developed, implemented and evaluated (with use of a randomised controlled trial) in Hawaii and Massachusetts in the USA. The findings indicated positive effects on children's use of sun-protective behaviours, parents' hat use and sun-protection habits, and sun safety environments at swimming pools (Glanz et al., 2002). The program is now the subject of an extensive study in swimming pools across the USA (Glanz et al., 2005).

Also not included in the Task Force review was a large study across 40 schools in the USA that found improvements in knowledge and some changes in intentions for sun protection achieved by a brief, standardised, sun protection program integrated in the school curriculum (Geller, Cantor et al. 2002). A recent study has reported on the evaluation of the Sun Protection is Fun program designed to improve the practices of parents in protecting preschool-age children from sun exposure (Gritz et al., 2005).

The findings of the Task Force regarding interventions in primary schools are consistent with the Australian Kidskin project that found a positive effect on hat wearing by children in the playground but no change in use of shade at lunchtime (Giles-Corti et al., 2004). More recent findings regarding the Kidskin program indicate that the beneficial effects may require ongoing maintenance of the program (Milne et al., 2006). There is evidence that health promotion initiatives in schools (not just for skin cancer prevention) can have a positive impact on children's health and behaviour, although not consistently, with increases in knowledge easier to achieve than changes in attitudes and behaviour (Contributors to the Cochrane Collaboration and the Campbell Collaboration, 2000). Several presentations over a period of time achieve better results than other forms of instruction and there is a need to supplement school-based programs with programs targeting the general community (Buller and Borland, 1999).

Not surprisingly, the sun protection practices of children are linked to the attitudes and behaviour of their parents. Parents who get sunburnt are more likely to have sunburnt children and parents with a high level of sun protection behaviour are more likely to have children with similar behaviour (O'Riordan et al., 2003). Recent evidence suggests that use of hats, shirts and shade declines substantially as children move from the first to the second year of life, with increasing reliance on sunscreen use as the main sun-protection strategy (Benjes et al., 2004). Unfortunately, there is insufficient evidence regarding the effectiveness of interventions to improve children's sun-protective behaviour by targeting parents or caregivers due, in part, to the small number of rigorous studies available (Saraiya et al., 2003). Counselling parents may increase sunscreen use for children but there is little evidence of the effect of counselling on other protective behaviours (US Preventive Services Task Force, 2004).

Only one intervention targeting mothers of newborn babies was identified in the literature. This consisted of a nurse-led program with education and personal discussion. Follow-up after one year indicated that the mothers were receptive to the education and that the immediate post-natal period was considered appropriate for such education, but in the absence of a control group these results are of limited value (Geller, Sayers et al., 1999).

Behaviour theory suggests it is easier to learn sun-safe habits early in life than reverse harmful habits later in life (Hill and Dixon, 1999). However, the difficulty of attaining effective sun protection in young children that will form the basis of good life-long habits can be gauged from the experience in Australia where many years of educating young children about sun protection has still resulted in a situation where the practices among their adolescent peers are sub-optimal and, for some practices, are getting worse (Livingston, White, Hayman and Dobbins, 2003). Teenage behaviour with regard to sun protection is particularly difficult to change (Melia et al., 2000).

8.1.3 Selection of recommended interventions

The key strategies are to develop the capacity of providers to deliver evidence-based sun-protection messages and facilitate the development and implementation of sun protection policies and environments. Schools provide a convenient captive audience for this work and a coordinated approach is recommended, including appropriate policies, changes to the school environment, education of students, involvement of families, professional development of school staff and school nurses, school health services and evaluation (Glanz, Saraiya and Wechsler, 2002). The opportunity also exists to influence attitudes and behaviour in other settings, including child care centres. Although the evidence to support such work is lacking it is reasonable to model the approach on what works in schools until clearer guidance emerges from ongoing research.

It is sensible to promote a systematic and structural approach to sun protection, including how the typical school day is organised. Examples of what might be done include re-scheduling sport and physical education classes for the first period of the school day, holding sporting events in the evening or changing the length of the various 'break periods' in school timetables so that the longest break is not in the middle of the day (Giles-Corti et al., 2004). Evidence from Victorian schools is that scheduling of outdoor activities to avoid periods of peak solar ultraviolet radiation needs improvement (Dobbinson, Peipers et al., 2000).

Other strategies that might be employed depending on the local situation include increasing the amount of shade at a school or child care centre (albeit an option that is likely to be expensive), implementing 'no hat – no play' policies and allowing young children to eat their lunch inside school buildings rather than requiring them to eat outside. There is a need to be alert to potential obstacles to sun-safe practices (such as rules that prohibit the wearing of sunglasses or hats to school and limit the use of sunscreen by categorising it as a medicine).

Another aspect of skin cancer prevention is the extent to which messages to avoid the sun and 'cover up' may conflict with other health promotion initiatives targeting children such as the need to be physically active. Intuitively it would seem reasonable to develop a balanced approach that encouraged physical activity while at the same time promoting appropriate sun-protection strategies but the available literature is silent about the trade-off between the two and how best it should be managed. The appropriate policy position is that at the very least sun-protection initiatives should not result in less physical activity for young children. Some recent work in Sweden indicates that providing a preschool environment for children that is spacious, with trees, shrubbery and broken ground, can trigger physical activity and provide protection from the sun (Boldemann et al., 2006).

Community-wide programs to disseminate sun-protection messages to the whole population provide the most cost-effective method of achieving change, relying on multiple interventions that complement each other, with different strategies likely to be required depending on local geography and demography (Buller and Borland, 1999).

Three economic evaluations of skin cancer prevention were identified in the literature. There was a common author to all three and all were based on the same premise – economic evaluation of a national skin cancer prevention program based on the Victorian SunSmart program. The major benefit identified by the analysis was reduced mortality due to melanoma. It was concluded that from a government perspective such a program would be highly cost-effective. However, when the costs incurred by individuals are included the cost per life year saved increases dramatically, because of the 'prevention paradox' whereby many people have to change their behaviour (at no benefit for themselves) in order to save one life. This suggests that careful attention needs to be given to the cost implications for individuals of skin cancer prevention programs (Carter, 2004).

The Victorian SunSmart program covers local governments, primary and secondary schools, early childhood services, workplaces and sporting groups. A SunSmart accreditation program for schools has been in place since 1994. The accreditation program has not been evaluated but there seems no good reason to change the program. Recently published work indicates that there is room to improve the role of local government, primarily through greater recognition of the importance of shade and sun-protection (Dobbinson et al., 2006). The fundamentals of a sun protection program (SunSmart) for children are already in place. The recommended strategies are therefore limited to interventions that have some potential in those areas where less work may have been done in the past – newborn babies and their mothers, swimming pools and preschools.

8.1.4 Discussion

What emerges from the literature is the need for a consistent approach to sun protection with interventions targeting individuals linked to broader community-based approaches. The focus should be on the hierarchy of sun protection measures – avoid sunlight in the middle of the day, wear appropriate clothing and use sunscreen as an adjunct to the first two strategies. Those working with preschool children need to be vigilant about emphasising sun avoidance and covering up, rather than reliance on sunscreens.

Much of the research on skin cancer prevention in children has focused on determining the effectiveness of education programs delivered in schools. Schools provide an appropriate setting for delivering messages about sun protection and measuring changes in knowledge and behaviour are a convenient way of assessing the impact of such work.

There is a general acceptance in the literature that there is more to be gained from reducing risk for the whole population, rather than targeting those with high exposure to risk factors or an increased likelihood of developing skin cancer. There are numerous references in the literature to the Victorian SunSmart program. It is acknowledged as the most comprehensive population-based primary prevention program for skin cancer anywhere in the world. The program does not focus on children but no evidence was found to support its replacement with a program in existence elsewhere. The messages used by the program are consistent with the evidence from the literature.

8.1.5 References

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Table 8: Increased rate of children who are protected from summer sun – recommended strategies

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(6.1) Cool Pool Program	1	Y	N	Y	Universal
(6.2) New Moms Program	4			Y	Universal
(6.3) Trees, shrubbery and broken ground	5		Y	Y	Universal
(6.4) SunSmart	2	Y	Y	Y	Universal

Key

Supporting evidence:

1. Well-supported practice – evaluated with a prospective randomised controlled trial.
2. Supported practice – evaluated with a comparison group and reported in a peer-reviewed publication.
3. Promising practice – evaluated with a comparison group.
4. Acceptable practice – evaluated with an independent assessment of outcomes, but no comparison group (such as pre and post-testing, post-testing only or qualitative methods) or historical comparison group (such as normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (such as formative evaluation, service evaluation conducted by host organisation).

Replication:

Has the intervention been implemented and independently evaluated at more than one site? (yes or no)

Documentation:

Are the content and methods of the intervention well documented (such as provider training courses and user manuals) and standardised to control quality of service delivery? (yes or no)

Theoretical basis:

Is the intervention based upon a well-accepted theory or developed from a continuing body of work in its field? (yes or no)

Cultural reach:

Has the program been trialed with people in disadvantaged communities, Indigenous people or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

Recommended strategy 6.1: Increased rate of children who are protected from summer sun

Name of intervention	Cool Pool program
Organisation	USA National Cancer Institute
Brief literature review	The intervention included staff training; sun-safety lessons; interactive activities; providing sunscreen, shade and signage; and promoting sun-safe environments. The four Pool Cool rules are: cover up, protect face and eyes, seek shade and limit exposure, use sunscreen. The intervention is the subject of ongoing work in swimming pools across the USA.
How and why does this intervention work?	The intervention uses a combination of educational and environmental strategies and was tested in a large number of swimming pools in diverse populations and geographic locations.
On what population does this intervention work best?	Children attending swimming lessons at 28 participating swimming pools in Hawaii and Massachusetts, in the USA.
Where will this intervention work best?	Swimming pools.
What is required to implement this intervention?	Educating experienced aquatic/recreation professionals who complete a training program on skin cancer prevention and the Pool Cool program. Providing shade, appropriate signage and sunscreen.
Resources and contact information	Karen Glantz, Department of Behavioral Sciences and Health Education, Emory University, Atlanta, USA email: kglanz@sph.emory.edu
References	Glanz K. et al. (2002) Glanz K, et al. (2005)

Recommended strategy 6.2: Increased rate of children who are protected from summer sun

Name of intervention	New Moms program
Organisation	Maternity unit in Falmouth, Massachusetts, USA
Brief literature review	The intervention involves use of educational materials and personal discussions with new mothers prior to hospital discharge after the birth of their baby.
How and why does this intervention work?	One year later 90 per cent of respondents recalled the program and indicated that receiving information while in hospital was timely. One of the findings of this study was the high number of mothers (almost two-thirds of respondents) who stated that the information from this program was the only information they received from any provider in the previous year. This may not be the case in Victoria, with a well-established sun protection campaign – SunSmart. Hence the impact of the New Moms program may be less than in the USA, but the paucity of evidence about providing sun-protection messages to the mothers of newborn babies makes it worth considering.
On what population does this intervention work best?	Mothers of newborn babies.
Where will this intervention work best?	Hospital maternity units.
What is required to implement this intervention?	Educating nursing staff.
Resources and contact information	Alan Geller, Boston University School of Medicine, Boston, USA. Email ageller@bu.edu .
References	Geller A, Sayers L, Koh HK, et al. (1999)

Recommended strategy 6.3: Increased rate of children who are protected from summer sun

Name of intervention	Provision of trees, shrubbery and broken ground
Organisation	Centre for Public Health, Stockholm County Council, Stockholm, Sweden.
Brief literature review	Studies of interventions to improve sun protection have focused on education programs, either for children or their care-givers, in part because research of this kind is easier than studying environmental interventions. There is an uncertain ‘trade-off’ between sun-protection messages and the need for children to be physically active. The research reported here, although not an evaluation of an intervention, does indicate that providing spacious preschool environments with trees, shrubbery and broken ground can trigger physical activity and result in sun protection of children playing outside.
How and why does this intervention work?	The study used pedometry and measurement of ultraviolet radiation on children in 11 preschools and compared the results with the environment in each of the preschools.
On what population does this intervention work best?	Preschool children, although there is no reason to believe that the same principles would not apply to all school children.
Where will this intervention work best?	Preschools.
What is required to implement this intervention?	Providing adequate space, shade and broken ground in preschool environments.
Resources and contact information	The SunSmart program has resources (the Shade in Public Places Checklist and a practical guide to shade development) that would assist with this intervention. SunSmart website at www.sunsmart.com.au Published paper (see below). Cecilia Boldemann, Centre for Public Health, Stockholm County Council, Stockholm, Sweden, email Cecilia.boldemann@sll.se
References	Boldemann C et al. (2006)

Recommended strategy 6.4: Increased rate of children who are protected from summer sun

Name of intervention	SunSmart
Organisation	The Cancer Council Victoria
Brief literature review	The SunSmart program began in 1988 and was supplemented by a SunSmart accreditation program in 1994. The program is identified in the literature as the most comprehensive population-based primary prevention program for skin cancer.
How and why does this intervention work?	<p>The SunSmart message about sun protection is based on the best available evidence – ‘cover up’ using clothing and hats, avoid the sun using shade and use sunscreens.</p> <p>Interventions occur at the level of individuals such as education programs; providers such as development of appropriate policies, accreditation program for schools; and the whole population such as mass media campaigns.</p> <p>The SunSmart program works with local governments, schools, early childhood services, workplaces and sporting groups to develop and implement sun protection policies and practices.</p>
On what population does this intervention work best?	SunSmart is a population-based approach to sun protection. This has included, for example, working with manufacturers to design sun protective clothing.
Where will this intervention work best?	The intervention can be applied in a range of settings, including schools and early childhood centres.
What is required to implement this intervention?	The main requirement is commitment to implement the SunSmart program. Examples of this are a commitment by parents and teachers to implement a SunSmart policy in schools to a commitment by local government to spend money on improving shade in public places.
Resources and contact information	<p>There are a variety of resources available on the SunSmart website: www.sunsmart.com.au</p> <p>Postal address: 1 Rathdowne Street, Carlton, VIC 3053</p> <p>Phone: 03 9635 5000</p>
References	<p>Dobbinson S, et al. (2000) <i>Are Victorian Primary Schools SunSmart? The ongoing development of the SunSmart Schools Program</i>. Health Promotion Journal of Australia, Vol. 10, No. 1, pp 43-50.</p> <p>Montague M, Borland R and Sinclair, C (2001) <i>Slip! Slop! Slap! and SunSmart, 1980-2000: skin cancer control and 20 years of population-based campaigning</i>. Health Education and Behavior. Vol. 28, No. 3, pp 290-305.</p>

9. Physical activity

9.1 Increased rate of children who participate in physical activity

9.1.1 Background

The Longitudinal Study of Australian Children, an initiative of the Australian Department of Family and Community Services, showed that a significant proportion of young Australian children under five years are not engaging in physical activity (AIFS, 2005). A very high proportion of Australian preschool children (89 per cent) watched television, DVDs or videos for more than two hours per day, while only two-thirds spent time running, walking or doing other exercise (average 1.9 hours).

Low physical activity is likely to have a long-term health impact as a result of reduced levels of fitness and has been shown to affect cardiovascular risk factors such as elevated blood pressure and impaired glucose response in children as young as 12 years (Baranowski et al., 1992). Studies have shown that physical inactivity is a major factor in the development of overweight and obesity (Batch and Baur, 2005) and an independent risk factor for coronary heart disease and diabetes (Stone et al. 1998). Both cross-sectional and longitudinal studies have shown a significant association between the amount of television viewing and overweight and obesity (Robinson, 2001).

There is also evidence that physical activity or inactivity tends to ‘track’ during childhood, so that less-active children remain less active than their peers (Pate et al., 1996). In a prospective study that followed preschool children into adolescence, Moore et al. (1995) found that preschool children with low activity levels gained more sub-cutaneous fat than children who were more active, and that physical activity and sedentary behaviours track into adolescence. Physical activity behaviours in childhood may also track into adulthood (Kelder et al., 1993) though the relationship is less strong.

Promoting physical activity and reducing sedentary activity at early ages is therefore important for improving children’s fitness and reducing the prevalence of overweight and obesity in Australian children. It is especially important that there is a strong evidence base for strategies to promote physical activity among young children, and that the settings in which these strategies can be delivered are clearly identified (Timperio, Salmon and Ball, 2004).

9.1.2 The evidence base

A wide variety of programs were reviewed for this project. The review showed that interventions aimed at increasing physical activity in children have focused on two approaches: increasing the amount and intensity of physical activity and decreasing sedentary activities (such as watching television and playing video games) with the aim of substituting opportunities for more active leisure in their place. In many of the studies, increased physical activity or reduced sedentary activity was a secondary or intervening outcome variable, with the primary outcome being changes in body weight, measures of subcutaneous fatness or body mass index (BMI).

Interventions can be further grouped according to settings, including school-based approaches, community approaches, and family-based interventions. The latter have included clinically-based intensive interventions for high-risk overweight and obese children that have focused on family environment and parenting skills, as well as reducing sedentary activities or increasing physical activity (Epstein et al., 2000; Harvey-Berino and Rourke, 2003).

Many interventions have been multi-factorial, for example, combining school and family-based interventions, and targeted at increasing physical activity or reducing sedentary activities. Some programs also have targeted dietary changes, such as children’s healthy eating or changes to the school canteen or meals program.

9.1.3 Selection of recommended interventions

The interventions recommended here are all located in school or preschool-based settings and delivered by teachers within the curriculum. However, other potentially promising interventions that aim to increase physical activity or reduce sedentary activities are also mentioned.

There was general agreement among the large-scale reviews of programs aimed at increasing physical activity that the evidence-base for successful intervention was overwhelmingly strongest in the school-based setting. School-based settings have an advantage over other settings in that schools provide the opportunity for broad-ranging approaches

that can be integrated with each other and into the general curriculum. Schools also reach almost the whole child population. In addition, the school setting provides the opportunity to deliver multifaceted programs that can focus on the individual child as well as the environment in which children work and play, and provide children the opportunity for modelling against their peers and their teachers (Dietz and Gortmaker, 2001; Flynn et al., 2006). Two school-based programs, SPARK and CATCH, are recommended in the Best Start catalogue.

The school-based intervention program, Sports Play and Active Recreation for Kids (SPARK), was designed to promote moderate to vigorous levels of physical activity, teach movement skills, and be enjoyable. SPARK physical education (PE) classes run three days per week and are of 30 minutes duration, equally divided between health-fitness and skill fitness activities. Health-related activity units include dance, games, walking/jogging and jumping rope, with intensity, duration and complexity progressively increasing over time. Motivation is enhanced by students' monthly self-assessment and recording of fitness levels. The program includes a self-management program (30 minutes per week) linked to the curriculum that teaches behaviour change skills to promote physical activity outside school. Skills include self-monitoring, goal setting, stimulus control, self-reinforcement, self-instruction and problem solving. Initially prizes are given but phased out over time to encourage self-reward.

SPARK also includes a family-oriented approach. Homework and newsletters aim to stimulate parent-child interaction and support for physical activity.

The SPARK intervention was initially trialed amongst 955 grade four and five children in seven primary (elementary) schools in San Diego, with mostly European-American children. At the end of the trial, intervention students were more physically active during PE classes and showed increased fitness (Sallis et al., 1997, 1999; McKenzie et al., 1997; Dowda et al., 2005). At the 18 month follow-up, the trained classroom teachers continued to use the curriculum and maintained increased student physical activity levels. Further follow-up of diffusion outcomes showed that 80 per cent of respondents sustained use up to four years later, and equal levels of implementation were found in affluent and disadvantaged schools. SPARK subsequently was disseminated nationally in the US with training in more than 3,000 schools. In addition, the program was extended to include kindergarten to sixth grade PE (Owen et al., 2006). The SPARK program has potential for usefulness among preschool children, since it is being used already among children in their first year of school. It is noteworthy that SPARK students showed the same or increased academic test scores compared to controls, although they spent fewer hours on the academic curriculum.

SPARK was also adapted for American-Indian primary school children through the adoption of a unit of American Indian games to increase cultural relevance. There was also significant consultation with the American-Indian communities during the implementation of the intervention (Going, 2003). Although a multi-centered randomised trial found no statistically significant differences between students in the intervention and control schools, students in the intervention schools were seven to 10 per cent more active. An important positive finding was the incorporation of culturally relevant activities into the SPARK program and the acceptance by the American-Indian community (Gittelsohn et al., 2003). SPARK therefore may have potential for adaptation to CALD and other groups.

The Coordinated Approach to Child Health program (CATCH) comprises four school-based program components, two of which aim to promote physical activity, but also including a food service component and a tobacco control component. The CATCH-Physical Education (CATCH-PE) program is similar to SPARK, designed to increase children's moderate to vigorous physical activity during PE classes. CATCH-PE provides a series of health-related physical fitness activities on cards. Classroom curricula include specific programs (such as Hearty Heart and Friends, Go for Health) consisting of regular 30-40-minute lessons spaced at intervals through the term. The curricula target psychosocial factors and skills development focused on physical activity and eating. Teachers attend 1-1.5 days of training per year. The home curriculum involved activity packs complementing classroom curricula that included parent participation to complete and invitation to a 'family fun night' (www.CATCHTexas.org).

The CATCH program was tested in a randomised controlled field trial at four US centres (San Diego, Minneapolis, Houston, New Orleans) over two years, in 96 schools, with 56 intervention and 40 control primary (elementary) schools. The trial included 5,106 third grade students (mean age 8.76 years at baseline), with considerable ethnic and geographical diversity. However, participation at baseline was only 60 per cent. Intervention schools were further

randomised into two equal sub-groups: one received school-based program comprising school food service modifications, PE interventions, and CATCH curricula, the other received the same school-based program plus a family-based program. The control group received usual PE curricula, PE, food services, but no CATCH components (Luepker et al., 1996; Nader et al., 1999; Perry et al., 1990).

At the end of the trial the primary physical activity outcome measure was whether moderate to vigorous physical activity reached 40 per cent of PE class time, assessed by the SOFIT instrument. A secondary physical activity outcome was self-reported time engaged in moderate to vigorous physical activity, assessed using the self-administered physical activity checklist developed and validated as part of the CATCH program. The trial also assessed canteen food. The secondary study comparison, assessing the effect of the home/family component, examined differences in self-reported time engaged in moderate to vigorous physical activity, as well as other non-physical activity measures. Participation in the programs was reported as consistently high. Physical activity intensity in PE classes in intervention schools increased significantly more compared with control schools. Time spent in PE classes at higher levels of activity increased significantly in intervention schools (Luepker et al., 1996; Nader et al., 1999; Perry et al., 1990).

Follow up showed the program, combining health education with behavioural components and school environmental modifications, can improve physical activity and nutrition-related behaviours over three years after the end of the intervention (Hoelscher et al., 2004).

Subsequently CATCH has been disseminated among 1,800 schools in Texas by 2004, reaching potentially 850,000 students. School staff have expressed widespread satisfaction (Coleman et al., 2005; Owen et al., 2006).

The MAGIC intervention involved the introduction of an enhanced physical activity program, TOP start (www.youthsporttrust.org/page/top_start/index.html) in 18 randomly selected preschools (nursery schools) in the UK, with 18 randomly selected matched preschools as controls. The intervention included three 30-minute sessions per week over 24 weeks, plus home-based health education aimed at increasing physical activity outside of preschool through play and the reduction of sedentary behaviour. The preschool 'TOP start' program was intended to increase children's levels of physical activity and improve their fundamental movement skills, and to meet the requirements of the 'physical development and movement' component of the preschool curriculum in Scotland. The preschool-based intervention was delivered by two members of staff in each preschool who had attended three training sessions. The home-based element had two parts: each participating family received a resource pack with guidance on linking physical play at preschool and home, and two information brochures, one on ways of increasing physical activity at home, and one on ways to reduce the amount of time watching television. Posters were also displayed in the preschool for six weeks.

The intervention was evaluated via a cluster randomised controlled single blinded trial over 12 months, carried out in Scotland. A total of 545 children in 18 randomly selected preschools, mean age 4.2 years at baseline, were compared to children in 18 randomly selected SEC matched control preschools, in which the normal preschool program was continued. All preschools in the trial were selected from a set of preschools that agreed to participate. The pilot study results at 12 weeks showed significant improvements in physical activity with the intervention. However, the full trial found no significant effect on levels of habitual physical activity, or sedentary behaviour measured by accelerometry, or on body mass index. There was, however, an improvement in children's fundamental movement skills in the intervention group.

Spark, Catch and TOP Start have focused primarily on increasing physical activity. The final intervention focuses on reducing sedentary activities.

The Switch-play intervention is a school-based intervention being trialed among 397 grade five primary school children in low SES suburbs of Melbourne (Salmon et al., 2005a and 2005b). The intervention is focused on reducing sedentary activity. Intervention components have been incorporated into school curriculum. The behaviour modification (BM) group participated in 19 sessions that encouraged reduction in television, video and computer games and identified alternative PA activities. The fundamental motor skills (FMS) group participated in 19 lessons around mastery of six motor skills. The combined group participated in all BM and FMS activities. The intervention was based on social cognitive theory, behavioural choice theory and ecological theory, and incorporated components from SPARK, and other interventions, and incorporated education and awareness-raising, self-monitoring, decision-making and behavioural choices, role playing, goal setting and contracts, and feedback/reinforcement. The program is being assessed at baseline, immediately post-

intervention and six and 12 months post-intervention. Encouraging preliminary results show that more than half the children reported reducing television viewing. However, less than half reported increasing physical activity, suggesting that the relationship between sedentary activities and physical activities is complex. Evaluation is not complete.

The Romp & Chomp program in Victoria is targeted at children under five years of age in long day care, family day care, kindergartens and preschool settings. The program aims to develop structured active play in kindergarten and day care settings, and increase active play and decrease viewing time at home. The program is a partnership between health, education and private organisations, and involves a social marketing campaign and an active play program. The social marketing component aims to increase awareness among the target group through media releases, newsletters, merchandise, and presentations in targeted settings. Active play resources have been made available to early childhood workers in the targeted settings, and training will be included (WHO Collaborative Centre for Obesity Prevention, Deakin University, 2005).

The program is included in this catalogue, although it has not been evaluated, because it is an Australian program that has been developed and specifically targeted at the under fives, and is undergoing evaluation under the auspices of an internationally recognised research institution.

Also of interest is the small study of 60 obese children, of whom 50 were followed up seven years later, reported by Golan and Crow (2004), which compared a parent-only targeted program compared with a control intervention where only children were targeted. The Israeli study found the mean reduction in overweight children was 29 per cent greater in the parent-only group compared to the children-only group. The program for parents included 14 support and educational group sessions over 48 weeks, targeted at enhancing parenting skills in order to improve parents' ability to create a healthy environment to support an increase in children's physical activity and encourage healthy eating. The authors suggest that focusing on parenting skills shifts the focus from weight issues to a focus on a healthy home environment, and builds children's esteem.

9.1.4 Discussion

The review of published interventions to promote physical activity showed there is a critical shortage of programs aimed at preschool aged children, despite the stated importance of establishing increased physical activity patterns early in childhood. In Australia, 95 per cent of all preschoolers attended a school, kindergarten, preschool or day-care centre at least one day per week (AIFS, 2005). These would appear to be ideal settings in which to promote increased physical activity.

Only one program targeted at preschool children was tested in a trial of sufficient quality to consider recommending as a Best Start strategy: the TOP Start program, trialed in the MAGIC study in the UK (Reilly et al., 2006). Although this program was not found to have an impact on habitual physical activity of preschool aged children outside the preschool environment, it should be considered to have the potential to increase physical activity if introduced as part of the normal, regular curriculum in preschools. Several researchers have noted that regular and more frequent carefully structured physical education classes have the most potential for increasing the level of physical activity in children (Flynn et al., 2006).

While the SPARK, CATCH and 'Switch-Play' programs included in the Best Start catalogue here have been trialed in children from lower socio-economic areas, there are few trials of interventions to increase physical activity among children from CALD groups, especially recent immigrants. While SPARK has been adapted for American-Indians, and found culturally relevant and acceptable, it had limited success in demonstrating increased physical activity.

There have been almost no evidence-based interventions focused on the family environment, although a family and home-based approach would seem appropriate for promoting physical activity among very young children.

One other promising but currently untested program, the 'Romp & Chomp' intervention was included in this catalogue, because it is an Australian program being trialed in the Greater Geelong region. It is targeted specifically at preschool children and aims at increasing structured play at preschool, increased physical play and reduced television viewing at home. It also has been developed with social marketing principles as a framework, has developed resources, and is being evaluated in association with an internationally-recognised collaborative research centre at Deakin University.

9.1.5 References

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Table 9: Increased rate of children who participate in physical activity – recommended strategies

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(7.1) SPARK	1	Y	Y	Y	LOW SES
(7.2) CATCH	1	Y	Y	Y	LOW SES CALD
(7.3) Top Start	2	N	Y	Y	LOW SES
(7.4) Switch-Play	2	N	N	Y	LOW SES
(7.5) Romp & Chomp	5	N	N	Y	UNIVERSAL

Key*Supporting evidence:*

1. Well-supported practice – evaluated with a prospective randomised controlled trial.
2. Supported practice – evaluated with a comparison group and reported in a peer-reviewed publication.
3. Promising practice – evaluated with a comparison group.
4. Acceptable practice – evaluated with an independent assessment of outcomes, but no comparison group (such as pre and post-testing, post-testing only or qualitative methods) or historical comparison group (such as normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (such as formative evaluation, service evaluation conducted by host organisation).

Replication:

Has the intervention been implemented and independently evaluated at more than one site? (yes or no)

Documentation:

Are the content and methods of the intervention well documented (such as provider training courses and user manuals) and standardised to control quality of service delivery? (yes or no)

Theoretical basis:

Is the intervention based upon a well-accepted theory or developed from a continuing body of work in its field? (yes or no)

Cultural reach:

Has the program been trialed with people in disadvantaged communities, Indigenous people or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

Recommended strategy 7.1: Increased rate of children who participate in physical activity

Name of intervention	Sports Play and Active Recreation for Kids (SPARK)
Organisation	SPARK (US)
Brief literature review	<p>SPARK was trialed via a quasi-experimental intervention (four schools) and controls (three schools), mostly European-American children, in grade four, with mean ages 9.49–9.62 years. At the end of the trial, intervention students were more physically active during PE classes, and showed increased fitness. 18-month follow-up showed trained classroom teachers continued to use the curriculum and maintained increased student physical activity levels. 80 per cent of respondents sustained use up to four years later, and equal levels of implementation were found in affluent and disadvantaged schools. Although the program was trialed in older primary school children, packages have been developed for early primary, kindergarten and preschool-aged children. Components of the program also have been adopted for the ‘Switch-Play intervention’ in Australia (see below).</p>
How and why does this intervention work?	<p>SPARK physical education (PE) classes, of 30 minutes duration, three days per week, are designed to promote moderate to vigorous levels of physical activity (MVPA), teach movement skills, and be enjoyable, with intensity, duration and complexity increasing over time. Motivation is enhanced by students’ monthly self-assessment and self-recording of fitness levels. SPARK includes a self-management program, that teaches behaviour change skills to promote physical activity outside school, and includes a family oriented approach, with homework and newsletters to stimulate parent-child interaction and support for physical activity.</p> <p>An adaptation of SPARK for American-Indian school children trialed in 41 schools showed an eight to 10 per cent increase in physical activity (measured on one day, but not statistically significant).</p>
On what population does this intervention work best?	<p>Trialed in mostly European-American children but follow-up showed equal levels of implementation in disadvantaged schools. Program has been disseminated nationally in the US with training in over 3,000 schools. In addition, the program was extended to include kindergarten to grade six PE, and a component developed for preschool children.</p> <p>SPARK has been adapted (with culturally relevant games) and trialed in American Indian communities (‘Pathways’ program). The program also has been used in Australia (see ‘Switch-Play’ on following pages).</p>
Where will this intervention work best?	<p>School based intervention but including a home-based component. Trialed in school aged children aged but packages developed for preschool children. Packages have been developed for kindergarten and preschool children.</p>

What is required to implement this intervention?	SPARK program package available in US. Package includes needs assessment, curricula, equipment packages, ongoing follow-up and facilitator training. Cost is unknown.
Resources and contact information	The SPARK Programs 438 Camino Del Rio South, Suite 110, San Diego, CA 92108 www.sparkpe.org/contact.jsp E-mail: spark@sparkpe.org , phone US 619-293-7990 or 1-800-SPARK-PE
References	Dowda MC, Sallis JF, McKenzie TL, Rosengard PR and Kohl HW (2005) <i>Evaluating the sustainability of SPARK physical education: A case study of translating research into practice</i> . Research Quarterly for Exercise and Sport, Vol. 76, No. 1, pp.11-19. See also: www.sparkpe.org/results.jsp

Recommended strategy 7.2: Increased rate of children who participate in physical activity

Name of intervention	Coordinated Approach to Child Health (CATCH)
Organisation	CATCH Texas
Brief literature review	<p>The US Child and Adolescent Trial for Cardiovascular Health (CATCH) was a randomised controlled field trial at four centres (San Diego, Minneapolis, Houston, New Orleans) over two years, with 56 intervention and 40 control primary (elementary) schools. 5,106 grade three students (mean age 8.76 years at baseline) displaying considerable ethnic and geographical diversity. However, participation at baseline was only 60 per cent. Intervention schools were further randomised into two equal sub-groups: one received school-based program comprising school food service modifications, PE interventions, and CATCH curricula; the other received the same school-based program plus a family-based program. The control group received usual PE curricula, PE, food services, but no CATCH components.</p> <p>Participation in the programs was reported as consistently high. PA intensity in PE classes in the intervention schools increased significantly more compared with control school. Time spent in PE classes at higher levels of activity increased significantly in intervention schools. Time spent in physical activity using the SAPAC measure did not differ significantly between students in intervention and control schools, but vigorous PA was higher in intervention schools. Follow up showed that the program, combining health education with behavioural components and school environmental modifications, improved physical activity and nutrition-related behaviours over three years after the end of the intervention. The CATCH-PE activity materials were still in use five years post-intervention.</p>
How and why does this intervention work?	<p>The CATCH program comprises four school-based program components, two of which aim to promote physical activity, but also including a food service component and a tobacco control component. The CATCH-PE program is similar to SPARK, designed to increase children's moderate to vigorous physical activity (MVPA) during PE classes. CATCH-PE provides a series of health-related physical fitness activities on cards. Classroom curricula included specific programs (Hearty Heart and Friends, Go for Health) consisting of regular 30-40-minute lessons spaced at intervals through the term. Curricula target psychosocial factors and skills development focused on physical activity and eating. Teachers attend 1-1.5 days training per year. Home curriculum involves activity packs complementing classroom curricula that require parent participation to complete, and invitations to a 'family fun night'.</p> <p>Implementation across Texas was based on the program being easy to implement, low cost, and resulting in observable changes. Process evaluation has indicated widespread satisfaction and implementation of CATCH among school staff trained in the program.</p>

On what population does this intervention work best?	<p>CATCH was trialed in ethnically and racially diverse schools in the US.</p> <p>Subsequently CATCH has been disseminated among 1,800 schools in Texas by 2004, reaching potentially 850,000 students. School staff have expressed widespread satisfaction.</p>
Where will this intervention work best?	CATCH is a school-based intervention with some family-based components.
What is required to implement this intervention?	<p>Staff training, curriculum and resource materials are available through CATCH Texas. CATCH Texas Team has conducted workshops and presentations in over 20 states around the country, Canada and around the world. The importance of continuing education for staff was emphasised in the process evaluation.</p>
Resources and contact information	<p>www.sph.uth.tmc.edu/catch CATCH Texas office: phone 1-866-346-6163 CATCH curriculum materials: Ccontact the publisher, FlagHouse, Inc. at 1-800-793-7900</p>
References	<p>Coleman KJ, Tiller CL, Sanchez J, Heath EM, Oumar S, Milliken G and Dzewaltowski DA (2005) <i>Prevention of the epidemic increase in child risk of overweight in low-income schools: the El Paso coordinated approach to child health</i>. Archives of Pediatric and Adolescent Medicine, Vol. 159, pp. 217-224</p> <p>See also: www.CATCHTexas.org www.childtrends.org/Lifecourse/programs/ChildandAdolesentTrialforCardiovascularHealth.htm</p>

Recommended strategy 7.3: Increased rate of children who participate in physical activity

Name of intervention	MAGIC study intervention ('TOP start')
Organisation	<p>University of Glasgow and British Heart Foundation:</p> <p>The Movement and Activity Glasgow Intervention in Children Study utilising 'TOP Start', an enhanced physical activity program for children in preschool (nursery school children in UK).</p>
Brief literature review	<p>The MAGIC trial was a cluster randomised controlled single blinded trial over 12 months, carried out in Scotland. Five hundred and forty-five children in 18 randomly selected preschools, mean age 4.2 years at baseline, were compared to children in 18 randomly selected SEC matched control preschools, in which the normal preschool program was continued. All preschools in the trial were selected from a set of preschools that agreed to participate.</p> <p>Pilot study results at 12 weeks showed significant improvements in physical activity and fundamental motor skills with the intervention. Process evaluation showed the intervention was easily implemented in preschools, and enjoyed by teachers and children.</p> <p>The full trial found no significant effect on levels of habitual physical activity, or sedentary behaviour measured by accelerometry, or on body mass index. However, there was an improvement in children's fundamental movement skills in the intervention group.</p> <p>While the trial had no measured significant impact on habitual physical activity outside of preschool, the TOP Start program is potentially useful as a preschool physical activity program with developed resource materials. The intervention is included because it is one of the few programs aimed at preschoolers and achieved initial promising results in a rigorous trial and has well developed resources that have been used internationally.</p>
How and why does this intervention work?	<p>The intervention involved introducing an enhanced physical activity program, 'TOP start' in 18 randomly selected preschools (nursery schools) in UK, with 18 randomly selected matched preschools as controls. The intervention included three 30-minute sessions per week over 24 weeks, plus home-based health education aimed at increasing physical activity outside of preschool through play and the reduction of sedentary behaviour. The preschool 'TOP start' program was intended to increase children's levels of physical activity and improve their fundamental movement skills, and to meet the requirements of the 'physical development and movement' component of the preschool curriculum in Scotland. The preschool-based intervention was delivered by two members of staff in each preschool who had attended three training sessions. The home-based element had two parts: each participating family received a resource pack with guidance on linking physical play at preschool and home, and two information brochures, one on ways of increasing physical activity at home, and one on ways to reduce the amount of time watching television. Posters were also displayed in the preschool for six weeks.</p>

On what population does this intervention work best?	Preschool children
Where will this intervention work best?	TOP Start is a preschool-based intervention, with a very small family-based component.
What is required to implement this intervention?	Staff training and TOP Start equipment packages. Staff training is provided by Youth Sport Trust UK (availability in Australia is not known. However, TOP Start has been implemented in many countries outside the UK)

Recommended strategy 7.4: Increased rate of children who participate in physical activity

Name of intervention	'Switch-Play' intervention
Organisation	Centre for Physical Activity and Nutrition Research, School of Exercise and Nutrition Sciences, Deakin University, Melbourne, Australia
Brief literature review	Australian study, with 397 children enrolled in grade five in three government primary schools at four campuses in low SEC suburbs of Melbourne (77 per cent of eligible pupils). The study is a cluster-randomised trial using a 2x2 factorial design: classes given one of four 'treatments': behaviour modification (BM), fundamental motor skills (FMS) development, combined BM and FMS, and a control. Assessment is being undertaken at baseline, immediately post-intervention and six and 12 months post-intervention. Preliminary results show that more than half the children reported reducing TV viewing, but less than half reported increasing PA. Evaluation of the program is not complete, however 'Switch-Play' is included in the catalogue because preliminary results have been promising and reported in a peer-reviewed publication. Also 'Switch-Play' is based on a program that has been rigorously evaluated with excellent sustained results (see SPARK).
How and why does this intervention work?	Intervention components are aimed at reducing sedentary activities and substitution of physical activity, especially outside of school time, and were incorporated into school curriculum. The behaviour modification (BM) group participated in 19 sessions that encouraged reduction in TV, video and computer games and identified alternative physical activities. The fundamental motor skills (FMS) group participated in 19 lessons that focused on mastery of six motor skills. The combined group participated in all BM and FMS activities. The intervention was based on Social cognitive theory, behavioural choice theory and ecological theory, and incorporated components from SPARK, and other interventions, and incorporated education and awareness-raising, self-monitoring, decision-making and behavioural choices, role playing, goal setting and contracts, and feedback/reinforcement.
On what population does this intervention work best?	The intervention is being trialed among grade three primary school children in low SEC suburbs of Melbourne.
Where will this intervention work best?	School based intervention (primary school).
What is required to implement this intervention?	Trained teacher. The program was designed to be practical, incorporated into the school curriculum and does not require expensive equipment to implement.
Resources and contact information	Dr Jo Salmon, Centre for Physical Activity and Nutrition Research, School of Exercise and Nutrition Sciences, Deakin University, Burwood VIC 3125

References

Salmon J, Ball K, Crawford D, Booth M, Telford A, Hume C, Jolley D and Worsley A (2005) *Reducing sedentary behaviour and increasing physical activity among 10-year-old children: overview and process evaluation of the 'Switch-Play' intervention*. Health Promotion International Vol. 20, No. 1, pp 7-17

Salmon J, Hume C, Ball K, Booth M, and Crawford D (2005) *Individual, social and home environment determinants of change in children's television viewing: the Switch-Play intervention*. Journal of Science and Medicine in Sport. Vol 9. No. 5, pp 378-356

Recommended strategy 7.5: Increased rate of children who participate in physical activity

Name of intervention	Romp & Chomp intervention
Organisation	The program is a partnership between Barwon Health, the City of Greater Geelong, Deakin University Sentinel Site for Obesity Prevention, Department of Human Services Barwon South Western Region, the Geelong Kindergarten Association and Leisure Networks.
Brief literature review	<p>The Romp & Chomp program in the Greater Geelong Region, Victoria is targeted at children under five years of age in long day care, family day care, kindergartens and preschool settings, and their families. The program aims to increase active play and decrease TV viewing time at home, and increase structured active play in kindergarten and day care settings. The program is a partnership between health, education and private organisations, and involves a social marketing campaign and an active play program. The social marketing component aims to increase awareness among the target group through media releases, newsletters, merchandise, and presentations in targeted settings. Active play resources have been made available to early childhood workers in the targeted settings, and training will be included. The program is undergoing evaluation but results have not been published.</p> <p>The program is included in this catalogue, although it has not been evaluated, because it is an Australian program that has been developed and specifically targeted at the under fives, and is undergoing evaluation under the auspices of an internationally recognised research institution.</p>
How and why does this intervention work?	The program is undergoing evaluation.
On what population does this intervention work best?	Romp & Chomp is targeted at children under five years of age and their families.
Where will this intervention work best?	The program is aimed at children in long day care, family day care, kindergartens and preschool settings.
What is required to implement this intervention?	Marketing materials, early childhood staff training, community partnerships.
Resources and contact information	Louise van Herwerden Project coordinator Phone: 03 5261 1100 louisev@barwonhealth.org.au
References	www.deakin.edu.au/hmnbs/who-obesity/downloads/reports/rompandchomp2004pr.php#intervention

10. Oral health

10.1 Proportion of children who clean their teeth at least twice a day

10.1.1 Background

Dental caries is the formation of cavities in the teeth by the action of bacteria – otherwise known as tooth decay. This remains one of the most common childhood diseases in the world, although during the past two-three decades there has been a substantial reduction in dental caries in many developed countries (Adyatmaka, 1996).

However, oral health in children under the age of five has probably deteriorated, or at best remained stable, in recent years (Jackson, 2005). This is certainly the case in Victoria with recent statistics indicating that over the past twenty years there remains a significant burden of disease in the birth to five years age group. Data available in 2002 showed that 42 per cent of children in this age group had dental caries with 75 per cent of these children with untreated disease (Dental Health Service Victoria, 2003).

This problem is particularly acute in children from lower socio-economic backgrounds. In fact, recent data reveals that children in the lowest socio-economic quartile experience almost twice as many caries as those children in the highest socio-economic quartile (AHMAC, 2001). These high-risk children live in more materially deprived neighbourhoods, tend to have parents with lower educational levels, have diets high in sugary foods and drinks, and brush their teeth less often (Pine, 2000). This is also the case in children from CALD and Indigenous backgrounds with Indigenous children also likely to experience twice the caries rates of non-Indigenous children together with particularly high levels of untreated decay (AIHW, 2003).

In Victoria, caries experience in children's teeth varies markedly by region. The most recent Child Dental Health Survey revealed that clinically detectable decay was lowest in the four metropolitan regions and highest in the Grampians and Hume regions. This pattern is repeated with regard to deciduous missing and filled teeth, with children in rural regions having a greater mean number of missing and filled teeth than children in metropolitan regions (Armfield, 2006).

This is a real issue for children in Victoria as research demonstrates that deciduous caries leads to permanent caries later in life.

10.1.2 The evidence base

As mentioned above, the overall prevalence of dental caries is on the decline. Most expert opinion believes this is due to the introduction and regular use of fluoride toothpaste. In fact, there is widespread belief among researchers and public health authorities that the use of fluoride toothpaste is the method of choice for reducing dental caries as it is 'convenient and culturally approved, widespread, and it is commonly linked to the decline in caries prevalence in many countries' (Burt, 1998).

Fluoride was first introduced as an anti-caries component in toothpaste during the late 1960s and is today the most common vehicle delivering fluoride to the oral cavity (Twetman, 2003). Despite the wide range in the type and concentration of fluoride in fluoride toothpastes, the generic ability of them to reduce dental caries has been well documented for at least 30 years.

The NHMRC report of 2002 highlighted that there is level-one evidence (good systematic review) that regular brushing of teeth with fluoride toothpaste is beneficial for the prevention and control of dental caries, reducing incidence by as much as 30 per cent (Eagar et al., 2005).

A more recent systematic review of the literature highlighted the pooled results of 70 studies assessing the effect of fluoride toothpaste on the permanent dentition. The results suggest that the use of fluoride toothpaste is associated with a 24 per cent reduction in decayed, missing and filled tooth surfaces (Marinho, 2004).

There is significant evidence that establishing regular tooth brushing (at least twice a day) with fluoride toothpaste into the daily routine of high-risk children has the potential to reduce inequalities in dental health (Curnow, 2002). This is particularly important for younger children as evidence indicates that good oral health behaviours attained in the early years will translate to good oral health behaviours, and good oral health outcomes in adult life (Wind, 2005).

However, it is generally known that tooth brushing by children under the age of 10 is inefficient. This can be explained by the lack of motivation and poor manual dexterity normal to this age group (Leal, 2002). In view of this, there is considerable evidence to support the provision of knowledge and teaching skills for children in oral hygiene.

10.1.3 Selection of recommended interventions

Cleaning teeth at least twice a day is a simple intervention that can have a very positive effect on the oral health of children. Programs or interventions that aim to encourage this activity generally fall into two broad categories: school/kindergarten based strategies or home-based strategies.

School/kindergarten based dental programs are a common strategy and can be particularly effective for reaching children at high risk of poor dental health. It is reported that school environments can have a significant impact on sustainable healthy behaviours (Wind, 2005). Such programs can also be broadly divided into two groups: those programs that provide toothbrushing instruction only and those that combine toothbrushing instruction with educational oral health messages.

With regard to providing toothbrushing instruction only, Leal (2002) studied the effectiveness of different types of teaching methods to promote toothbrushing in preschool children. He established that instruction and supervision are particularly important to establishing effective toothbrushing habits in children under the age of five. Mere instruction was not enough for this age group as the children were not familiar with phrases such as 'on top of', 'inside', and 'behind'. Therefore a more 'hands-on' or audiovisual approach is required for this age group if effective instruction is going to be achieved.

The first recommended intervention in this target area has been provided by a recent study carried out in London on five and six year old children (Jackson, 2005). This intervention has a very simple method with children in the intervention group receiving daily toothbrushing instruction with fluoridated toothpaste supervised by a teacher on school days. No concurrent dental health education was provided to the students. Significantly, children in the intervention group had a significantly reduced caries increment than the children in the non-intervention group. This is a particularly straightforward initiative that can be easily achieved provided the teaching staff are trained in appropriate toothbrushing technique for young children.

However, evidence suggests that such strategies have mixed success in changing toothbrushing practice in the long term in older children. A recent study into the effects on toothbrushing behaviour and habit strengths in Holland revealed that during the intervention period, brushing teeth at school resulted in a significant increase in the frequency of toothbrushing. However, these effects were not maintained in a one-year follow up (Wind, 2005). Therefore, simple toothbrushing instruction is not enough for older children.

For older children (five years and older) interventions in the school that are most likely to be successful involve a combination of toothbrushing instruction together with oral hygiene education. In these instances there is more likelihood of success if the intervention also has a focus on the family in order to achieve positive reinforcement at home (NSW Oral Health Promotion, 2003).

The second recommended intervention for this target area incorporates all of these measures. The Dental School at the University of Dundee, Scotland developed a school and home-based strategy involving supervised toothbrushing on school days with fluoride toothpaste for two years with home-based incentives to promote twice daily brushing. Significantly the results highlighted that the control group who brushed once a day or less had 64 per cent more caries than those who took part in the intervention.

A similar initiative combining a school and home-based approach was trialed on kindergarten children in China. In the intervention group teachers educated parents about the importance of maintaining oral hygiene using a multimedia presentation at semi-annual parent teacher evenings. Parents were also asked to ensure that their children brushed their teeth before bedtime. This was supplemented in kindergarten with supervised toothbrushing twice a day for the intervention group. After two years the children in the intervention group had significantly less caries development than those in the control group. However, it is not possible with this study to unbundle the effects of parental education from supervised toothbrushing (Rong, 2003).

The third recommended intervention targets the issue of poor oral health in Indigenous children's teeth. The 'Top Tips for Teeth' program conducted by LaTrobe Community Health Service specifically targets local Koori primary and preschool children with the aim of improving their oral health knowledge, attitudes and behaviours. The strategies to achieve this included an after-lunch brushing program where each child brushed their teeth before commencing afternoon classes. This was supported by four culturally appropriate education sessions focussing on oral health, skill enhancement and brushing technique. Culturally sensitive educational resources were also provided to the students such as fridge magnets, newsletters and information sheets. The results to this intervention were quite impressive with improved plaque scores revealing that children in the program had significantly improved their brushing technique. Knowledge, awareness and acceptance of dentistry had also improved in the Koori children. As a result of this successful program oral health has been included as part of the school curriculum and Top Tips for Teeth is a component of the Koori Health and Wellbeing Project.

The final recommended intervention also targets the issue of poor oral health in Indigenous children but from a completely different perspective to the brushing teeth initiatives mentioned above. 'Tiddalick Takes on Teeth' is an oral health promotion program developed in partnership between the Awabakal Newcastle Aboriginal Cooperative Ltd and Hunter Area Health Services. The program focused at encouraging Indigenous children to choose to drink water in between meals and to 'swig, swish, swallow' water after meals and snacks. The intervention includes the Tiddalick's Toothy Tale package comprising of a teacher's resource, oral health policy proforma, storybook, video, song, water bottles, stickers and a poster for use in early childhood centres.

This intervention has been particularly successful and has consequently been rolled out statewide in NSW by the NSW Oral Health Branch. Also, the Secretariat of National Aboriginal and Islander Child Care and the National Aboriginal Community Controlled Health Organisation have endorsed the program for nationwide release. Interestingly, the evaluation of the project indicated that although the intervention has a culturally specific flavour it can also have benefits at non-Indigenous child care centres.

10.1.4 Discussion

Evidence suggests that brushing your teeth at least twice a day with fluoride toothpaste is a very simple strategy that can have significantly positive effects on oral hygiene. If this intervention is targeted at high-risk children it has the potential to reduce inequalities in dental health. This section offers four quite different evidence-based interventions that are aimed at increasing the proportion of children who clean their teeth at least twice a day.

The first strategy that focuses only on supervised toothbrushing at school for preschool children is a particularly simple approach that has some very encouraging results for children's dental health. However, there is strong evidence to suggest that school interventions that also have a home-based strategy are more likely to be successful. This is why intervention number two has been selected as it provides a good balance of the two approaches.

The final two strategies were selected because they have achieved significant results in an area where improvements in oral health are clearly needed – that of Indigenous children.

10.1.5 References

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Table 10: Proportion of children who clean their teeth at least twice a day – recommended strategies

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(8.1) Understanding parents' beliefs	1	N	N	Y	LOW SES
(8.2) Top Tips for Teeth	5	N	N	Y	INDIGENOUS
(8.3) Supervised Toothbrushing	2	N	Y	Y	LOW SES CALD
(8.4) Tiddalick Takes on Teeth	3	Y	Y	Y	INDIGENOUS

Key*Supporting evidence:*

1. Well-supported practice – evaluated with a prospective randomised controlled trial.
2. Supported practice – evaluated with a comparison group and reported in a peer-reviewed publication.
3. Promising practice – evaluated with a comparison group.
4. Acceptable practice – evaluated with an independent assessment of outcomes, but no comparison group (such as pre and post-testing, post-testing only or qualitative methods) or historical comparison group (such as normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (such as formative evaluation, service evaluation conducted by host organisation).

Replication:

Has the intervention been implemented and independently evaluated at more than one site? (yes or no)

Documentation:

Are the content and methods of the intervention well documented (such as provider training courses and user manuals) and standardised to control quality of service delivery? (yes or no)

Theoretical basis:

Is the intervention based upon a well-accepted theory or developed from a continuing body of work in its field? (yes or no)

Cultural reach:

Has the program been trialed with people in disadvantaged communities, Indigenous people or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

Recommended strategy 8.1: Proportion of children who clean their teeth at least twice a day

Name of intervention	Understanding parents' beliefs and motivating children
Organisation	The Dental School, University of Dundee, Scotland, UK
Brief literature review	<p>The intervention had two main components: supervised toothbrushing on school days with a chalk-based toothpaste containing 1,000 ppm fluoride and a school and home-based incentive scheme to promote twice daily brushing.</p> <p>After lunch on each school day children brushed their teeth under the supervision of a brushing supervisor. The supervisor also acted as a contact to families and encouraged children to brush effectively. Certificates were handed out to individual children if they had been a 'good toothbrusher' that week. Each child was also given a new toothbrush and toothpaste to take home during the school holidays. A letter to parents was also included with a toothbrushing chart with a separate pack of adhesive stars. After the holidays the completed chart is handed to the brushing supervisor and the child receives a small gift.</p>
How and why does this intervention work?	A randomised control trial demonstrated that the control group who brushed once a day or less had 64 per cent more caries than those who brushed at least twice a day. In the intervention group this difference in caries was reduced to 16 per cent. Almost all (95 per cent) of the parents felt toothbrushing charts were a good way to encourage children to brush regularly.
On what population does this intervention work best?	The study was carried out on 461 five-year-old children in two deprived communities in Scotland. The majority of families investigated in this study came from communities with low levels of home ownership, low levels of male employment and low levels of education. The children were mostly white and indigenous to the area.
Where will this intervention work best?	This intervention is best targeted towards at-risk children. Cultural impacts are very important and an appreciation of how these vary is needed in order to apply the conclusions from this study to a wider child population.
What is required to implement this intervention?	Trained toothbrushing supervisors are required. This study used mothers who were already employed by the school to supervise lunchtime play. It is also necessary to provide free toothbrushes and fluoride toothpaste together with toothbrushing charts and adhesive stickers to record toothbrushing activity in the home.
Resources and contact information	<p>Dr Cynthia Pine Reader/Honorary Consultant in Dental Public Health and Health Psychology The Dental School, University of Dundee, Park Place, Dundee DD1 4HR, Scotland, UK. E-mail: c.m.pine@dundee.ac.uk</p>
References	Pine CM, McGoldrick PM, Burnside G, Curnow MM, Chesters RK, Nicholson J and Huntington E (2000)

Recommended strategy 8.2: Proportion of children who clean their teeth at least twice a day

Name of intervention	Top Tips for Teeth
Organisation	LaTrobe Community Health Service
Brief literature review	This project focused on primary and preschool Koori children in the LaTrobe Valley and aimed to improve oral health knowledge, attitudes and behaviours. The strategies included an after-lunch brushing program where each child brushed their teeth before commencing afternoon classes. This was supported by four culturally appropriate education sessions focussing on oral health, skill enhancement and brushing technique. These sessions were facilitated by a local dental therapist. Culturally sensitive educational resources were also provided to the students such as fridge magnets, newsletters and information sheets.
How and why does this intervention work?	Process evaluation revealed that younger students responded more positively to the program. Plaque scores revealed that by term three there was a significant improvement in the students brushing techniques. Students were more aware of the importance of looking after their teeth and gums and individual brushing techniques and coordination improved. Knowledge, awareness and acceptance of dentistry had also improved. As a result of this successful program oral health has been included as part of the school curriculum and Top Tips for Teeth is a component of the Koori Health and Wellbeing Project.
On what population does this intervention work best?	This intervention was targeted specifically at Koori children attending primary and preschool on the LaTrobe Valley.
Where will this intervention work best?	This intervention is specifically appropriate for Indigenous children.
What is required to implement this intervention?	Students need to be provided with a new toothbrush at the start of each term and toothbrushes need to be kept in individual storage containers. Teaching staff need to own and fully support the program.
Resources and contact information	LaTrobe Community Health Service. Contact Julie Rogalsky on 03 5236 5438.
References	

Recommended strategy 8.3: Proportion of children who clean their teeth at least twice a day

Name of intervention	Supervised toothbrushing and primary school children
Organisation	North West London Community Dental Service, Oral Health Research Centre, London, UK
Brief literature review	Prior to the study, the class teachers were trained individually by a dental hygienist in toothbrushing technique appropriate for young children. Children in the intervention group received daily supervised toothbrushing with fluoridated toothpaste on school days combined with recommended daily home use. In order to facilitate this a junior toothbrush was supplied to each student. There was no concurrent dental health education and toothpaste and a toothbrush was not provided for home use. No attempt was made to change the children's diet.
How and why does this intervention work?	For children in the intervention group, the overall caries increment was significantly less than for children in the non-intervention group. This intervention suggests that a program of daily, teacher-supervised toothbrushing with fluoride toothpaste can be safely targeted to socially deprived communities and enable a significant reduction in dental caries in five-year-old primary children.
On what population does this intervention work best?	This intervention was specifically targeted at school areas with social deprivation and high ethnic populations.
Where will this intervention work best?	The study demonstrated acceptability of a toothbrushing program both to the teaching staff and to the students themselves in an area of social deprivation and high ethnicity.
What is required to implement this intervention?	Teaching staff need to be trained in appropriate toothbrushing technique for young children. A toothbrush and waste cup for school use only was supplied to each student. Students were also provided with fluoride toothpaste for school use only.
Resources and contact information	Dr R.J. Jackson Oral Health Research Centre North West London Community Dental Service The Medical Centre, 7E Woodfield Road, London, W9 3XZ E-mail: r.Jackson@tecres.net
References	Jackson RJ et al. (2005)

Recommended strategy 8.4: Proportion of children who clean their teeth at least twice a day

Name of intervention	Tiddalick Takes on Teeth – Oral health promotion program
Organisation	Developed in partnership between the Awabakal Newcastle Aboriginal Cooperative Ltd. and Hunter Area Health Services.
Brief literature review	A program focused at encouraging Indigenous children to choose to drink water in between meals and to ‘swig, swish, swallow’ water after meals and snacks. The intervention includes the Tiddalick’s Toothy Tale package comprising of a teacher’s resource, oral health policy proforma, storybook, video, song, water bottles, stickers and a poster for use in early childhood centres.
How and why does this intervention work?	The program was piloted in three Indigenous and three non-Indigenous early childhood centres over six months to measure success and evaluate the tools. Successful results from the pilot saw the NSW Oral Health Branch fund a statewide rollout that included a train the trainer workshop. As a result of this project all Indigenous childcare centres in NSW now provide all drinks to children so that positive oral health practices are encouraged. It is reported that ‘children identify with and have pride in Aboriginal dreaming character Tiddalick the frog, which promotes cultural and spiritual wellbeing’.
On what population does this intervention work best?	The program targets Indigenous children and has been endorsed by the Aboriginal Health and Medical Research Council.
Where will this intervention work best?	This intervention has been specifically designed for use in Indigenous early childhood centres and is beneficial also for non-Indigenous childhood centres. The program has been distributed throughout NSW and Tasmania. The Secretariat of National Aboriginal and Islander Child Care and the National Aboriginal Community Controlled Health Organisation have endorsed the program for nationwide release.
What is required to implement this intervention?	Tiddalick’s Toothy Tale package which consists of: a storybook for children (Narootah and Tiddalick visit the dentist); a teacher’s handbook with activities to perform; a CD song (‘Swig, Swish, Swallow’); a video (a child’s first day at preschool – we drink water here); an oral health policy proforma (suggestions for effective oral health at preschool); a magnet (dental professionals recommend water only for healthy teeth); and a drink bottle. Tiddalick train-the-trainer day is also recommended to equip representatives from local Aboriginal medical services and oral health services to implement the program locally.
Resources and contact information	Contact Brett Duane, Awabakal Dental E-mail: bduane@awabakal.org Phone: 02 4969 2505
References	

11. Reading, writing and numeracy

11.1 Increased rate of parents reading to their children

11.1.1 Background

The importance of developing literacy skills including reading has been subject to extensive research. This research is discussed at length in other sections of this report and therefore will only be mentioned briefly here. According to Good et al. (1998) poor reading skills not only have a detrimental effect on students' academic trajectory, they also have been associated with behavioural and emotional problems, such as aggressive behaviour and poor self-concept (cited in Persampieri, 2006). It has been shown that if children fail to read by the fourth grade, they have a 'future of diminished success' (US Department of Education, 2001 cited in Persampieri, 2006). The National Reading Panel based in the United States found that guided oral reading interventions have a consistent, positive impact on word recognition, fluency and comprehension (Persampieri, 2006).

The benefit of parents reading with their children is undisputed (Epstein, 1996 cited in Persampieri, 2006). In 1985, the National Academy of Education reported 'the single most important activity for building the knowledge required for eventual success in reading, is reading aloud to children' (Huebner and Meltzoff, 2005). Reading within the home works to the educational advantage of all children regardless of their economic, racial, ethnic and educational background (Epstein, 1996 cited in Persampieri, 2006). Parents then, have a great opportunity to contribute positively to the academic success of their children as they work to extend their learning environment and provide one-to-one attention that formal schooling cannot provide (Christenson et al., 2001 cited in Persampieri, 2006).

One of the risk factors for parents neglecting to read to their children is their own poor levels of literacy. Zeece (2005) highlights this problem saying that while it is widely accepted that parents are their child's first literacy teachers (Edwards, 2004 cited in Zeece, 2005) they may not always know how to extend a story-telling session, judge a teachable moment or even read the words themselves. Zeece suggests that in this case parents require additional support and coaching to increase their own literacy and ability to interact with their child while reading.

Another risk factor facing children is being a member of a low SES family. Ninio (1980) found that mothers of lower SES when reading to their children demonstrated less teaching behaviour than their middle-class counterparts (cited in Lonigan and Whitehurst, 1998). It was estimated in one study that a typical middle-class child enters first grade with 1,000 to 1,700 hours of one-to-one book sharing experience while a typical low SES child experiences just 25 hours (Adams, 1990 cited in Lonigan and Whitehurst, 1998). In addition to this several studies have highlighted the difference in book ownership among low SES families as compared with other groups. An example of this was a study conducted by McCormick and Mason (cited in Lonigan and Whitehurst, 1998) where 47 per cent of the low SES parent sample reported having no alphabet books in the home. In comparison only three per cent of the professional parent sample reported a similar absence of books.

Aboriginal and Torres Strait Islander children are also at risk of not having parents who read to them. As well as being more likely to have parents of low literacy, and low SES, Aboriginal and Torres Strait Islander children often struggle with the delivery of education in Australian schools. The National Review of Education for Aboriginal and Torres Strait Islander Peoples (1994) reports that the instructional strategies used to develop literacy skills fail to meet the educational, social and cultural needs of Aboriginal and Torres Strait Islander children and their families (Freeman, 2006).

11.1.2 The evidence base

Reading aloud with children has been shown to be particularly effective when it is highly interactive (Huebner et al., 2005). Interactive reading with children has been shown to develop a child's oral language that, in turn, promotes phonemic awareness found to strongly predict a child's future success in learning to read (Adams, 1990 cited in Hill, 2006). Parents can often feel they lack the necessary knowledge and skills to provide this level of support and are consequently left feeling inadequate (Wolfendale et al., 1986 cited in Persampieri, 2006). This is especially the case when parents are poor readers themselves. Equipping parents with the necessary skills to effectively read aloud with their children has been shown to increase reading fluency (Fiala et al., 2003 cited in Persampieri, 2006) in children and teaching ability in parents.

Several methods have proved to be advantageous. One such method is dialogic or ‘hear and say’ reading. The method is based on three principles: 1) the use of evocative techniques that encourage the child’s active participation in telling the story 2) use of feedback to the child in the form of expansions, corrections and praise and 3) progressive change to stay at or beyond the child’s current level of independent functioning (Arnold and Whitehurst, 1994 cited in Huebner and Meltzoff, 2005). The method has been extensively tested and has consistently resulted with change to the shared reading style of parents. Dialogic reading instruction has also demonstrated positive effect on the expressive language skill of children (Huebner and Meltzoff, 2005). Notably, positive results have been found among children belonging to low SES families (Dale et al., 1996 cited in Huebner and Meltzoff, 2005).

Large scale book giveaway schemes are also evidenced to have a positive effect on children and their parents reading to them. Bookstart (UK) is a program that is aimed at encouraging reading within the home by giving every baby a free package at their seven to nine month health check. The pack consists of books appropriate to that age group and guidance materials for parents and carers. The program began in 1992 with 300 babies, in 2000 there were 65,000 and since 2001 there have been 1,170,061 Bookstart babies. Individual Bookstart programs (usually libraries) order resources from a central body named Booktrust. Funding has also been received to distribute two more kits prior to the child’s formal entry into school, one at two to three years known as Bookstart + and another at four years known as Bookstart Treasure Chest (Moore and Wade, 2003).

The pilot study of 300 children representing a broad cross section of Birmingham’s population was evaluated. Data were collected from initial questionnaires, observational studies, baseline assessments, and scores from Scholastic Assessment Tests. From all of these it was concluded that children benefited from the program in all areas at preschool, especially in keeping focus, turning the pages and making comments regarding the text. The qualitative side to the evaluation concluded that Bookstart was successful at generating positive attitudes to and interest in books, and book sharing in a diverse range of families (Moore and Wade, 2003). As was mentioned earlier McCormick and Mason report that families of low SES are reported to have few children’s books in their homes (cited in Lonigan and Whitehurst, 1998). Programs such as these are therefore of great benefit to children in families of low SES.

There is evidence to suggest that there are benefits to engaging health professionals in the primary health care setting in the attempt to model and encourage effective reading aloud techniques. Needleman et al. (2002) highlights the unique opportunity of paediatricians to provide this care due to their ongoing, repeated contacts with children and their parents early on in life. In addition to this parents are most often ‘eager for, and trusting of, guidance that addresses their infants’ overall wellbeing’ from health professionals (Needleman et al., 2002). Programs that capitalise on this opportunity have been shown to have wide implementation and success.

11.1.3 Selection of recommended interventions

One of these programs is Reach Out and Read (ROR). ROR programs make early literacy a standard part of paediatric primary care. Physicians and nurses advise parents that reading aloud is the most important thing that they can do to help their child start school ready to learn. The ROR program comprises of three core elements: 1) at child check ups, clinicians encourage parents to read aloud to their children and give them age-appropriate tips and encouragement for doing so. Those who have difficulty reading themselves are encouraged to invent their own stories and spend time naming objects 2) providers give every child between six months and five years a book appropriate to the child’s age 3) the waiting room environments are literacy rich and often have volunteer readers (Klass et al., 2003).

Several evaluations have been written on ROR. In a preliminary study parents who received books and guidance were four times more likely to report that their children liked being read to. This effect was strongest among families receiving government assistance, that is, low SES families. In another longitudinal study parents in the intervention group showed a tenfold increase in reading to their children at least three times a week. In a study focusing specifically on immigrants frequent book reading doubled. A study performed on culturally and linguistically diverse families showed positive change in attitudes, awareness and practices, even where they were not using books in their appropriate language. Studies that have looked at the intervention group’s language skills have found that there were significant improvements for both expressive and receptive language (Klass et al., 2003).

ROR has had wide implementation throughout the world and has informed the framework of an Australian program named Let's Read. Let's Read is a joint initiative by the Centre of Community Child Health and The Smith Family. The program has at its core two of the components of ROR: children are given a quality book and parents are given guidance on how to effectively interact with their child when reading (www.letsread.com.au). The pilot has been evaluated regarding client satisfaction and a feasibility study conducted for implementation into the Victorian primary health care setting, both demonstrating positive findings. This study did highlight the program's difficulty with engaging CALD communities and providing effective training and support to the maternal and child health nurses who delivered the intervention (Kaa and Foster, 2004).

Better Beginnings is a literacy project initiated by the Western Australian State Library and forms part of the Western Australian Government's early years strategy. It is based on the Bookstart program in the UK. Better Beginnings aims to inform parents of their role as their child's first teacher. There are two key elements to the program. The first is a resource pack for parents of young babies containing a quality children's book, a colourful growth measurement chart with nursery rhymes printed on it, information about the value of reading to children, some titles of popular books and information about local library resources. The second component of the project is parent/child workshops and baby story time sessions. These workshops are held at the local library and involve young children, their parents, health and child development professionals and librarians (www.better-beginnings.com.au).

An evaluation was conducted at two of the six piloted sites, Bura, a mining town with a high Indigenous population and Sherwood an outer metropolitan suburb with a small Indigenous population. The evaluation was based on both quantitative data retrieved from two parent surveys and qualitative data gained from interviewing 11 mothers and having them demonstrate how they read to their children. The identified strengths of the program were: the potential for long-term follow up activities, the collaboration between State and local libraries, the high profile of the program, the commitment and passion of the project coordinator, the librarians and the community health nurses and the high quality resource pack (Barratt-Pugh et al., 2005). This program has several components that have been shown to have success with encouraging parents to read with their children. The first is the book giveaway, which has proved beneficial in the Bookstart program (Moore and Wade, 2003). Second is the capacity building that takes place at the workshops. Through this parents are equipped to effectively read with their children.

Started in 1981, the Parents as Teachers (PAT) program is aimed at providing parents with child development knowledge and parenting support. This is achieved by trained and certified parent educators visiting the home and covering a lesson from the national PAT curriculum. The curriculum emphasises the different developmental stages in a child's first three years of life. At the conclusion of the lessons, the parents are left with materials that reinforce or supplement the lessons for the parents to read and share with other family members. Parent educators also conduct periodic screening of hearing, vision, and general development and make referrals to appropriate community services for child and health care. The program has enjoyed wide implementation and rapid growth serving 500,000 families since its inception in more than 2,000 sites (Wagner and Clayton, 1999). The training of parents in literacy promoting techniques as previously mentioned has proved beneficial in the literature (Fiala et al., 2003 cited in Persampieri, 2006). In addition to this PAT attempts to combine health care with literacy promotion which is another evidence based strategy (Needleman et al. 2002).

Since its inception over two decades ago PAT has been subject to many evaluations. Overall, the main findings have been that PAT parents are more involved in their children's schooling, engage in more language and literacy promoting behaviour, and are more knowledgeable about child rearing and development. With regard to the children at age three PAT children are more advanced in language, problem solving and social development and score higher on kindergarten readiness tests. The program has also been shown to have good effects on CALD, disadvantaged and young parent families (Wagner and Clayton, 1999).

Bridging the Gap was a project run by Macquarie University in Sydney. The project aims were threefold: to increase student 'at-home' experiences with books, to foster child-family interactions with literacy and to increase links between home and school for Indigenous families (Freeman, 2006). The intervention group was made up of 22 children and their families. The program was implemented over two terms and involved thorough consultation by Aboriginal and Torres

Strait Islander education assistants (AEAs). Ten books were selected and recorded to audio-tape by the AEAs or members of the community. Games were also developed along with a 'Stories are Fun' booklet to give the participating children. Each fortnight AEAs met with the participating child's parent/s and gave them a new book, audio-tape and game appropriate for the book. During these meetings AEAs demonstrated a new book-reading technique and game playing procedure that the parents could try with their child (Freeman, 2006).

Both quantitative and qualitative data were collected. This included results from the pre and post assessment of participants and the interviews with the children and parents. All students were shown to improve in all or most of the skills that were assessed, including listening comprehension, picture book sequencing, short-story retell, picture-book retell, phonemic awareness, letter identification and concepts about print (Freeman, 2006). Students reported they read the books on most days and in some cases on weekends and could also retell some if not all of the stories. Parent reading strategies showed evidence of their participation in the program. At the post program interview the parents reported using more comprehensive techniques with their children like asking predictive questions and ascertaining whether their children had understood the story by encouraging them to retell it. The parents also commented that their children now attempted to recognise and read words for themselves, and had increased confidence in doing so (Freeman, 2006).

11.1.4 Discussion

There is a very wide literature base on child literacy and the strategies used to give children the best start possible in this key area of development. Stemming from this literature is a plethora of programs with evidence-based findings forming their framework. The strategies chosen here have been chosen on the basis of having some demonstrated potential for implementation in Australia.

Better Beginnings is an Australian program and is therefore suitable to the Australian context. One of the positive elements of the program that came out of the evaluation was the flexibility of the program enabling wide implementation. The program's success hangs on the integration of services between local and state authorities. It is recommended that this program only be implemented in sites where this kind of cohesion is attainable. The evaluation did highlight concerns regarding the lack of representation from CALD groups in resource pack. It is recommended that attention is given to engaging CALD communities through the development of appropriate resources.

According to its evaluation, Bridging the Gap is a highly effective Australian program for engaging Aboriginal and Torres Strait Islander parents and their children. The project's results are limited however by the small sample size of 22. The children represented 16 schools across the region implying that wide implementation of the program is possible.

During its 20 years of operation, PAT has enjoyed wide implementation and success. This has included Australia with 14 sites across New South Wales and the Australian Capital Territory (www.parentsasteachers.org). The sites vary from public schools to parent resource centres to childhood services. As far as a formal evaluation among the Australian sites goes, a search returned empty. Further research is required to ascertain the effect of this program within Australia.

11.1.5 References

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Table 11: Increased rate of parents reading to their children – recommended strategies

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(9.1) PAT	2	Y	Y	Y	LOW SES CALD
(9.2) Better Beginnings	4	Y	N	Y	
(9.3) Bridging the Gap	4	N	Y	Y	INDIGENOUS
(9.4) ROR	3	N	Y	Y	LOW SES CALD

Key*Supporting evidence:*

1. Well-supported practice – evaluated with a prospective randomised controlled trial.
2. Supported practice – evaluated with a comparison group and reported in a peer-reviewed publication.
3. Promising practice – evaluated with a comparison group.
4. Acceptable practice – evaluated with an independent assessment of outcomes, but no comparison group (such as pre and post-testing, post-testing only or qualitative methods) or historical comparison group (such as normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (such as formative evaluation, service evaluation conducted by host organisation).

Replication:

Has the intervention been implemented and independently evaluated at more than one site? (yes or no)

Documentation:

Are the content and methods of the intervention well documented (such as provider training courses and user manuals) and standardised to control quality of service delivery? (yes or no)

Theoretical basis:

Is the intervention based upon a well-accepted theory or developed from a continuing body of work in its field? (yes or no)

Cultural reach:

Has the program been trialed with people in disadvantaged communities, Indigenous people or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

Recommended strategy 9.1: Increased rate of parents reading to their children

Name of intervention	Parents as Teachers (PAT)
Organisation	Parents as Teachers National Center
Brief literature review	Parents as Teachers (PAT) provides parents with child development knowledge and parenting support. This is achieved by trained and certified parent educators, visiting the home and covering a lesson from the national PAT curriculum. The curriculum emphasises the different developmental stages in a child's first three years of life. At the conclusion of the lessons, the parents are left with materials that reinforce or supplement the lessons for the parents to read and share with other family members. Parent educators also conduct periodic screening of hearing, vision, and general development and make referrals to appropriate community services for child and health care.
How and why does this intervention work?	<p>Training parents in literacy promoting techniques is an evidence-based strategy, as is the combination of health care with literacy promotion.</p> <p>Since its inception over two decades ago, PAT has been subject to many evaluations. Overall the main findings have been that PAT parents are more involved in their children's schooling, engage in more language and literacy promoting behaviour and are more knowledgeable about child rearing and development. At age three PAT children are more advanced in language, problem solving and social development and score higher on kindergarten readiness tests than their peers. These findings are from sites overseas; the Australian sites have not yet been evaluated.</p>
On what population does this intervention work best?	PAT targets and assists families throughout pregnancy until their child enters kindergarten, usually aged five.
Where will this intervention work best?	The program has been implemented widely and has grown rapidly, serving 500,000 families since its inception. Its use at more than 2,000 sites in the United States demonstrates that program can work well in diverse locations. There are 14 PAT sites throughout NSW and the ACT.
What is required to implement this intervention?	For the program to achieve success there needs to be a consistent program or curriculum to ensure quality, trained staff and dedicated clientele.
Resources and contact information	<p>Website: www.parentsasteachers.org</p> <p>Email: info@parentsasteachers.org</p> <p>Phone: 314-432-4330</p>
References	Wagner M M and Clayton S L (1999)

Recommended strategy 9.2: Increased rate of parents reading to their children

Name of intervention	Better Beginnings
Organisation	Western Australian State Library
Brief literature review	Better Beginnings is a literacy project initiated by the Western Australian State Library and forms part of the Western Australian Government's early years strategy. It is based on the Bookstart program in the UK. Better Beginnings aims to inform parents of their role as their child's first teacher. There are two key elements to the program. The first is a resource pack given to parents of young babies at their six-week check up. This pack contains a quality children's book, a colourful growth measurement chart with nursery rhymes printed on it, information about the value of reading to children, some titles of popular books and information about local library resources. The second component of the project is parent-child workshops and baby story time sessions. These workshops are held at the local library and involve young children, their parents, health and child development professionals and librarians.
How and why does this intervention work?	An evaluation was conducted at two of the six pilot sites. The identified strengths of the program were its potential for long-term follow up activities, the collaboration between State and local libraries, the high profile of the program, the commitment of the project coordinator, the librarians and the community health nurses and the high-quality resource pack (Barratt-Pugh et al., 2005). This program has several components that have been shown to have success with encouraging parents to read with their children. The first is the book giveaway, which has proved beneficial in the Bookstart program in the UK. Second is the capacity building that takes place at the workshops, equipping parents to read effectively with their children.
On what population does this intervention work best?	All children in the first three years of life and their families. The evaluation did highlight the lack of CALD community representation in the pilot sample.
Where will this intervention work best?	The program was developed and piloted in Western Australia. One of the strengths of the program found by the evaluation is its flexibility which enables wide implementation.
What is required to implement this intervention?	The program's success hangs on the integration of services between local and State authorities. It is recommended that this program only be implemented in sites where this kind of cohesion is attainable.
Resources and contact information	Website: www.better-beginnings.com.au E-mail: betterbeginnings@slwa.wa.gov.au Phone: 08 9427 3166
References	Barratt-Pugh C, Rohl M, Oakley G, and Elderfield J (2005)

Recommended strategy 9.3: Increased rate of parents reading to their children

Name of intervention	Bridging the Gap
Organisation	Australian Centre for Educational Studies, Macquarie University
Brief literature review	<p>Bridging the Gap was a project run by Macquarie University in Sydney. The project aims were to increase student 'at-home' experiences with books, to foster child-family interactions with literacy and to increase links between home and school for Indigenous families.</p> <p>The intervention group was made up of 22 children and their families. The program was implemented over two terms and involved thorough consultation by Aboriginal and Torres Strait Islander education assistants (AEAs). Ten books were selected and recorded to audio-tape by the AEAs or members of the community. Games were also developed along with a 'Stories are Fun' booklet to give the participating children. Each fortnight AEAs met with the participating child's parent/s and gave them a new book, audio-tape and game appropriate for the book. During these meetings AEAs demonstrated a new book-reading technique and game playing procedure that the parents could try with their child (Freeman, 2006).</p>
How and why does this intervention work?	<p>All students improved in all or most of the skills that were assessed, including listening comprehension, picture book sequencing, short-story retell, picture-book retell, phonemic awareness, letter identification and concepts about print (Freeman, 2006). Students reported they read the books on most days and in some cases on weekends and could also retell some if not all of the stories. Parent reading strategies showed evidence of their participation in the program.</p> <p>The success of the program can be attributed to several program elements:</p> <ul style="list-style-type: none"> • Aboriginal and Torres Strait Islander education assistants • Aboriginal and Torres Strait Islander community involvement with recording the tapes • the book giveaway. <p>All of these are evidence-based strategies, according to the literature on Aboriginal and Torres Strait Islander education or parents reading to children.</p>
On what population does this intervention work best?	Aboriginal and Torres Strait Islander children.
Where will this intervention work best?	The program took place in the Western Suburbs of Sydney across 16 different schools. This would suggest that it has some generalisability for metropolitan Aboriginal and Torres Strait Islander populations.
What is required to implement this intervention?	Wide consultation with the Aboriginal and Torres Strait Islander community is essential for the success of this intervention.
Resources and contact information	Information on the project can be attained by contacting the School of Education at Macquarie University. Phone: 02 9850 7111
References	Freeman L (2006)

Recommended strategy 9.4: Increased rate of parents reading to their children

Name of intervention	Reach out and Read (ROR)
Organisation	Reach out and Read (ROR)
Brief literature review	ROR programs make early literacy a standard part of paediatric primary care. Physicians and nurses advise parents that reading aloud is the most important thing that they can do to help their child start school ready to learn. The ROR program comprises of three core elements. At child check ups, clinicians encourage parents to read aloud to their children and give them age-appropriate tips and encouragement for doing so. Those who have difficulty reading themselves are encouraged to invent their own stories and spend time naming objects. Providers give every child between six months and five years a book appropriate to the child's age. The waiting room environments are literacy rich and often have volunteer readers (Klass et al., 2003).
How and why does this intervention work?	<p>Several evaluations have been written on ROR. In a preliminary study parents who received books and guidance were four times more likely to report their children liked being read to. This effect was strongest among families receiving government assistance, that is, low SES families. In another longitudinal study parents in the intervention group showed a tenfold increase in reading to their children at least three times a week. In a study focusing specifically on immigrants, frequent book reading doubled. A study of the use of ROR with culturally and linguistically diverse families showed positive change in attitudes, awareness and practices, even where they were not using books in their appropriate language. Studies that have looked at the intervention group's language skills have found there were significant improvements for both expressive and receptive language (Klass et al. 2003).</p> <p>Several factors contribute to the success of this program. Its design capitalises on the relationship of trust that health care professionals share with parents. Parents are offered encouragement and high-quality instruction and a routine is established by having the intervention delivered at check ups.</p>
On what population does this intervention work best?	The target age group is six months to five years. ROR is designed to be universal but has been shown to have the greatest success with families of low SES. The program has also demonstrated effectiveness among CALD communities.
Where will this intervention work best?	ROR is a program that has enjoyed wide implementation throughout the United States having expanded to have centres in every State. This suggests it will work well in a variety of community settings.
What is required to implement this intervention?	To become part of the ROR program itself a comprehensive application process must be entered into. A Victorian program that is modelled on the ROR framework (Let's Read) found that thorough training must be undergone by the health care professionals before they feel comfortable in delivering the intervention.
Resources and contact information	The program's website www.reachoutandread.org includes information on starting a program.
References	Needleman R, Klass P and Zuckerman B (2002)

11.2 Improved reading, writing and numeracy³

11.2.1 Background

Reading is the ability to convert written text to spoken words; writing is the reverse; together they form the conventional or commonsense definition of literacy (de Lemos, 2002). While literacy can be more broadly defined as including, for example, speaking, listening and critical thinking, the central task of learning to read and write provides a foundation for more advanced skills and knowledge (de Lemos, 2002). The importance of literacy for individual self-worth and social cohesion cannot be overstated. In Western society, it is essential for the development of human potential (National Literacy Trust, www.literacytrust.org.uk, 2006). The term 'numeracy' is less clear cut and definitions vary, even between Australian State education systems (Doig, 2001). An agreed definition is that numeracy involves using mathematics effectively to meet the general demands of life in various contexts, such as home, work and community (AAMT, 1997, cited in Doig, 2001).

The link between a lack of literacy skills and later social exclusion is well established (Let's Read, 2004; Bird and Akerman, 2005). Poor literacy is associated with loss of employment opportunities, lower incomes and consequent disadvantage in terms of housing and health. Families dependent on welfare have higher rates of substance abuse and teenage parenting, and there is a high risk that children from such families will be less ready for school and will experience difficulties with early reading, writing and numeracy themselves. Intervening early to prevent failure in the development of literacy is, therefore, one of the keys to breaking the cycle of disadvantage in low-income families.

Literacy problems in the early years of school are prevalent among Aboriginal children in Victoria. By year two (aged seven to eight), almost half (47 per cent) of Aboriginal pupils are reading at below their expected level, compared with 21 per cent of non-Aboriginal pupils (Victorian Department of Human Services, 2004).

Risk factors for poor reading, writing and numeracy are developmental disability, having a parent with a history of reading difficulties, speaking a language or dialect different from the one in which education is delivered, and lack of exposure to oral and written language in the home. Where these risk factors are present there is a need for preventive intervention (Snow, Burns and Griffin, 1998; Justice and Pullen, 2003).

11.2.2 The evidence base

There is strong evidence to indicate that early literacy interventions should increase children's awareness of ways in which sounds combine into words, expose them to the conventions of written language, build vocabulary and motivate children to succeed. Ideally, children's interactions with language will take place frequently, informally and naturally, with the support of the adults who care for them, but some children also benefit from exposure to repeated, intensive guidance in key literacy concepts such as awareness of sounds and printed text (Justice and Pullen, 2003).

Many studies have shown the home environment can influence literacy and numeracy development (Snow et al., 1998). Parents and carers can help children engage with language and literacy by reading storybooks with them, demonstrating the uses of literacy and numeracy (such as making shopping lists and reading recipes), expressing enthusiasm for reading, sharing songs and nursery rhymes and telling traditional stories.

Professionals can help children develop literacy and numeracy skills by promoting home-based literacy activities and by providing appropriate programs to identify and support 'at-risk' children in the early years at school (Bird and Akerman, 2005). A recent position paper released by the Literacy and Social Inclusion Project in the UK outlined elements of the 'perfect literacy system', which included the following 'vision':

- all parents would talk to their babies and toddlers, sing and encourage their chatter
- all parents and carers would value books and enjoy sharing them with children. They would encourage early writing and drawing. Parents with literacy and numeracy problems would have access to informal family learning opportunities in local venues

³ Please also refer to Section 5.1 Increased rate of parents reading to their children.

- primary schools would identify at-risk children early and provide support via programs delivered by school staff and volunteers such as reading mentors. They would build relationships with parents of at-risk children
- professionals such as preschool and childcare workers and library staff would encourage children to read for pleasure and support parents who have literacy needs (Bird and Akerman, 2005).

The project identified a number of successful approaches to literacy development, starting with home visiting in the early years to connect with parents, and offer ideas on promoting language and literacy development and encourage them to join libraries or other activities. Parents with poor reading, writing and numeracy skills can be introduced gently to family literacy concepts, starting with fun activities such as arts and crafts, and building social support. Program designers should consider ways to schedule and structure the training to involve fathers as well as mothers. Children in the early years of school should have opportunities to choose, borrow and own books, and access to support strategies such as reading buddies. Ideally, these interventions would be integrated in a family and community-focused literacy (and numeracy) strategy, providing opportunities to build partnerships between organisations and support mainstream service delivery (Bird and Akerman, 2005). The interventions recommended in the Best Start catalogue reflect these evidence-based priorities.

11.2.3 Selection of recommended interventions

The interventions reviewed here fall into two broad groups: parent-focused strategies delivered in the home environment or preschool settings and child-focused strategies delivered at school by professionals and volunteers.

One of the best-known parenting interventions for enhancing children's literacy and numeracy is the Home Instruction Program for Preschool Youngsters (HIPPY), which originated in Israel in 1969 and now operates in at least six countries, including four sites in Australia. HIPPY targets parents in the two years before their children start school. It aims to build on parents' strengths and help them create an enriched home environment that will promote the development of skills and confidence. There are four components: a curriculum of 30 weekly activity packets and nine storybooks each year for two years, for parents and children to work through together at home; fortnightly home visits by a parent tutor, who uses role play to model the activities; parent meetings on alternate fortnights to provide social support and reduce isolation; and a professional coordinator who trains and supports the tutors, who are also parents in the program (HIPPY Australia, www.hippyaustralia.org.au, downloaded 14/9/06).

Considering its longevity and wide use, there are relatively few published evaluations of HIPPY. In Australia, HIPPY has been trialed with migrant families from Somalia and South-East Asia, with encouraging results: children who completed the two-year program had literacy outcomes very close to the average for their age, and also had high self-esteem, and parents enjoyed the social support provided by the visits and group meetings. There was, however, a very high attrition rate: half the families offered the full two-year program did not complete it (Gilley, 2003). A multi-site evaluation of HIPPY with two successive cohorts of children in the US had mixed findings: while the first cohort performed better than the comparison group on cognitive skills, classroom adaptation and reading tests, the second cohort performed relatively poorly. The evaluators highlighted the high attrition rate and variations in parent involvement as possible explanations for these findings (Baker, Piotrkowski and Brooks-Gunn, 1999).

A version of HIPPY that is more acceptable to parents in Aboriginal and Torres Strait families has been developed in Weipa, North Queensland, and renamed 'PALS'. Like HIPPY, PALS targets children in the last year before they start school and follows them for two years. Each week a home tutor visits the family and shows the parent how to use the PALS materials, which include a book plus an information kit and other activities, such as games. The materials are then left with the family for one week and parents are encouraged to complete the activities with their children. Each book is presented twice with different activities and games each time. The PALS program was implemented at Echuca, with training provided by the program developers and funding of \$50,000 for materials and to employ two part-time home tutors and a coordinator (Aunty Melba Johnson, personal communication, 30/10/06). The program is currently in its third year at Echuca and has been evaluated using a pre and post-test design, although the reviewer was unable to obtain details.

An intervention widely used in the UK is Storysacks, which are designed to encourage parents to start sharing stories with their children (<http://www.literacytrust.org.uk/socialinclusion/earlyyears/storysackspractice.html>, downloaded 5/9/06). Storysacks are particularly suitable for working with parents who have had little positive experience of books and have also been incorporated into family literacy programs with culturally and linguistically diverse groups.

A Storysack contains a children's book and supporting materials, such as soft toys of the book's main characters, props and scenery that can be used to bring the story to life, a non-fiction book on a linked theme, an audio tape of the book, a language-based game and a short guide to using the Storysack. Parents attend workshops to learn how to share the Storysacks with their children.

Storysacks have been implemented by many different agencies in the UK, including Sure Start sites, libraries, playgroups, health visitors, social workers and speech therapists. Parents, members of women's institutes, prisoners and employees of businesses have been involved in making Storysacks. The Basic Skills Agency funded a National Support Project for Storysacks in 1999 to provide free workshop training events, and the program won an award in 1999 from the European Parents' Association to honour educational innovation in contributing to the role of parents in the learning process (www.basic-skills.co.uk/site/print.php?p=304, downloaded 21/9/06). The literature search did not identify any large-scale evaluations of Storysacks published in peer-reviewed journals. However, Storysacks have been highlighted in recent reviews as an example of good practice in engaging 'at-risk' parents and are an important part of the Read On-Write Away! initiative in Derbyshire, which has been positively evaluated (Davies, 2002, cited in Bird and Akerman, 2005; Taylor, 2005). A website for Storysacks is under construction (see www.storysacks.co.uk).

A number of research-based interventions delivered in home and school or preschool settings were identified in the review. Of these, the best supported are EASE and REAL, and these are both recommended in the Best Start catalogue.

Design of the Early Access to Success in Education (EASE) program was informed by a longitudinal study of the social prerequisites of literacy success in a group of racially diverse, English-speaking children from low-income families in Boston, USA (Snow, Dickinson and Tabors, undated, downloaded from <http://gseweb.harvard.edu/~pild/homeschoolstudy.htm> on 5/9/06). This found that literacy skills were most influenced by rich early language experiences such as discussion during storybook reading, extended conversations during mealtimes and play that included rare words and explanations, and opportunities to discuss things 'beyond the here and now'. Consequently the EASE program has five elements: vocabulary, storybook reading, narrative retellings, letter recognition and sound awareness, and non-fiction text.

The program was trialed over five months in four schools in a middle-class suburb of Minnesota. Children in eight classes received the intervention, while children in three classes were the comparison group. Each topic began with a 30-minute parent lesson at which literacy activities were modelled, followed by an hour of guided parent-child activities that provided a chance to practice the techniques. For each of the three subsequent weeks, teachers sent home a set of scripted activities centred around a particular book. The evaluation found that children in the experimental group had statistically greater gains than control group children on language skills. Improvements were largest among those who completed most activities at home, and among children who scored lowest at pre-test (Jordan, Snow and Porche, 2000). Parent participation rates in EASE were typically fairly high at around 85 per cent (Snow and Jordan, 2001).

The Raising Early Achievement in Literacy (REAL) project was based at the University of Sheffield, UK. In phase one (1995-97), the project team worked with early childhood educators to identify and develop methods and resources, including a video and a professional development manual. In phase two (1997-2002) the program was implemented and evaluated. The program is designed to help parents provide opportunities, recognition, interaction and a role model (ORIM framework) to their children. Parents were offered the opportunity to engage in adult literacy tuition, although few took this up. The REAL project had five components: home visits by preschool teachers, provision of resources (especially books), group activities, special events (such as library visits) and communication by post between teachers and children. Teachers were funded for release one half-day per week to work with families in the program.

A randomised controlled trial of REAL in socially deprived communities in a UK city found high levels of parent participation and understanding among the intervention group (Hannon and Nutbrown, 2001). Pre and post-intervention testing was carried out with a purpose-designed instrument. Intervention children at age five were ahead of controls on literacy measures. The REAL project has given rise to a number of spin-offs based on the ORIM framework, including Peers Early Education Partnership (PEEP), which is also supported by strong evidence from a well-designed study (Evangelou and Sylva, 2003). Foundation PEEP, for three to five year-olds, involves weekly group sessions for parents and children in preschool settings (there are also 'freestanding' groups) that incorporate specific literacy activities, 'circle times' (songs, rhymes, stories and games), phonics activities and an opportunity to borrow books and PEEP packs.

PEEP is delivered by a preschool teacher with support from another teacher and an assistant. Staff training consists of nine weekly sessions of two hours. Families are recruited soon after the birth of their babies (Evangelou, 2004).

Once they are at school, children who are at risk of failure in acquiring reading, writing and numeracy require additional support, to build both their skills and their confidence. One way to achieve this is to train volunteers to deliver an evidence-based reading support program. Two variations on this type of intervention were considered for the Best Start catalogue.

Encouraging results were achieved through the Reading Volunteers project, which tested the effectiveness of using volunteers to support pupils in years two to four (age range seven-10 years) who were at risk of failing as readers. At the pilot school, reading resources were assembled and a core 'kit' of materials for the reading volunteers program was created. This included components of the MULTILIT strategy developed at Macquarie University and a commercially available system for matching students with appropriate texts (Scholastic Lexile Framework). Training and support were provided to volunteers. The model was then tested in three other schools, located in the same district but with diverse populations. Pre and post-testing of children was carried out using several standardised tests and their performance was also compared with data from the Basic Skills Test (completed by all school children in NSW in years three and five). At one school, the 14 targeted pupils progressed an average of 13 months in their literacy skills during a six-month period, and 16 months' gain over a 10-month period. Improvements were registered in all four schools and regardless of students' SES background (Heron and Simpson, 2002). However, the program requires a substantial commitment from volunteer tutors, who work with groups of children in the classroom four times a week over several months.

Reading for Life matches primary school children who are having difficulty learning to read with volunteers from the community who work with them on a one-to-one basis for 45 minutes a week over 10-15 weeks. The volunteers are drawn from among parents, relatives, and the wider school community and particularly from businesses, which choose to release some employees from work for an hour a week in order to build community engagement. Unilever Australasia commissioned the program from a NSW-based charity, Learning Links, in 2003. The semi-structured program incorporates a variety of activities to hold children's interest, focuses on praising effort and building self-esteem as well as enhancing vocabulary and phonemic awareness. Volunteers are provided with training, a resource kit and ongoing support. Two Australian trials have been conducted, involving pre and post-testing of children with standardised tests, but no comparison groups. In both trials substantial gains were made by children on all measures of literacy skills and self esteem (Learning Links, 2004; 2006).

An innovative, whole-school program that draws on the skills of all staff members and parent volunteers is Gateways to Literacy, which has been running at one Darwin primary school since 1995. In a recently completed national numeracy project, researchers from the University of Queensland documented programs throughout Australia that created partnerships between homes, schools and the community to support children's numeracy (Goos et al., 2004). Gateways to Literacy was highlighted as an example of an exemplary, sustained program.

The program was developed by teachers at the school in collaboration with speech pathologists and occupational therapists. The school serves an ethnically diverse population (33 per cent Indigenous, up to 27 different ethnic groups) with many transient pupils. Gateways to Literacy promotes oral language, phonological awareness and sensory-motor skills with an emphasis on movement and language. At school entry, children are assessed and assigned to one of four Gateways groups, depending on their abilities. All available staff (including librarians, ESL teachers and Aboriginal tutors) take part in Gateways activities, which take place four days a week for half an hour. Parents and senior primary students also participate. Learners at risk are assessed and intervention programs designed to meet their needs, individually or in small groups.

Since the program began, the performance of pupils at this school on standard (Territory-wide) tests of literacy and numeracy has improved in comparison to other schools locally and within the whole NT system. Internal testing using a modified version of a standard phonological awareness test found improvements of at least one level in seven out of 10 first year students, five out of six second year students and all third year students. Qualitative data from teacher reports indicate that children's writing and fine motor skills have improved and they are better able to attend, focus and listen in class. Parents reported improvements in children's self esteem and confidence.

11.2.4 Discussion

While family literacy and numeracy interventions typically work well for those who agree to join in and stick with them, they tend to suffer from serious problems with low participation and adherence. Some programs – notably HIPPY – require a great deal of commitment from parents, and this should be considered when deciding whether the program is suitable for a particular target group. The attrition rate from HIPPY is not unusual or surprising. The challenge of maintaining parent participation in programs that set out to build long-term relationships with hard-to-reach families has been acknowledged by evaluators and reviewers (Baker et al., 1999). Lack of full participation by families has been cited as a major reason for the failure of Even Start, a federally supported family literacy program in the US (St Pierre, Ricciuti and Rimdizius, 2005).

Success appears more likely with programs that provide professional support for families via centre-based activities (Snow et al., 1998). Program designers need to address barriers to participation, both practical and emotional, and ensure the curriculum is meaningful and useful. In practical terms, access can be improved by providing child care and transport, and scheduling programs at times when fathers can attend. Staff will also require strong cultural liaison skills and a sensitivity to the fears and low self-esteem of parents who may have experienced school failure (Snow et al., 1998), along with expertise in both adult and child literacy learning (Bird and Akerman, 2005). The content and structure of successful programs should be tailored somewhat to the communities they serve (Snow et al., 1998). Genuine engagement with parents may be enhanced by involving them in the design of programs (such as by addressing literacy issues that they identify are important to them) and acknowledging the diverse literacy and numeracy experiences they are already providing to their children. This helps parents become aware of their role as their children's first teachers and builds confidence to modify and extend those practices (Jay and Rohl, 2005).

It is difficult to engage the most 'at-risk' families and this process can take a great deal of time, which is why an early and gentle start via home visits and enjoyable activities have been incorporated into many interventions (Bird and Akerman, 2005). In the UK, successful programs have acknowledged that:

'... the more disadvantaged or alienated the parent group, the longer it will take to gain their confidence and restore their self esteem in advance of setting up a program of structured learning' (OFSTED, 2000, p. 21).

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www.storysacks.co.uk
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Table 12: Improved reading, writing and numeracy – recommended strategies

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(12.1) EASE	2	Y	Y	Y	
(12.2) Gateways to Literacy	4	N	Y	Y	LOW SES INDIGENOUS CALD
(12.3) Reading for Life	4	Y	Y	Y	
(12.4) REAL	1	Y	Y	Y	LOW SES CALD

Key*Supporting evidence:*

1. Well-supported practice – evaluated with a prospective randomised controlled trial.
2. Supported practice – evaluated with a comparison group and reported in a peer-reviewed publication.
3. Promising practice – evaluated with a comparison group.
4. Acceptable practice – evaluated with an independent assessment of outcomes, but no comparison group (such as pre and post-testing, post-testing only or qualitative methods) or historical comparison group (such as normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (such as formative evaluation, service evaluation conducted by host organisation).

Replication:

Has the intervention been implemented and independently evaluated at more than one site? (yes or no)

Documentation:

Are the content and methods of the intervention well documented (such as provider training courses and user manuals) and standardised to control quality of service delivery? (yes or no)

Theoretical basis:

Is the intervention based upon a well-accepted theory or developed from a continuing body of work in its field? (yes or no)

Cultural reach:

Has the program been trialed with people in disadvantaged communities, Indigenous people or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

Recommended strategy 10.1: Improved reading, writing and numeracy

Name of intervention	Early Access to Success in Education (EASE)
Organisation	Home-School Study, Harvard University, USA
Brief literature review	Design of the Early Access to Success in Education (EASE) program was informed by a longitudinal study of the social prerequisites of literacy success in a group of racially diverse, English-speaking children from low-income families in Boston, USA. This found that literacy skills were most influenced by rich early language experiences such as discussion during storybook reading, extended conversations during mealtimes and play which included rare words and explanations, and opportunities to discuss things 'beyond the here and now'. Consequently the EASE program has five elements: vocabulary, storybook reading, narrative retellings, letter recognition and sound awareness, and non-fiction text. The program was run over five months and each topic began with a 30-minute parent lesson at which literacy activities were modelled, followed by an hour of guided parent-child activities which provided a chance to practice the techniques. For each of the three subsequent weeks, teachers sent home a set of scripted activities centred around a particular book.
How and why does this intervention work?	EASE was evaluated through a controlled trial in four schools. A total of 177 pupils in eight classes received the intervention, and 71 children in three classes were the comparison group. A pre-intervention survey of literacy practices in the home was completed by parents. Pre and post-testing of children's language and emergent literacy skills was conducted using standardised tests. Process measures included attendance at parent sessions and completion of the 15 home literacy activities. Children in the experimental class groups had statistically greater gains than control group children on language skills. Improvements were largest among those who completed most activities at home, and among children who scored lowest at pre-test.
On what population does this intervention work best?	The intervention was trialed on kindergarten students attending daily half-day sessions (it appears these were preschool or school entry year pupils). It is based on a model that was developed in a racially diverse, low-income community.
Where will this intervention work best?	The families that took part in the EASE study were not severely socially disadvantaged and the schools were generally successful, although not performing as well as others in the same district. The authors of the program intended it as a universal strategy for use with all pupils.
What is required to implement this intervention?	Orientation sessions for parents; consent for testing of children; trained parent educators, who work from a scripted outline to ensure consistent delivery across locations; take-home guides; story books that are taken home. Commitment from parents: in this study, 85 per cent of families attended training and 80 per cent of the activities were completed.
Resources and contact information	See references. For more information on the Home-School Study and development of the EASE model, the home page is: http://gseweb.harvard.edu/~pild/homeschoolstudy.htm Complete information on the activities and materials used is available at: http://gseweb.harvard.edu/~pild/projectease.htm
References	Jordan GE, Snow CE and Porche MV (2000) Snow CE and Jordan GE (2001) Downloaded from www.literacytrust.org.uk/Pubs/snow.html on 5/9/2006.

Recommended strategy 10.2: Improved reading, writing and numeracy

Name of intervention	Gateways to Literacy
Organisation	Darwin Primary School (this is a pseudonym)
Brief literature review	Gateways to Literacy is a long-running program developed by teachers at a primary school in Darwin, in collaboration with speech pathologists and occupational therapists. Gateways promotes oral language, phonological awareness and sensory-motor skills with an emphasis on movement and language. At school entry, children are assessed and assigned to one of four Gateways groups, depending on their abilities. All available staff (including librarians, ESL teachers and Aboriginal tutors) take part in Gateways activities, which take place four days a week for half an hour. Parents and senior primary students also participate. Learners at risk are monitored and assessed and intervention programs designed to meet their needs, individually or in small groups. The program is developmentally sequenced and provides children with functional perceptual motor, oral language and phonological awareness skills which are necessary precursors to literacy and numeracy skills.
How and why does this intervention work?	<p>The Gateways to Literacy program was the focus of a case study in a DEST-funded project to identify successful numeracy initiatives, and was cited as an exemplary, sustained program. Researchers from the University of Queensland spent several days at the school in 2003 observing activities, interviewing individuals and focus groups and analysing program documents.</p> <p>The performance of pupils at this school on standard (Territory-wide) tests of literacy and numeracy has improved in comparison to other schools locally and within the whole NT system. Internal testing using a modified version of a standard phonological awareness test found improvements of at least one level in seven out of 10 first-year students, five out of six second-year students and all third-year students. These literacy measures are also relevant for numeracy because they indicate that the vital foundations for numeracy learning are in place. Qualitative data from teacher reports indicate that children's writing and fine motor skills have improved and they are better able to attend, focus and listen in class. Parents report improvements in children's self esteem and confidence.</p>
On what population does this intervention work best?	This is a whole-school program involving all pupils aged five to eight years and all available staff for the half-hour sessions. The program has been running since 1995. The school serves an ethnically diverse population (33 per cent Indigenous, up to 27 different ethnic groups) with many transient pupils.
Where will this intervention work best?	The Gateways to Literacy program was devised to address the significant challenges in developing early literacy and numeracy skills in a population of children who are ethnically diverse and highly mobile. It is designed to help pupils develop understanding and strategies in foundation skills so that they can ultimately take a more effective part in the life of the school.

What is required to implement this intervention?	School personnel including early childhood teachers, the assistant principal, support teachers, Aboriginal education workers, English as a Second Language tutors, special education teachers, teacher assistants are all involved in the program for half an hour each day, four days a week. The librarian and administrative staff also help out when they are available, and parent volunteers are sometimes involved. The program is co-ordinated by an early childhood teacher, who screens pupils on entry and allocates them to Gateways groups. The coordinator and a senior teacher work together to organise the activities, communication, professional development, and assessments. Parents, the school council and local businesses provide support to the school. Student therapy services such as speech pathologists and occupational therapists are consulted as needed.
Resources and contact information	The program is described in some detail in the report by the University of Queensland researchers (see references).
References	Goos M, Lincoln D, Coco A, et al. (2004) Home school and community partnerships to support children's numeracy. Canberra: Department of Education and Training.

Recommended strategy 10.3: Improved reading, writing and numeracy

Name of intervention	Reading for Life
Organisation	Learning Links (a NSW-based charity)
Brief literature review	Reading for Life matches primary school children who are having difficulty learning to read with volunteers from the community who work with them for 45 minutes a week over 10-15 weeks. The volunteers are drawn from among parents, relatives, and the wider school community, including locally-based businesses. Unilever Australasia commissioned the program from a NSW-based charity, Learning Links, in 2003. The semi-structured program incorporates a variety of activities to hold children's interest, focuses on praising effort and building self esteem as well as enhancing vocabulary and phonemic awareness. Volunteers are provided with training, a resource kit and ongoing support. Evaluation is incorporated into the program with pre and post-testing of children on standardised measures.
How and why does this intervention work?	Two Australian trials have been conducted with children in years two to four who were struggling to acquire literacy skills but had adequate English and no significant cognitive, behavioural or mental health problems. Pre and post-testing of children was carried out with a battery of four standardised tests which measured reading accuracy, comprehension and fluency, sight words and vocabulary, phonemic awareness and reading-related self esteem. Testing was administered by educational psychologists employed by Learning Links, which developed the program. Qualitative data were also collected via parent surveys and interviews with children, volunteers and teachers. In both trials substantial gains were made by children on all measures of literacy and self esteem.
On what population does this intervention work best?	Reading for Life is targetted at children who have a below-age-appropriate reading age and begins by testing pupils and identifying those most likely to benefit from the program. Although the program is designed for older children, its designers have stated that it can be modified for pupils in years one and two (age range: six to eight).
Where will this intervention work best?	This intervention is designed to be used in all schools, focusing on those children who have fallen behind in their reading.
What is required to implement this intervention?	To run a program for 10 children, 15 volunteers are required (10 reading buddies and five reserves in case of illness et cetera). In the trials these volunteers were drawn from industry partners with offices in the near vicinity of the schools. The businesses promoted the program to their employees and agreed to release the volunteers from work for approximately one hour per week. Learning Links provides an educational psychologist to coordinate the program, learning packages, resource support, pre and post-testing of the children and training and support of the volunteers, at a total cost of \$5,980 for the 10-15 week program (2007 price). Schools receive a subsidy of \$1,800 from Unilever for their first program.
Resources and contact information	The Reading For Life coordinator in Victoria is Michelle Barca, PO Box 26, Burwood, VIC 3125 Phone: 0407 232 260 Website: www.readingforlife.net.au
References	Learning Links (2006) Learning Links (2004)

Recommended strategy 10.4: Improved reading, writing and numeracy

Name of intervention	Raising Early Achievement in Literacy (REAL)
Organisation	University of Sheffield, UK
Brief literature review	The Raising Early Achievement in Literacy (REAL) project was designed to promote preschool children's literacy by working with parents in the preschool setting and the home. In phase one (1995-97), the project team worked with early childhood educators to identify and develop methods and resources. In phase two (1997-2002) the program was implemented and evaluated. The program is designed to help parents provide opportunities, recognition, interaction and a role model (ORIM framework) to their children. Parents were offered the opportunity to engage in adult literacy tuition, although few took this up. The REAL intervention consisted of: home visits by teachers, provision of resources (especially books), group activities, special events (such as library visits) and communication by post between teachers and children.
How and why does this intervention work?	REAL was evaluated with a randomised controlled trial. All families invited to take part accepted and there was a high participation rate in the intervention: almost three out of four of parents in the intervention group regularly engaged in literacy activities with their children at home. The program resulted in high levels of parental awareness of specific benefits around literacy. Child participants were more likely than controls to mention their parents when asked who they read with. Teachers felt home-visiting was a good feature of the program. Pre and post-intervention testing was carried out with a purpose-designed instrument. Intervention children at age five were ahead of controls on literacy measures.
On what population does this intervention work best?	REAL is aimed at parents in socially deprived communities with low levels of literacy, but participation in adult literacy tuition is not a precondition for involvement. All 11 intervention (pre) schools in the REAL study were in city wards with high levels of multiple deprivation. At each school eight children aged between three and 3.5 years were chosen at random.
Where will this intervention work best?	Preschool and home settings.
What is required to implement this intervention?	Preschool teachers were funded for release one half-day per week to work with families in the REAL program. They received five days of professional development and monthly twilight meetings during term time. Although the core of the program was similar at all schools, there was some tailoring to local community circumstances and teachers' styles.
Resources and contact information	A video and accompanying manual for REAL are available for purchase from the Learning Development and Media Unit, University of Sheffield (video approximately \$75, manual approximately \$100). Website: www.shef.ac.uk/learningmedia/catalogue/eductn.htm
References	Hannon P and Nutbrown C (2003) Downloaded from www.literacytrust.org.uk/Pubs/hannon2.html on 12/9/06 Hannon P and Nutbrown C (2001) Downloaded from www.literacytrust.org.uk/socialinclusion/earlyyears

Recommended strategy 10.5: Improved reading, writing and numeracy

Name of intervention	Peers Early Education Program (PEEP)
Organisation	Oxford University, UK
Brief literature review	Based on the ORIM framework developed at the University of Sheffield (see catalogue entry for REAL), Foundation PEEP (Peers Early Education Program) for three to five-year-olds involved weekly group sessions for parents and children in preschool settings (or 'freestanding' groups) that incorporated literacy activities, circle times (songs, rhymes, stories and games), phonics and an opportunity to borrow books and PEEP packs. Families were recruited soon after the birth of their babies. An outreach version including home visits was available for families unable or unwilling to take part in group sessions.
How and why does this intervention work?	PEEP was evaluated using a quasi-experimental study design involving pre-testing of the intervention and comparison groups at age three, and post-testing of both groups at ages four and five. A pre-intervention interview with parents was conducted to document any pre-existing differences between the groups, which were then controlled for in the final analyses. Pre-intervention interviews also took place with preschool leaders to check for differences in quality of preschool education. Children completed a battery of tests in the areas of vocabulary, language comprehension, non-verbal skills, number concepts, writing and social/emotional development. At both post-test points children in the intervention group showed more improvement than comparison group children in literacy and numeracy, and also had higher self-esteem.
On what population does this intervention work best?	PEEP was designed as a universal program for all children aged birth to five years and their parents. The PEEP evaluation involved 147 preschool children aged three to five years (64 participants, 83 comparison group) in Oxfordshire, UK.
Where will this intervention work best?	Preschool and home settings.
What is required to implement this intervention?	PEEP was delivered by a preschool teacher with support from another teacher and an assistant. Staff training consisted of nine weekly sessions of two hours.
Resources and contact information	The report on the PEEP evaluation (Evangelou and Sylva, 2003) provides details of the principles and methods of the program.
References	Evangelou M and Sylva K (2003)

12. Kindergarten

12.1 Increased participation in kindergarten

12.1.1 Background

There is considerable ambiguity surrounding the terminology, 'kindergarten' and 'preschool' in both the literature and within the Australian educational system. For the purpose of this paper kindergarten refers to centre-based preschool, preceding formal entrance into primary school. The benefit for children attending kindergarten has been a popular research topic for decades now and is therefore an area with a wide literature base. There is general consensus that there are positive social, emotional, cognitive and linguistic effects for children who attend kindergarten (Fleer et al., 2006). The prescription of what makes for an effective kindergarten program and the extent to which the positive outcomes are demonstrated has been the subject of much debate and literature.

Most of this literature however is not based on the long-term effectiveness of programs but rather on highly controlled research studies with small sample size, high attrition and short-term evaluation. Fortunately, there have been a small number of well-designed randomised trials with ongoing evaluation. The Perry Preschool Project, The Carolina Abecedarian Project and the Effective Provision of Preschool Education are three such studies. The selection of recommended strategies was determined by whether the program included elements that were proved beneficial in these seminal studies.

Risk factors for children not attending preschool are low socio-economic status, belonging to a minority group, and developmental disability. Mead (2004) reports the paradox facing disadvantaged children 'those who most need additional learning opportunities are actually the least likely to attend preschool'. This tragedy is accentuated by the fact that poor children have been shown to benefit the most from attending kindergarten (Fantuzzo et al. 2005). Aboriginal and Torres Strait Islander children in many cases fall into this low SES category. In addition to this the strategies and teaching styles in much of the Australian school system are inappropriate for their learning (Freeman, 2006)

Within the Victorian setting kindergarten participation rates are very high (93 per cent, DHS, 2006a) compared with the national average (56.1 per cent ABS, 2004). This can in part be attributed to several government initiatives and programs. Kindergarten for Everyone has been vital in the effort to improve access to kindergarten and has at its core a fee subsidy, support for children with special needs, a building program for new kindergartens and increasing Aboriginal and Torres Strait Islander participation (DHS, 2004). As a disadvantaged minority, Aboriginal and Torres Strait Islander children reap large benefits from participating in kindergarten. The Koori Early Childhood Education Program (KECEP) is a joint initiative by the Victorian Department of Human Services and the Victorian Aboriginal Education Association Inc (VAEAI) aimed at increasing access to kindergarten for Aboriginal and Torres Strait Islander families. This may help to explain the 20 per cent higher rate of participation in Victoria as compared to the national average in 2001 (ABS, 2004 and DHS, 2006). In view of these high participation rates in Victoria, emphasis should be on improving parent and community inclusion especially among disadvantaged groups and improving the quality of programming across kindergartens. This review seeks to highlight the evidence and recommend specific interventions that will provide focus for addressing this.

12.1.2 The evidence base

There is limited research examining the effects of kindergarten participation on student academic achievement that isn't specific to disadvantaged children. Many of the studies that do attempt to be broader in their demographic are limited by small sample size. One study that has had success is the Effective Provision of Preschool Education (EPPE). The central question that the EPPE study sought to answer was 'what is the contribution of preschool to the development of children (after taking into account familial and other background factors)?'. The program ran from January 1997 to April 1999 and involved 3,000 children and 141 kindergarten centres. The sample covered urban, suburban and rural areas and a range of ethnic diversity and SES. Six types of childcare provision were covered including playgroups, local authority or voluntary day nurseries, private day nurseries, nursery schools and integrated centres. Information was collected on the quality of childcare provision and the progress of the children at three distinct time intervals (DfES, 2005).

Some of the major educational findings of the program were that preschool enhances all round development, high-quality preschool programs have intellectual and social/behavioural development benefits, and entry under three years is related to better intellectual development. Disadvantaged children were shown to benefit significantly from high-quality

preschool experiences especially where there is a mixture of SES however they generally attended for shorter periods of time. With regard to the childcare provision itself full-time kindergarten led to no better gains than part-time, however years involved in kindergarten was important. Settings with higher qualified staff showed more advantage as did settings where social/behavioural and educational development were considered equally important. The quality of the home learning environment was shown to be more important than parental background, education, income and occupation (DfES, 2005).

There are several other recommendations highlighted by the literature for successful kindergartens. Mead (2004) suggests that having some form of planned curriculum of activities and goals for young children's learning is of far greater benefit than simply providing day care. She goes on to suggest that the most successful preschool curricula intensely focus on developing children's language use and skills. Mead (2004) also advocates smaller class size and lower student/teacher ratios. Kindergartens should also be safe, nurturing, well resourced environments that promote healthy child development. Currie (2000) suggests that rather than heavily regulate schools and their curricula, policy makers should ensure that programs meet an agreed standard as suggested by the EPPE study and Mead.

It has been shown that high intelligence quotient (IQ) scores are positively correlated with success in many areas of schooling and life (Currie, 2000). Several early education studies conducted in the United States have reported an increase in IQ scores; unfortunately, in all cases the gains made were short-lived (Currie, 2000). One such study was the Perry Preschool Project where on exit from the program IQ scores of the trial group immediately rose. By second grade this effect had become negligible. There were however significant sustained effects in other areas. There was a higher attendance rate through primary school, students were less likely to be placed in special education classes, retention rates were higher and there was a higher grade point average in high school (Gramlich, 1986). The academic benefits therefore may not be explained by increase in IQ but rather on the school readiness that kindergarten provides. Children learn to relate with adults and they begin to enjoy school and consequently go on to achieve (Gramlich, 1986).

Participation in quality early learning experiences has been shown to promote positive outcomes for vulnerable children and has thus been identified as an early intervention by many programs and studies (National Research Council, 2003). As previously mentioned several high-quality studies have been conducted and comprehensively evaluated. The Perry preschool study took place from 1962 through to 1967 and involved 123 children who were assessed to be at high risk of school failure. The sample was randomly assigned to two groups: 58 to the intervention group and 65 to the control group (Schweinhart, year unknown). The intervention involved a half-day preschool every weekday plus a weekly 90-minute home visit for eight months of the year over a two-year period. Teacher student ratios were one to six and all teachers had master's degrees and training in child development. Data were collected annually on both groups between ages three and 11 and again at ages 14, 15, 19, 27 and 40.

Some of the main educational findings of the study were: comparatively better scores in language tests up to age seven, school achievement tests at age nine, 10 and 14 and literacy tests at ages 19 and 27. There was also a 20 per cent higher graduation rate from high school. On top of this, the intervention group demonstrated much better attitudes toward school. The study found similar positive effects on social and economic outcomes. At ages 27 and 40, there were higher employment rates and earnings, more stable dwelling arrangements, more ownership and less reliance on social services. The study also showed a reduced rate of arrest among the intervention group (Schweinhart, 2003).

Another study that aimed to show the effect of kindergarten on children from low SES was the Carolina Abecedarian Project. Of the 111 infants participating in the trial 57 were randomly assigned to receive early intervention in a high-quality childcare setting while the other 54 children made up a non-treated control group. Over the four-year duration of the program the treated children received daily full-day centre-based care with a teacher-child ratio of one to three-six. Each child had an individualised prescription of educational activities that were incorporated to his or her day. These activities were designed to address social, emotional and cognitive development but focussed heavily on language. Individual curriculum packets were delivered every other week along with encouragement for parents to work with their child for 15 minutes per day. The program also included weekly home and classroom visits in the first three years of primary school by a home school resource teacher.

The intervention group demonstrated significantly higher reading achievement scores and remained that way through to 21. They were significantly more likely to be in school at age 21, 40 per cent compared to 20 per cent and 35 per cent had either graduated or were in college or university compared to 14 per cent. As young adults, children who were part of the intervention group were on average two years older than their control group counterparts at the birth of their first child (Campbell, 2002). The two groups were equally likely to be employed at age 21 but the intervention group were significantly more likely to be engaged in skilled jobs, potentially leading to higher earnings and ownership (Advocates for Youth, 2003).

12.1.3 Selection of recommended interventions

The selected strategies all demonstrate one or more elements that have proven beneficial in the abovementioned studies. Attempt has been made to ensure that these strategies are appropriate for the Australian setting. Special consideration has also been given to those strategies that have at their core an attempt to increase Aboriginal and Torres Strait Islander participation in kindergarten. This decision was made in light of the fact that Aboriginal and Torres Strait Islander participation in kindergarten though high in Victoria compared to the national average is still 14 per cent below the Victorian average (DHS, 2006a and DHS, 2006b).

Ensuring a child is ready to commence school is the key to lasting educational achievement according to the Perry Preschool Project and other studies like it. The Early Years is a kindergarten program specifically aimed at promoting school readiness among Aboriginal and Torres Strait Islander children. The program works to ensure that the targeted children enrol, and remain in kindergarten as well as make a successful transition to primary school. As part of the program the participating children are picked up for kindergarten in the morning by the preschool teacher and the Aboriginal and Torres Strait Islander worker. The children then participate in a quality kindergarten program. In order to promote consistency between kindergarten and primary school one of the kindergarten staff would help out at the primary school in the child's first year (www.whatworks.edu.au).

A similar but far more comprehensive early years transition program is operational in South Kempsey. The program runs from 9.00-10.30 once a week for six weeks. Kindergarten and school classes combine for sessions that have a similar routine to the first week of school with reading and play times. All children are tracked and if they are absent a home visit is made. Transport is either provided by parents or the kindergarten. In the last week they stay at the school for morning tea. Information sheets are sent home, photos of kindergarten children are made and all children go home with a 'Sow a seed to read' bag to promote literacy (www.whatworks.edu.au).

Although there does not appear to be a formal evaluation for the Early Years program, all participating children commenced school the following year. The attendance rate of Aboriginal and Torres Strait Islander children during that first year was 86 per cent, which was actually higher than the overall rate. The transportation of the children is considered a key to the program's success. Other elements contributing to the success of the Early Years program were reported to be the presence of Aboriginal and Torres Strait Islander staff or parents, well-established cross cultural relationships and a climate that embraces culture and cultural difference (www.whatworks.edu.au).

The Mobile Preschool Pilot Program (MPPP) is another program targeted at Aboriginal and Torres Strait Islander children and their communities. The pilot ran for two years between 2002 and 2004 but was based on nearly a decade of work by teachers and communities. The MPPP aims to develop and distribute kindergarten programs and materials to remote Indigenous communities that otherwise have no access to kindergarten infrastructure. Early childhood teachers prepare kits of materials and activities designed to stimulate and develop children's pre-literacy and pre-numeracy skills. The kits are stored in plastic boxes known as play-packs each one with a theme. Teachers deliver the play-packs to the communities and introduce them to local teaching support officers, who are generally Aboriginal and Torres Strait Islander people nominated by their community. The teaching support officers then run preschool sessions three to five mornings per week, often with the help of parents (Goos et al., 2004)

Qualitative data were collected in the form of feedback from teachers, teaching support officers and parents. The data suggested that children improved their fine motor skills as well as making cognitive progress. At one site these changes were documented through the use of scrapbooks to keep records of pupils' progress. Parents also commented that on enrolment to primary school their children were more familiar with school-type routines than those who did not have any

preschool training and thus made a smoother transition. The strong partnerships built at the development phase of the program are thought to be essential in ensuring community support for the program that, in turn, is imperative for its success (Goos et al., 2004). MPPP involves a well planned curriculum as recommended by Mead (2004) and focuses on language and literacy as supported by the EPPE study and Abecedarian Project. As well as sharing these elements with the major studies conducted in the United States, MPPP has several elements that have been shown to be necessary for success in Aboriginal and Torres Strait Islander education. These elements are the 'employment of Indigenous staff' and 'positive partnerships between school and community' (Freeman, 2006).

Catch the Future is a Commonwealth-funded initiative developed and facilitated by Monash University. The project was aimed at better understanding how literacy and numeracy are perceived, constructed and enacted by children and adults in both the home and kindergarten (Fleer et al., 2006). The project involved 57 families and four kindergartens located in a low SES region south-east of Melbourne. There were three stages of the project. During stage one, families were invited to take home disposable cameras and photograph children participating in everyday activities both at home and in their community. Families collated their children's photographs and put them in albums. Families and project staff came together to share photos and discuss literacy and numeracy contexts. Stage two of the project involved workshops where kindergarten staff and project staff met to view photographs and discuss what they perceived were the literacy and numeracy practices occurring in the home and were asked to workshop ideas on how they could incorporate what they had seen into the way that they plan and teach. The final stage of the project was the literacy and numeracy assessment of children. Pre and post-testing in literacy and numeracy took place to ascertain whether any gains had been made through the program (Fleer et al., 2006).

One of the main findings of the project was that most teachers underestimate the knowledge and expertise of parents and consider themselves to be the keeper of understanding when it comes to literacy and numeracy (Fleer et al., 2006). Teachers attitudes did not change completely and therefore neither did their willingness to incorporate their new knowledge to their programming. The results of the literacy and numeracy assessments showed that males in particular improved the most in literacy, suggesting that males benefited more from the intervention than females. In addition, the intervention group demonstrated a much better grasp of some aspects of numeracy. Catch the Future is a program that seeks to work with parents to establish good literacy and numeracy practise in the home as advocated in the EPPE study (DfES, 2005). Catch the Future is again a program that has as one of its foci, literacy and language development that has been evidenced as beneficial.

12.1.4 Discussion

There are several cautions to be made regarding large-scale international studies, and in particular those conducted in the US. The Carolina Abecedarian Project as well as the Perry Preschool Project don't provide a realistic framework for implementation into a large-scale population and nor were they designed to. The resource intensive nature of these studies means that complete implementation will never occur. Another problem with these studies is that they haven't been replicated in Australia and therefore any generalisability is only assumed. This is particularly the case when making the leap from minority groups in the US to Aboriginal and Torres Strait Islander peoples in Australia.

One of the challenges facing Australia regarding the implementation of quality kindergarten programs is the lack of programs that have been independently or even internally evaluated. This makes the claims of the program just that: merely claims thus making wide implementation by policy makers difficult. It is therefore recommended that all future programs be evaluated. In this review, attempt has been made to link elements of Australian programs to findings of the more sophisticated international studies. Where programs aimed specifically at Aboriginal and Torres Strait Islander children have been considered wider consultation with Indigenous education has been sought.

With regard to the recommended strategies themselves consideration must be given to the following. The Early Years program in Kempsey South only runs for six weeks. While the program has many benefits, this short period of time runs contrary to the international literature that promotes regular, long-term kindergarten attendance (DfES, 2005; Campbell, 2002) Consideration should be given to making this a component of an existing quality kindergarten. The MPPP while having outstanding community and Aboriginal and Torres Strait Islander involvement did not have highly qualified teachers educating the children as was recommended by the EPPE study (DfES, 2005) and Mead (2004).

Further research is required into whether this is to the detriment of Aboriginal and Torres Strait Islander children. Finally, the Catch the Future project highlighted that teacher's mindsets regarding the importance of the home literacy and numeracy teaching environment weren't completely changed. It is recommended in the study's report and again here that the program continue in order to support those teachers in changing their programming and teaching styles to incorporate the learning taking place at home.

12.1.5 References

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Table 13: Increased participation in kindergarten – recommended strategies

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(10.1) Catch the Future	4	N	Y	Y	LOW SES
(10.2) The Early Years	5	N	N	Y	INDIGENOUS
(10.3) The Mobile Preschool Program	5	N	Y	Y	INDIGENOUS

Key*Supporting evidence:*

1. Well-supported practice – evaluated with a prospective randomised controlled trial.
2. Supported practice – evaluated with a comparison group and reported in a peer-reviewed publication.
3. Promising practice – evaluated with a comparison group.
4. Acceptable practice – evaluated with an independent assessment of outcomes, but no comparison group (such as pre and post-testing, post-testing only or qualitative methods) or historical comparison group (such as normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (such as formative evaluation, service evaluation conducted by host organisation).

Replication:

Has the intervention been implemented and independently evaluated at more than one site? (yes or no)

Documentation:

Are the content and methods of the intervention well documented (such as provider training courses and user manuals) and standardised to control quality of service delivery? (yes or no)

Theoretical basis:

Is the intervention based upon a well-accepted theory or developed from a continuing body of work in its field? (yes or no)

Cultural reach:

Has the program been trialed with people in disadvantaged communities, Indigenous people or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

Recommended strategy 11.1: Increased participation in kindergarten

Name of intervention	Catch the Future
Organisation	Monash University
Brief literature review	Catch the Future is aimed at better understanding how literacy and numeracy are perceived, constructed and enacted by children and adults in both the home and kindergarten. The project involved 57 families and four kindergartens located in a low SES region south-east of Melbourne. There were three stages of the project. During stage one, families were invited to take home disposable cameras and photograph children participating in everyday activities both at home and in their community. Families collated their children's photographs and put them in albums. Families and project staff came together to share photos and discuss literacy and numeracy contexts. Stage two of the project involved workshops where kindergarten staff and project staff met to view photographs and discuss what they perceived were the literacy and numeracy practices occurring in the home and were asked to workshop ideas on how they could incorporate what they had seen into the way that they plan and teach. The final stage of the project was the literacy and numeracy assessment of children. Pre and post-testing in literacy and numeracy took place to ascertain whether any gains had been made through the program.
How and why does this intervention work?	One of the main findings of the project was that most teachers underestimate the knowledge and expertise of parents and consider themselves to be the keeper of understanding when it comes to literacy and numeracy. The results of the literacy and numeracy assessments showed that males in particular improved the most in literacy, suggesting that males benefited more from the intervention than females. In addition, the intervention group demonstrated a much better grasp of some aspects of numeracy.
On what population does this intervention work best?	Children attending their final year of kindergarten before commencing school.
Where will this intervention work best?	The trial was conducted in a low SES suburb of Melbourne. Further research is required to ascertain whether results can be replicated in other low SES communities.
What is required to implement this intervention?	This intervention requires a team of dedicated project workers, willing and receptive teachers and willing parents who are committed to following through on activities.
Resources and contact information	The comprehensive report of this project can be found at; www.dest.gov.au/literacynumeracy/innovativeprojects/fleer_catch_future
References	Fleer M, Ridgeway A, Clarke B, Kennedy A, Robbins J, May W and Surman L (2006)

Recommended strategy 11.2: Increased participation in kindergarten

Name of intervention	The Early Years
Organisation	Government Department of Education, Science and Training
Brief literature review	<p>The Early Years is a kindergarten program specifically aimed at promoting school readiness among Aboriginal and Torres Strait Islander children. The program works to ensure that the targeted children enrol and remain in kindergarten as well as make a successful transition to primary school. As part of the program the participating children are picked up for kindergarten in the morning by the preschool teacher and the Aboriginal and Torres Strait Islander worker. The children then participate in a quality kindergarten program. In order to promote consistency between kindergarten and primary school one of the kindergarten staff would help out at the primary school in the child's first year.</p> <p>A similar but more comprehensive early years transition program is operational in South Kempsey. The program runs from 9.00-10.30 once a week for six weeks. Kindergarten and school classes combine for sessions that have a similar routine to the first week of school with reading and play times. All children are tracked and if they are absent a home visit is made. Transport is either provided by parents or the kindergarten. In the last week they stay at the school for morning tea. Information sheets are sent home, photos of kindergarten children are made and all children go home with a 'Sow a seed to read' bag to promote literacy.</p>
How and why does this intervention work?	Although there does not appear to be a formal evaluation for the Early Years program, all participating children commenced school the following year. The attendance rate of Aboriginal and Torres Strait Islander children during that first year was 86 per cent, which was actually higher than the overall rate. The methods employed to promote school readiness are well-supported by the literature. Strategies to increase access, such as providing transport, are also evidence-based and considered a key to the program's success.
On what population does this intervention work best?	Aboriginal and Torres Strait Islander in the year before entry into formal schooling.
Where will this intervention work best?	The program was developed in rural NSW in a community with a high Aboriginal and Torres Strait Islander population.
What is required to implement this intervention?	One of the keys to success is the relationships that the program establishes and maintains with the Aboriginal and Torres Strait Islander community. Resources are required to provide transport for the children. Employment of an Aboriginal and Torres Strait Islander educational officer and highly committed kindergarten staff are also essential.
Resources and contact information	www.whatworks.edu.au
References	What works (2005) available at www.whatworks.edu.au , downloaded on 15/9/06.

Recommended strategy 11.3: Increased participation in kindergarten

Name of intervention	Mobile Preschool Pilot Program
Organisation	Australian Government through the Department of Education, Science and Training
Brief literature review	The Mobile Preschool Pilot Program (MPPP) is targeted at Aboriginal and Torres Strait Islander children and their communities. The pilot ran for two years between 2002 and 2004 but was based on nearly a decade of work by teachers and communities. The MPPP aimed to develop and distribute kindergarten programs and materials to remote Indigenous communities that otherwise have no access to kindergarten infrastructure. Early childhood teachers prepared kits of materials and activities designed to stimulate and develop children's pre-literacy and pre-numeracy skills. The kits were stored in plastic boxes known as play-packs each one with a theme. Teachers delivered the play-packs to the communities and introduce them to local teaching support officers, who were generally Aboriginal and Torres Strait Islander people nominated by their community. The teaching support officers then ran preschool sessions three to five mornings per week, often with the help of parents.
How and why does this intervention work?	Qualitative data was collected in the form of feedback from teachers, teaching support officers and parents. The data suggested that children improved their fine motor skills as well as making cognitive progress. At one site these changes were documented through the use of scrapbooks to keep records of pupils' progress. Parents also commented that on enrolment to primary school their children were more familiar with school-type routines than those who did not have any preschool training and thus made a smoother transition. MPPP involves a well-planned curriculum as recommended in educational literature and focuses on language and literacy, which is also evidence based. The strong partnerships built at the development phase of the program are thought to be essential in ensuring community support for the program that in turn is imperative for its success.
On what population does this intervention work best?	Indigenous children aged three to five
Where will this intervention work best?	Remote areas communities with high Aboriginal and Torres Strait Islander population.
What is required to implement this intervention?	Provision of Aboriginal Education Worker. Strong community consultation.
Resources and contact information	Merrilyn Goos The University of Queensland E-mail: m.goos@uq.edu.au
References	Goos M, Jolly L and Kostogriz A (2004)

13. Absenteeism

13.1 Reduced absences from primary school

13.1.1 Background

The literature does not provide a consensus regarding an exact definition of non-attendance as absenteeism from school can take a number of forms. It is not uncommon for students to be absent from school from time to time. This can often be attributed to illness or unforeseen circumstances such as an accident. In these cases most students return to school promptly and can explain the reason for their absence (Bonzos, 2005). These instances can be expected and are generally of little concern. However, where a student's absence is persistent, habitual and unexplained this is of grave concern to the school community (Bond, 2004).

Absenteeism (sometimes referred to as school refusal) applies to absences where a parent or carer allows or condones their child's late arrival or non-attendance at school. This is especially common for younger children of primary school age. This is as opposed to concealed truancy where the student attempts to conceal the absenteeism and the parents are often unaware of the child's absence (Bond, 2004). This is often more relevant to older students in high school. When absenteeism involves the parent or carers participation, understanding the motivations for such absences and negotiating appropriate responses by the school is very different to those instances of concealed truancy.

Obviously, attending school everyday is crucially important for a student's education and social skills. Non-attending students are placed in disadvantage both socially and academically. They miss out on critical stages of interaction and development with their peers and at the same time minimise the likelihood of academic progress and success. This can compound issues of low self-esteem, social isolation and dissatisfaction that could well have triggered non-attendance in the first place (Bond, 2004).

Also, prolonged non-attendance can have deleterious effects for the child in later life. A recent Auditor General report stated, 'students who are absent from school are at the greatest risk of dropping out of school early, becoming long-term unemployed, being caught in the poverty trap, depending on welfare and being involved in the justice system' (Auditor General Victoria, 2004).

Absence from school and class clearly affects the absent student, but also impacts on the teacher's ability to plan and present class work in a sequential and organised way. This can affect the progress of all students in the class, not only those missing, and can complicate classroom management (DEET, 1999).

Students' families and communities can also suffer many immediate and long-term consequences as a result of continued absenteeism. For the family it may mean a continuation of the poverty cycle and unemployment and also contribute to family discord, additional stress, encounters with the juvenile justice system and physical or mental illness. For the community it may mean contact with the police, drug abuse, violence, jail time, use of a range of already stretched services and unemployment, welfare dependence, lost tax revenue, illness or homelessness (Bonzos, 2005).

With regard to the state of student absenteeism in Victoria, between 1996 and 2002 the rate of growth of primary school absences was double that of secondary schools, and more than one and a half times that of all schools. Of particular concern is the over-representation of children and young people from minority and low socio-economic backgrounds. Particular at-risk groups identified in the literature include indigenous young people and children from CALD backgrounds (Wheatley, 2001).

13.1.2 The evidence base

Over recent years there has been much investment of time devoted to researching a better understanding of those issues relating to student absenteeism (Bond, 2004). A review of the relevant research and professional literature reveals a plethora of views and possible solutions to tackle student absenteeism. Despite this, a recent review of the literature conducted in the US concluded 'we found no research that definitely answers the question: Do some strategies work better than others? Neither did we find many resources that offer step-by-step guidelines for developing attendance strategies' (Railsback, 2004). It seems that what is available in the literature is a myriad of ideas and theories relating to tackling absenteeism but not a great deal of evidence to reinforce their effectiveness. What is apparent is that raising attendance within schools is not an easy prospect (Reid, 2006).

The interventions that target school absenteeism fall into two broad categories: those that occur within the school and those that are targeted at the family and the broader community.

School based interventions can typically include any or a combination of the following:

- **an inclusive school policy** – it is very important there is a clear understanding of the difference between excused and non-excused attendances by staff, parents and students. The emphasis on the policy should be to change behaviour and not be punitive as there is considerable evidence to suggest that ‘zero tolerance’ policies can have the reverse effect on attendance (Railsback, 2004)
- **attendance register** – there must be effective reporting, recording and monitoring of school attendance figures. This involves accurate reporting of the data so that trends in absenteeism are highlighted and emerging issues can be highlighted (Auditor General, 2004)
- **communicating non-attendance** – it is very important parents and guardians are aware of student absences. This is especially relevant to younger students and may include immediate personal contact with families via telephone when the problem of absenteeism first arises (Railsback, 2004)
- **family involvement** – strategies to increase the school’s successful engagement with the family might include: home visiting, family counselling sessions and newsletters that emphasise the importance of school attendance
- **create a supportive and caring school environment** – evidence suggests children are more likely to remain and achieve in schools where people care about them. Central to this philosophy are the tenants of trust, respect, fairness and equity. The research shows that in schools where there is trust, caring and support, there is higher attendance, higher student performance, and a lower rate of suspensions (Railsback, 2004)
- **anti-bullying programs** – it is frequently reported that if you can successfully tackle school bullying and at the same time create a friendly school culture that you will go a long way in tackling student absenteeism (Child Health Promotion Research Unit, 2006)
- **curriculum changes** – evidence suggests that it is very important that the curriculum steps back from teaching disciplines and moves towards teaching people and individuals (Bond, 2004). It is also important the curriculum reflects cultural inclusiveness and sensitivity to different learning styles, languages and traditions among minority ethnic groups (Withers, 2004).

Away from the school there is also evidence to suggest that engaging the family unit in the life of the school community and linking families to services and community supports are approaches that also offer promise in tackling school absenteeism (Wheatley, 2001). In fact it is widely accepted that the responsibility for ensuring that young people have access to, and are able to fully participate in, school needs to be seen not just as the responsibility of the school itself. Rather it is the shared responsibility of government, the school, the students, their families and the wider community (Wheatley, 2001).

Family and community-based initiatives aim to enhance the connectedness between the school, families and the wider community. Such initiatives may include any or a combination of the following:

- **building family partnerships** – factors include promoting family support for education, parent involvement in the classroom, the ability to help with homework, and strong school/family partnerships
- **walking school bus** – international literature suggests that ‘walking buses’ promote school attendance. This intervention provides an alternative way to encourage primary school children to walk to and from school rather than being driven. Children walk in a group with an adult ‘driver’ at the front and another supervisor at the rear (Victoria University, 2001)
- **breakfast program** – this is an initiative to provide a free school breakfast for students before the school day begins. As well as the obvious health benefits from such an initiative this can also be an effective strategy to tackle school absenteeism.

13.1.3 Selection of recommended interventions

As mentioned in the previous section it seems that there is not a great deal of evidence to reinforce the effectiveness of individual strategies that aim to tackle school absenteeism. In total, nine interventions were selected as possible recommended interventions for this report. Of these nine initiatives, evaluation results were not available for five of them although these were judged to be promising practices.

Interventions that looked to be promising in the absence of a formal evaluation included an initiative at Morwell Park Primary School in Victoria. This program included a mix of a variety of school and family/community-based initiatives. The school based initiatives focused on the accurate collection and reporting of attendance data and using the school newsletter to report these data to families. Other school-based initiatives included phoning home to report absences and home visiting by the school welfare officer as appropriate. Family and community initiatives included the establishment of a breakfast club and a 'walking school bus'. Rewards and competition were another key intervention where classes with the highest attendance rates received 'prizes' such as a free sausage sizzle or extra class excursion. This program has not as yet been evaluated however it does include a thorough blend of both school and family/community initiatives.

Another intervention that looked promising was the use of a primary welfare officer at Mossgiel Park Primary School in Melbourne. Again, a key component of the intervention was the accurate collection of school attendance data. Also the school generated absence letters that were posted out to parents and follow-up telephone calls were made if appropriate. Again, this mix of methods looks promising in tackling school absenteeism but in the absence of evaluation data it remains a promising practice and cannot be recommended for replication elsewhere.

Interestingly, on closer inspection, both the interventions mentioned above at Morwell Park and Mossgiel Park Primary Schools use key messages and interventions from a program developed by the Victorian Department of Education and Training called the 'It's Not OK to Be Away' program (SOFWeb, 2006). This is a Victorian statewide initiative building a school and community approach to the issue of student attendance. The program is designed to change community and student attitudes to school attendance and incorporates both school based and family/community initiatives. Its basis is a resource kit that guides schools in implementing successful processes and procedures that they can adapt to record, monitor, and better encourage improved student attendance. The kit also provides case study examples and strategies that schools can use to engage the support of parents and the community. Parts of this program have been piloted in numerous sites in Victoria with varying degrees of success. Particularly successful elements have been: the use of breakfast programs, walking school buses, monitoring school attendance records, anti-bullying policies and peer mediation.

The 'Its Not OK to Be Away' program is included in the catalogue, as it has been designed with the Victorian school population in mind. Also, the resource kit, which recommends strategies and case studies to increase attendance, is readily available from the Victorian Department of Education and Training. However, it must be emphasised that in order to successfully implement this program support is needed from the school, the students, parents and the community alike.

Another promising practice that does not yet demonstrate specific evaluation results to measure its success are walking school buses. This is an alternative way to encourage primary school children to walk to and from school rather than being driven. More than 58 Victorian councils have implemented walking school bus programs. At least 3,200 primary school students from more than 200 primary schools use the walking school bus to get to school, with the help of 800 volunteers. The 'buses' have become a very positive part of school and community life and offer many health, environmental and safety benefits (Victoria University, 2001). However, evidence is not available to demonstrate that this initiative has had a positive effect on primary school absenteeism.

Yet another promising practice is the early years program currently being trialed at Kempsey South Public School in NSW. This intervention is a community focused six-week program where preschool children are able to learn how to respond in the school situation. It involves inviting parents to attend the school for the first two weeks and then they are encouraged to leave the children for the last four. All children attending are tracked and if a child does not attend a home visit is made. All effort is made, including providing transport, to ensure that everyone can attend the program. This is a particularly important program as over half of the school population comes from the local Dhangatti people. For more information relating to this program go to: www.whatworks.edu.au/4_4_4.htm#transition. Unfortunately this program has not yet undergone a formal evaluation.

A strongly recommended intervention is the Friendly Schools and Families program developed in Western Australia. This school and family-based initiative features a ‘whole-school pack’ that is divided into six handbooks. These handbooks provide a systematic plan of ‘small steps’ for school teams to implement a successful social skill building and bullying reduction program based on the National Safe Schools Framework. The program aims to help school communities enhance their skills, knowledge and capacity to implement an evidence-based whole-school approach to the prevention and reduction of bullying. There is a lot of evidence to support this program and it is based on six years of detailed scientific research involving over 6,000 school students, and their parents and teachers. It is one of the few evidence-based programs that has been rigorously evaluated and found to improve young people’s social skills and to reduce bullying behaviour. The research is recognised nationally and internationally as a successful and comprehensive evidenced-based bullying prevention program (Child Health Promotion Research Unit, 2006). Since bullying is negatively associated with school attendance any intervention that tackles bullying should also go a long way to addressing school absenteeism.

The final highly recommended strategy to address student absenteeism is the ‘Breakfast Club’ established at Coxmoor Primary School in the UK. The Coxmoor Breakfast Club provides breakfast free of charge for all children together with free tea or coffee and slice of toast for attending parents. At the club younger children are taught how to sit and eat at a table (rather than from their laps) and how and when to use a napkin and a knife and fork. In order to fill the gap between the club finishing and school starting the children were also introduced to board and other table games. This very simple and cost-effective intervention has had outstanding results. Since its inception the lateness problem at the school has been reduced dramatically and attendance rates have increased. Also, the levels of detentions and reportings to the head have dropped. Other benefits include the fact that more children are at school rather than roaming the streets, the children have improved their nutritional intake and local parents have become engaged with, and active participants in, the school (Renewal.net, 2003).

Importantly, breakfast clubs are also endorsed in the framework of the ‘It’s Not OK to Be Away’ program.

13.1.4 Discussion

It has been a challenge to find evidence-based strategies that endeavour to tackle school absenteeism in younger children. However, this catalogue has recommended three quite different approaches to tackle this issue.

For an all-encompassing intervention that focuses its attention on the school, its students, their families and the wider community the ‘It’s Not OK to Be Away’ program developed by the Victorian Department of Education and Training is hard to beat. Its strategies are based upon sound theory and are simple to implement with the use of the accompanying kit.

The Friendly Schools and Families program is an evidence-based approach to tackling school bullying that could have a positive effect on school attendance and at the same time create a safer and friendlier school culture. Again, the program includes a resource kit that is readily available to guide schools through implementation of the program.

Finally, the development of a breakfast club is presented as a single intervention that could go a long way in tackling school absenteeism. This is a cost-effective and simple solution that can have many positive outcomes (and not just for absenteeism).

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Table 14: Reduced absences from primary school – recommended strategies

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(11.1) Coxmoor Breakfast Club	5	N	Y	Y	LOW SES
(11.2) Friendly Schools and Families	3	Y	Y	Y	
(11.3) It's Not OK to Be Away	4	Y	Y	Y	

Key*Supporting evidence:*

1. Well-supported practice – evaluated with a prospective randomised controlled trial.
2. Supported practice – evaluated with a comparison group and reported in a peer-reviewed publication.
3. Promising practice – evaluated with a comparison group.
4. Acceptable practice – evaluated with an independent assessment of outcomes, but no comparison group (such as pre and post-testing, post-testing only or qualitative methods) or historical comparison group (such as normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (such as formative evaluation, service evaluation conducted by host organisation).

Replication:

Has the intervention been implemented and independently evaluated at more than one site? (yes or no)

Documentation:

Are the content and methods of the intervention well documented (such as provider training courses and user manuals) and standardised to control quality of service delivery? (yes or no)

Theoretical basis:

Is the intervention based upon a well-accepted theory or developed from a continuing body of work in its field? (yes or no)

Cultural reach:

Has the program been trialed with people in disadvantaged communities, Indigenous people or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

Recommended strategy 12.1: Reduced absences from primary school

Name of intervention	Coxmoor Breakfast Club
Organisation	The Coxmoor Primary School
Brief literature review	The 'Breakfast Club' was provided free of charge for all children together with free tea or coffee and slice of toast for attending parents. The school offered breakfast including orange juice and yoghurt. At the club younger children are taught how to sit and eat at a table (rather than from their laps), how and when to use a napkin and a knife and fork. In order to fill the gap between the club finishing and school starting the children were also introduced to board and other table games. For many children this was their first experience of such play.
How and why does this intervention work?	<p>The results to the club have been dramatic. In January 2004 the school came out as the 25th most improved primary school in UK. The lateness problem was reduced dramatically and attendance rates improved. Also, the levels of detentions and reportings to the head have dropped (although there are no formal records of these).</p> <p>The club has also had the unforeseen effect of supporting and involving the local parents in school activities. This was important in encouraging more parents into the school and developing a more relaxed and friendly relationship with the school and its teachers. As a result of this, some of the parents have become involved in other school activities.</p>
On what population does this intervention work best?	This intervention took place in a small ex-coal-mining and textile town of approximately 25,000 people some twelve miles north of Nottingham in the UK. The town ranks 69th out of 8,414 in the index of multiple deprivation for education, skills and training, partly due to the decline of the town's industrial base.
Where will this intervention work best?	This intervention would work in any primary school but would have the greatest benefit and impact in an area of social deprivation.
What is required to implement this intervention?	The Breakfast Club costs approximately £6,000 annually to run, including kitchen staff. School staff need to be flexible (a total of four staff support and supervise the club together with parent helpers). A community liaison person was also involved who worked with and helped recruit parent helpers.
Resources and contact information	Contact Anne Sheppard E-mail: asgeppard.knm@ntlbusiness.com
References	http://www.renewal.net/Documents/RNET/Case%20Study/Coxmoorbreakfastclub.doc

Recommended strategy 12.2: Reduced absences from primary school

Name of intervention	Friendly Schools and Families
Organisation	Child Health Promotion Research Unit, Edith Cowan University
Brief literature review	This intervention is a 'Friendly Schools and Families Whole-School Pack' which is a resource that aims to help school communities enhance their skills, knowledge and capacity to implement an evidence-based whole-school approach to the prevention and reduction of bullying. It also helps schools to engage families in this process. The whole-school pack is divided into six handbooks to provide a systematic plan of 'small steps' for school teams to implement a successful social skill building and bullying reduction program that also addresses the National Safe Schools Framework. The whole-school pack consists of this school team handbook and CD ROM, a parent's guide and six component handbooks that are full of resources and school case studies outlining how real schools have successfully reduced bullying and created a friendly school community environment.
How and why does this intervention work?	The Friendly Schools and Families program is based on six years of detailed research involving over 6,000 school students, and their parents and teachers. It is one of the few evidence-based programs that has been rigorously evaluated and found to improve young people's social skills and to reduce bullying behaviour. The research has been recognised nationally and internationally as a successful and comprehensive evidenced-based bullying prevention program. It is frequently reported in the literature that school bullying can have an adverse effect on student attendance and therefore any mechanism that successfully addresses bullying can also favourably influence school attendance.
On what population does this intervention work best?	Although this model has been developed in Western Australia its research is based upon an evidence-based program that incorporates shared practice and learning from over two hundred schools from Australia. The program reach is therefore very inclusive.
Where will this intervention work best?	The program guidelines and activities are designed to build on and support strategies to reduce bullying as advocated by the Australian National Safe Schools Framework for both primary and secondary schools.
What is required to implement this intervention?	The program is based upon the 'whole-school pack' that is divided into six handbooks to provide a systematic plan of 'small steps' for school teams to implement a successful social skill building and bullying reduction program that also addresses the National Safe Schools Framework.
Resources and contact information	Contact: Shelley Brown (administration officer and survey service coordinator) on 08 9273 8140.
References	www.friendlyschools.com.au/index.php

Recommended strategy 12.3: Reduced absences from primary school

Name of intervention	It's Not OK to Be Away
Organisation	Department of Education and Training, Victoria.
Brief literature review	It's Not OK to Be Away is a Victorian statewide initiative building a school and community approach to the issue of student attendance. The initiative is designed to change community and student attitudes to school attendance. It requires the support of both parents and the community if student attendance is to be successfully addressed. A resource kit is available that guides schools in implementing successful processes and procedures that they can adopt to record, monitor, and better encourage improved student attendance. The kit also provides case study examples and strategies that schools can use to engage the support of parents and the community, along with general school information about attendance, sample attendance policies, case study examples and strategies, survey templates, presentations, brochures and posters.
How and why does this intervention work?	Parts of this program have been piloted in numerous sites in Victoria with varying degrees of success. Particularly successful elements have been breakfast programs, walking school buses, monitoring school attendance records, anti-bullying policies and peer mediation.
On what population does this intervention work best?	This is a Victorian statewide initiative and is designed to increase school attendance in Victoria.
Where will this intervention work best?	This is a Victorian statewide initiative and is designed to increase school attendance in Victoria. However it is likely that the positive results generated by this program would be generalisable to other states in Australia.
What is required to implement this intervention?	A student attendance support kit is available to all potential participants from the Department of Education and Training. This is an extensive resource that provides information, tools and resources to successfully establish the program. To successfully implement this program support is needed from the school, the students, parents and the community alike.
Resources and contact information	Contact Maria Ruberto on the It's Not OK to Be Away phone line on 03 9291 6543.
References	http://www.sofweb.vic.edu.au/wellbeing/welfare/itsnotoktobeaway.htm

14. Child protection

14.1 Decreased rate of re-notifications to child protection

14.1.1 Background

Following the effective critique of mandatory reporting systems by Harries and Clare (2002):

‘There is no evidence that mandatory reporting increases the quality, quantity or benefits to children who are ‘at risk of harm’ or to families who are vulnerable. Indeed there is some evidence that it does the reverse’

Or as Eagar et al. (2005) put it:

‘Legislation requiring certain professionals to report suspected child abuse has led to increased notification of cases of abuse and neglect nationally. There is, however, no evidence that mandatory reporting legislation in Australia or elsewhere has been effective in protecting children’

There has been a policy focus on examining re-notifications of child abuse. In terms of examining the re-notification statistics, important early work has been conducted in Victoria by Thomas et al. (2004).

14.1.2 The evidence base

A literature search was conducted into relevant programs or interventions into the treatment of child abuse and neglect. The literature search included a number of components:

- building upon the work from the Strategies for Gain report (Eagar et al., 2005), looking for reviews of the evidence base
- review of Best Start publications
- term Analysis (MeSH; Thes Psyc Index Terms)
- plus feedback on search progress from the Victorian Department of Human Services
- use of the COSI model (Bidwell and Jensen, 2003) to explore the Cochrane and Campbell Collaboration Libraries to move out into the web to search for specific programs.

This search found good coverage in the area, finding a number of reviews of the evidence. These included: A Cochrane Review by Barlow et al. (2006) and Meta-Analyses by Lundahl et al. (2006); Geeraert et al. (2004); Skowron and Reinemann (2005); plus a systematic review by Bilukha et al. (2005) and a literature update by Vandeven and Newton (2006); as well as the California Evidence-Based Clearinghouse for Child Welfare (see www.cachildwelfareclearinghouse.org/search/topical-area/1).

Other reviews include those of the Kauffman Best Practices Project recommending three child and parental behavioural interventions for abuse, including parent-child Interaction therapy (PCIT) (Saunders et al., 2004). The Centers for Disease Control and Prevention (CDC) in Atlanta is also undertaking a number of research activities into a number of programs, including Triple P and PCIT; plus examining the issue of program attrition (see National Center for Injury Prevention and Control, 2004).

Additional interventions are described at the: California Evidence-Based Clearinghouse for Child Welfare (see website above); Promising Practices Network (see www.promisingpractices.net/programs_indicator_list.asp?indicatorid=8); Blue Prints for Violence Prevention (see www.colorado.edu/cspv/blueprints/model/overview.html); Thomas et al. (2003); Barlow et al. (2006); Lundahl et al. (2006); and Saunders et al. (2004).

14.1.3 Selection of recommended interventions

Based on this search of the evidence the following strategies are recommended:

- The Incredible Years (Reid et al., 2001)
- Parent – Child Interaction Therapy (PCIT) (Chaffin et al., 2004)
- Triple P – Positive Parenting Program (Sanders et al., 2004)
- Family Connections – Baltimore (DePanfilis and Dubowitz, 2005)
- Healthy Families – Prevent Child Abuse America (Duggan et al., 1999)
- Nurse – Home Visitation – Olds Model (Olds, 2002)
- Early Start NZ (Fergusson et al., 2006)

They represent a cross-section of recognised approaches in the area. Further details about these programs or interventions can be found in the catalogue. Two other home-visiting programs from the review of Vandeven and Newton 2006 are also worthy of mention here. They are:

- Early Start NZ (Fergusson et al., 2005; 2006) – a home-visiting program for disadvantaged families with new infants. The program has four levels based on one-hour sessions – weekly, fortnightly, monthly and three-monthly. (It now also includes the Triple P Parenting program for all parents involved.) It is based on a collaborative approach with the family, developing individualised family plans. Issues addressed are improvement of child health, reduction of child abuse, improvement in parenting skills, supporting parental physical and mental health, encouraging family economic and material wellbeing, encouraging stable and positive partnerships. CADI issues are addressed with the use of Maori workers.
- Family Connections – Baltimore (DePanfilis and Dubowitz 2005) – a home visiting program which targets families at risk of neglect. Home visiting is for a minimum of one hour per week for three months. It has a home-based, family-centred model of practice. Following the principles of community outreach, individualised family assessment, tailored interventions, helping alliance, empowerment approaches, strengths perspective, cultural competence, developmental appropriateness and outcome-driven service plans. It includes the components of emergency assistance, home-based family intervention, service coordination and multi-family supportive recreational activities. It is carried out by social work interns.

14.1.4 Discussion

In line with the Best Start indicator on re-notification, this examination of the evidence, places a premium on program or intervention outcomes, which reduce the number of actual injuries or hospitalisations, or notifications/re-notifications of abuse to official sources or as measured by independent observers. The Cochrane Review by Barlow et al. (2006) into parenting programs for the treatment of physical child abuse and neglect found:

- ‘studies that have incorporated measures of the incidence of physical abuse (such as reports of child abuse, number of injuries) provide no evidence to support the use of parenting programs to treat physical abuse’ (page 9)
- limited evidence that some parenting programs are effective on some outcomes for physically abusive parents
- limited evidence that programs including components that target parental anger and stress may be more effective than those that do not
- few studies of neglect
- potential value of approaches based on cognitive behaviour therapy and child-parent interaction therapy
- ‘parenting programs, particularly those that are group-based, are increasingly being recognised as being a cost-effective way of intervening to improve parenting (NICE, 2005) and to provide parents with access to other sources of peer-based support’ (page 9)

- ‘the findings of this review are suggestive that parenting programs may improve some of the outcomes associated with physically abusive parenting, but the quality of much of the included research failed to meet acceptable standards’ (page 10). Further research needs to improve on the use of standard outcome measures, the use of objective measures like child protection registers with larger sample sizes and to explore what are the key components of effective programs, improve compliance.

These findings are backed up by Lundahl et al. (2006) who found in their meta-analysis of parent training programs:

- ‘none of the studies the of long-term impact of parent training resulted in reducing actual abuse’ (page 258)
- ‘our results indicate that parent training is effective in reducing the risk that a parent will physically abuse, verbally abuse, or neglect a child. Immediately following parent training, parents reported significant and meaningful changes in attitudes and emotions linked to abuse and observed behaviours and substantiated abuse’ (page 258)
- success factors included: home visitor; combination of office and home settings; also including an individualised component; use of behavioural and non-behavioural approaches to change parental child rearing practices and attitudes.

Geeraert et al. (2004) conducted a meta-analysis of evaluations of early prevention programs for families with young children (up to three years old) at risk for physical abuse and neglect. Programs included: some home visits; prenatal/post-natal starting points; professional/non professional involvement; and were aimed at supporting the parent, education and skills training, parent-child interactions, child development and enhancing social networks). They found an overall positive effect (small and modest). ‘The study demonstrated a significant decrease in the manifestation of abusive and neglectful acts and a significant risk reduction in factors such as child functioning, parent-child interaction, parent functioning, family functioning, and context characteristics’ (abstract) Geeraert et al. (2004) also notes that direct outcome measures of abuse may be unreliable and arbitrary as official reports may not record the actual rate of child abuse and as ‘abuse is a relatively rare event in the population, so large numbers of participants are therefore needed to demonstrate significant changes in its rate of occurrence’ (page 287). Geeraert et al. (2004) also talks about the potential surveillance effect in studies where families have frequent contacts with social workers who are more likely to detect abuse. Geeraert et al. (2004) also calls for more process level measures in future evaluation studies (for example, examining home visits versus group sessions).

Skowron and Reinemann (2005) in their meta-analysis of the effectiveness of psychological interventions for child abuse and neglect found, ‘treatment effects are weakest when linked to behavioural observations of family and strongest with parent self-report attitudes and behaviours’ (abstract). No variation was found for behavioural versus non-behavioural interventions, group, individual or family modalities and voluntary or mandated treatment. Skowron and Reinemann (2005) also called for better-designed follow-up studies, with more information on the severity and type of abuse; the need for more research on moderating variables and multidimensional assessments such as stages of change; commitment to engage and quality of the therapeutic alliance as well as treatment drop-out and recidivism.

Bilukha et al. (2005) in their systematic review into home visitation for preventing violence in high risk populations found ‘strong evidence that early childhood home visitation programs are effective in preventing child maltreatment, reducing reported maltreatment by approximately 39 per cent. Programs delivered by professional visitors (nurses or mental health workers) seem to yield greater effects than those delivered by para-professionals’ (page 21). They used direct outcome measures like child abuse reports. Bilukha et al. (2005) also commented on the need to better examine program content, organisation, personnel intensity and delivery.

The common elements from these five reviews (Barlow et al., 2006, Lundahl et al., 2006, Geeraert et al., 2004, Skowron and Reinemann, 2005 and Bilukha et al., 2005) can be broken down into practice and research implications. These implications are highlighted in the Table 15 below:

Table 15: The practice and research implications of this review

Practice implications:

Examining the evidence for programs that effect the direct outcome measures of abuse (child protection registers, injuries or hospitalisations, independent observation), there is support for home-visiting programs (Bilukha et al. 2005; Geeraert et al., 2004) and psychological interventions (Skowron and Reinemann, 2005) and some support for parental training and education programs (Barlow et al., 2006, Lundahl et al., 2006, Geeraert et al., 2004).

Research implications:

Studies with a better examination of process-level variables (such as program content, personnel, intensity) and longer follow-up periods are required (Barlow et al., 2006, Geeraert et al., 2004, Skowron and Reinemann 2005 and Bilukha et al., 2005).

Other noteworthy papers were by:

- Zubrick et al. (2005) which examined universally delivered Triple P in Western Australia
- Fergusson et al. (2006) who found that nurse home visiting produced child related outcomes in the absence of parent or family-related outcomes
- Duggan et al. (2004) which provides a good example of how to use hospitalisation data and substantiated reports to child protection as outcome measures
- Windham et al. (2004) explored parent and child characteristics in the first three years of life for families at risk for child abuse. They found maternal depression and partner violence was associated with severe child physical assault. There was no association with household income level.

Two additional references were found, which may be useful as alternative approaches. First, there was a paper by Garbarino et al. (2001) on children growing up in violent urban neighbourhoods. And second, there was a paper by Wright (2004) describing a community development approach to the issue of child protection in the United Kingdom.

Finally, there is there is also a Cochrane Review in development examining cognitive-behavioural interventions for sexually-abused children (see Macdonald et al., 2004). A Campbell Collaboration review is also underway into the best screening tools to predict child maltreatment in the community and the best risk-assessment tools to predict occurrence and re-occurrence of maltreatment (Shlonsky, 2005).

14.1.5 References

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Table 16: Decreased rate of re-notifications to child protection – recommended strategies

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(13.1) The Incredible Years	1	Y	Y	Y	CALD
(13.2) PCIT	1	Y	Y	Y	CALD
(13.3) Triple P	1	Y	Y	Y	INDIGENOUS CALD
(13.4) Healthy Families	1	Y	Y	Y	LOW SES
(13.5) Nurse home visitations	1	Y	Y	Y	LOW SES

Key*Supporting evidence:*

1. Well-supported practice – evaluated with a prospective randomised controlled trial.
2. Supported practice – evaluated with a comparison group and reported in a peer-reviewed publication.
3. Promising practice – evaluated with a comparison group.
4. Acceptable practice – evaluated with an independent assessment of outcomes, but no comparison group (such as pre and post-testing, post-testing only or qualitative methods) or historical comparison group (such as normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (such as formative evaluation, service evaluation conducted by host organisation).

Replication:

Has the intervention been implemented and independently evaluated at more than one site? (yes or no)

Documentation:

Are the content and methods of the intervention well documented (such as provider training courses and user manuals) and standardised to control quality of service delivery? (yes or no)

Theoretical basis:

Is the intervention based upon a well-accepted theory or developed from a continuing body of work in its field? (yes or no)

Cultural reach:

Has the program been trialed with people in disadvantaged communities, Indigenous people or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

Recommended strategy 13.1: Decrease rate of re-notifications to child protection

Name of intervention	The Incredible Years
Organisation	The Incredible Years, Seattle Washington (Company) and Parenting Clinic, University of Washington
Brief literature review	This group-based Parent Training Program involves parents in one-two hours of training sessions per week for 12-14 weeks. The education addresses parenting issues such as negative affect (emotions), negative comments, poor parental bonding and ineffective limit-setting.
How and why does this intervention work?	The evidence base supports the use of parent training and education programs (see www.cachildwelfareclearinghouse.org). The research study (random allocation to treatment) cited here involves 634 low-income families, across 23 centres in the USA with CALD populations. In terms of experimental design, the control group was a control condition (regular Head Start Program) but without parent training. The outcome measures were home observation of parent-child behaviour, parental reports and child behaviour problems and satisfaction with the program. Positive improvements on all these measures were found at 12 months post-program.
On what population does this intervention work best?	The Incredible Years is aimed at parents of children aged four to eight years, particularly low-income or CALD families.
Where will this intervention work best?	Parent education and training can be delivered in ambulatory health care settings (community or outpatient clinics) or through schools.
What is required to implement this intervention?	The program is delivered by group leaders and mentors, who may come from a variety of disciplines including nursing, psychology, psychiatry, social work, and education. Ideally, the group leaders will have Masters or Doctoral Degrees in their professions and a strong background in child development, counselling and clinical experience with families. Specific training in the use of the program is not required, but is highly recommended. If any research projects are planned using the program, certification is required.
Resources and contact information	www.incredibleyears.com www.son.washington.edu/centers/parenting-clinic
References	www.cachildwelfareclearinghouse.org Reid et al. (2001)

Recommended strategy 13.2: Decrease rate of re-notifications to child protection

Name of intervention	Parent-Child Interaction Therapy (PCIT)
Organisation	A therapy originally developed by Dr. Sheila Eyberg.
Brief literature review	This parent training program involves either individual or group sessions. Parents attend a one to two hour sessions per week, to a total of 10-20 sessions. The program aims to correct ineffective parenting styles (permissive parenting, authoritarian parenting and overly harsh parenting) and encourage an authoritative approach to parenting.
How and why does this intervention work?	The evidence base supports the use of psychological interventions (see www.cachildwelfareclearinghouse.org). The research study (random allocation to treatment) cited here involves 110 abusive parents with low incomes, significant levels of depression, substance abuse and antisocial behaviour. In terms of experimental design, the control group was a standard community-based parent group. The outcome measure was physical abuse re-reports. At approximately two to three years post-treatment, only 20 per cent of parents in the treatment group had a re-report of physical abuse on a statewide database. This was compared to half of the control group (this difference was statistically significant using survival analysis).
On what population does this intervention work best?	The intervention is designed for families in which child abuse has been confirmed. It is targeted at parents of children aged four to 12 years.
Where will this intervention work best?	Parent education and training and therapy can be delivered in ambulatory health care settings (community or outpatient clinics).
What is required to implement this intervention?	The intervention is designed to be delivered by child therapists, treatment researchers, and therapy trainers at the Masters or Doctoral level.
Resources and contact information	www.pcit.org University of Florida, Department of Clinical and Health Psychology http://devbehavpeds.ouhsc.edu/parentchildinteraction.asp Child Study Center, University of Oklahoma Health Sciences Center http://www.pcittraining.tv/about.asp UC Davis CAARE Diagnostic and Treatment Center UC Davis Children's Hospital, Sacramento http://www.griffith.edu.au/centre/gphrc/Research/parentchild.htm Family Interaction Program (FIP), Griffith University
References	www.cachildwelfareclearinghouse.org Chaffin et al. (2004)

Recommended strategy 13.3: Decrease rate of re-notifications to child protection

Name of intervention	Triple P Positive Parenting Program
Organisation	Parenting and Family Support Centre, University of Queensland and Triple P International Pty Ltd
Brief literature review	This is a group-based parent training program with sessions of up to one hour. There are various levels of intervention. At levels two-five, the intervention is delivered over a period of two to 12 weeks and addresses issues such as attribution and anger management.
How and why does this intervention work?	The evidence base supports the use of parent training and education programs (see www.cachildwelfareclearinghouse.org). The research study (random allocation to treatment) cited here involves 98 families, parents concerned about their anger. In terms of experimental design, the control group was a standard group behavioural family intervention versus the treatment condition of an enhanced group behavioural intervention. The outcome measures were observed and parent reported disruptive child behaviour, parent reported dysfunctional parenting, self-efficacy, distress, relationship conflict and satisfaction with the program. Positive improvements on all these measures were found at six months post-program.
On what population does this intervention work best?	This intervention is aimed at parents concerned about their anger management. It has a series of levels, starting with universal. Higher levels focus in on families in which there are confirmed problems. It is suitable for families with children aged up to 18 years.
Where will this intervention work best?	Parent education and training is delivered in ambulatory health care settings (community or outpatient clinics).
What is required to implement this intervention?	Practitioners running Triple P are required to have completed an approved training course and be an accredited provider. The paper by Sanders 2002 provides further details about the program.
Resources and contact information	www1.triplep.net/
References	www.cachildwelfareclearinghouse.org Sanders et al. (2004) Sanders (2002)

Recommended strategy 13.4: Decrease rate of re-notifications to child protection

Name of intervention	Healthy Families – Prevent Child Abuse America
Organisation	Healthy Families America and Prevention Child Abuse America (non-profit organisations with a national reach. Head office in Chicago, Illinois.
Brief literature review	This program delivered an average of 13 home visits in the first year by trained para-professionals. It involves early identification of at-risk families before their day-to-day stresses, isolation, and lack of parenting knowledge and good role models give rise to abusive and neglectful parenting behaviours. Home visitors work to build trust and focus on family strengths to reduce environmental risk and prevent child abuse and neglect.
How and why does this intervention work?	The evidence base supports the use of home visiting (see Vandeven and Newton, 2006). The research study (random allocation to treatment) cited here involves 730 at-risk families with newborn infants, across six sites in Hawaii. In terms of experimental design, the control group received no home visits but were followed up at year one and year two. The outcome measures were links to paediatric medical care, parenting efficacy, stress, use of non-violent discipline, decreasing injury from partner violence. No significant results for reports or hospitalisation rates were found.
On what population does this intervention work best?	At-risk families with newborn infants.
Where will this intervention work best?	This intervention is delivered in the home.
What is required to implement this intervention?	Team of support workers with suitable training.
Resources and contact information	www.healthyfamiliesamerica.org/home/index.shtml
References	Vandeven and Newton (2006) Duggan et al. (1999)

Recommended strategy 13.5: Decrease rate of re-notifications to child protection

Name of intervention	Nurse-home visitation – Olds model
Organisation	Nurse Family Partnership (non-profit organisation in Denver, Colorado)
Brief literature review	Home visits are provided to at-risk families, starting in pregnancy and continuing to the child's second birthday. The number of visits varies according to each client's needs. Visits last one-1.5 hours. The home visitors are nurses, who were considered most suitable for the role because of their formal training in women's health and children's health and their competence in managing the complex clinical situations often presented by at-risk families.
How and why does this intervention work?	The evidence base supports the use of home visiting (see Vandeven and Newton, 2006). The research paper cited here provides a summary of two major follow-up trials (random allocation to treatment) involving 970 women. In terms of experimental design, the control group received usual care. The two main outcome measures were parental care (such as injuries or events associated with abuse or neglect) and parental lifestyle (such as fewer pregnancies, greater workforce participation, and less welfare dependency). Overall, the program did demonstrate improvements or reductions in these areas.
On what population does this intervention work best?	This intervention is designed for low-income families who are at risk of child abuse and neglect. It is particularly targeted at first-time parents and begins with antenatal care.
Where will this intervention work best?	Visits are delivered in the home setting.
What is required to implement this intervention?	Team of nurse visitors.
Resources and contact information	www.nursefamilypartnership.org/index.cfm?fuseaction=home
References	Vandeven and Newton (2006) Olds (2002)

15. Injury

15.1 Decreased rate of unintentional injury

15.1.1 Background

Injury in childhood is the most frequent cause of death for Australian children aged one to 14 years and the second most common reason for admission to hospital. Around 300 children die each year due to accidental injuries (AIHW, 2005). Most of these deaths are caused through transport accidents, drowning and falls, while most hospitalisations are due to falls, cutting, choking, dog bites, transport accidents, poisoning and burns or scalds.

Boys are more likely than girls to be killed or seriously injured in an accident. There is a disproportionately high risk of injury leading to death or hospitalisation among children from low socio-economic backgrounds and Indigenous Australian children compared with other Australian children. Also at greater risk are children of single parents, those whose mothers are young or poorly educated, children who are part of large families or families in which there is parental drug or alcohol abuse and children in poor housing (AIHW, 2005). The type of injury risk varies according to a child's age. For example, medicinal poisoning, near-drowning and burns/scalds are concentrated in early childhood, while children in the early years of school are more likely to be injured in falls or pedestrian accidents.

The safety of babies and toddlers depends largely on their home and childcare environments and the attitudes and behaviours of the adults who care for them regularly. Once children start school, injury risks can be reduced by providing adequate supervision, appropriate safe role models and training to instil self-protective attitudes and behaviours (Mercy et al., 2003).

15.1.2 The evidence base

The interventions selected for the Best Start catalogue focus on strategies to promote the use of proven safety measures, namely:

- bicycle helmets (Thompson et al., 2002; Towner et al., 2001)
- child-resistant closures on medicines and other poisons (O'Connor, 2000, 2001; Ozanne-Smith et al., 2002; Towner et al., 2001)
- child restraints in vehicles (Torpey et al., 1991; Towner et al., 2001; Weber, 2000)
- pool fencing (Thompson and Rivara, 2004; Watson et al., 2000)
- safe tap water temperatures – less than 50 degrees Celsius (Cassell et al., 2004; NSW Health, 1998)
- smoke alarms (Cassell et al., 2004)
- traffic calming including area-wide measures, speed humps and reduced speed limits (Bunn et al., 2004; Jones, Lyons, John and Palmer, 2005; Tester et al., 2004; Towner et al., 2001).

High-quality studies have demonstrated where these measures are adopted, child injury rates are reduced. The evidence on getting people to adopt these measures and reduce hazards is mixed, however. Where possible, the strategies recommended for this indicator are supported by evidence of direct impacts on injury rates. In some cases, the evaluation studies reported intermediate outcomes such as greater knowledge, better attitudes or adoption of safe practices. According to well-established theories (such as Theory of Planned Behavior; Ajzen, 1985), changes in knowledge and attitudes should ultimately lead to behaviour change. However, studies reporting increases in self-reported home safety practices do need to be treated with caution, since there is reason to suspect that such self-reports are not necessarily good predictors of unintentional injuries among children (Haggood, Kendrick and Marsh, 2001). Strategies supported by evidence of indirect impacts have been included where they conform to evidence-based principles of good practice (such as they are replications of previously successful models) and target populations of high priority to the Best Start program.

15.1.3 Selection of recommended interventions

Home visiting by professionals (such as nurses and other health visitors) is a well-established strategy for reducing child injuries in the home environment, according to several systematic reviews of controlled trials (Roberts, Kramer and Suissa, 1996; Lagerberg, 2000; Centre for Reviews and Dissemination, 2004). This strategy operates by making parents aware of risks and giving specific guidance on protective behaviours, such as hazard reduction, supervision and first aid. The most

successful programs involved professional personnel (research assistants, nurses and other health visitors) and used a systematic approach to assessing and modifying specific hazards in the home (such as Olds et al., 1999).

A recent study in large cities in four Canadian provinces found that three years after participating in the trial, children in the intervention group were still significantly less likely to require medical treatment for injuries than children in the control group (King et al., 2005, 2001). Both groups received a home visit as part of the original trial, and the intervention group received specific feedback on the findings of the safety inspection with detailed information about addressing deficiencies. Three years later, participants in the intervention were more likely than control group participants to report that the home visit had changed their knowledge, attitudes and practices regarding home safety (63 per cent cf. 43 per cent).

Another strategy supported by systematic reviews of high-quality trials is road safety education in the early years of schooling (Duperrex, Roberts and Bunn, 2004; Towner et al., 2001). Road safety programs aim to instil safe attitudes and behaviours in children. There is a multitude of named programs available. In Victoria, these include RoadSmart and Traffic Safety Storybooks (VicRoads), SchoolSafe (Kidsafe), Street Scene (RACV) and the Traffic Safety Education Package for Preps (Arrive Alive). Very few high-quality evaluation studies of individual programs have been published, however.

One Australian program supported by evaluation evidence is the Child Pedestrian Injury Prevention Program (CPIPP), which was trialed in Perth from 1995 (Burns, Cross, Stevenson and Kenaston, 1998). CPIPP combined school-based education for students in years two to four (age range seven to 10 years), their parents, teachers and community members with various modifications in the road environment. This is an interesting approach. Traffic calming is known to reduce traffic accident injuries among children (Bunn et al., 2004; Jones et al., 2005; Tester et al., 2004; Towner et al., 2001), so it should, in theory, enhance the effectiveness of a road safety education program. The aim of CPIPP was to improve children's safety behaviours and reduce their exposure to hazards on the roads. At the end of the first year of the three-year program, children in the high-intervention group (school and community-based strategies and environmental modifications) had significantly better knowledge and behaviours, while those in the moderate intervention group (school-based strategies only) had better behaviours than the comparison group (Burns et al., 1998). The CPIPP design has since been adapted for preschool-aged children and an evaluation of the new version, Walk With Your Kids, is nearing completion. The new program is based on international research on child development and road safety. It focuses on parents, providing practical activities to help them teach their children to use roads more safely (Marg Hall, Edith Cowan University, personal communication 10/10/06; see Child Health Promotion Research Unit, Edith Cowan University, <http://chpru.ecu.edu.au>, for details).

Home visiting and child road safety training interventions can be implemented in isolation, but have often been used within the context of community development programs that employ a variety of strategies aimed at promoting safe practices and the use of safety equipment. A prominent example of a community-based injury prevention program is the international WHO-accredited Safe Community model (www.phs.ki.se/csp/who_publications_en.htm; Hanson, Vardon and Lloyd, 2002). The goals for each Safe Community site are chosen according to an analysis of the most common causes of preventable injury in the region. Although children are not a specific focus of the program, child injuries are often targeted along with several other injury reduction goals that may be relevant to children, such as traffic accidents. Local action groups, each with community and service provider representatives and a facilitator, are set up to address each of the targets. A participatory action research paradigm is applied, in which lay (non-expert) members of the community are 'empowered' to take an active part in defining the problem, designing the solution, implementing change and evaluating outcomes (Lindqvist, Timpka and Schelp, 1996).

A series of evaluation studies conducted in Sweden and Norway provided strong support for the effectiveness of this model in reducing the severity and, to a lesser extent, incidence of injuries. For example, in Motala, Sweden, the incidence of serious injuries requiring hospital admission decreased by 41 per cent in the year after implementation of the program, and length of stay (number of days) fell 39 per cent, although the number of less serious injuries increased by 16 per cent (Lindqvist, Timpka, Schelp and Ahlgren, 1998). During the same period, the relative risk for moderate injuries from traffic accidents was reduced by almost half, although the risk for severe or fatal injuries did not change (Lindqvist, Timpka and Schelp, 2001). A follow-up study nine years after the program was introduced in Falun found that at the five-year point, there was a significant reduction in the rates of outpatient and inpatient treatment for injuries. These gains were maintained at the seven-year mark, but appeared to wane in the last two years. Effects were observed only for targeted injuries and appeared to neutralise an upward trend in the county and the rest of Sweden (Bjerre and Schelp, 2000). In the Norwegian town of Harstad the program resulted in a 51.5 per cent decrease in burns injuries to children under five years of age, while rates in

the comparison city rose slightly (Ytterstad, Smith and Coggan, 1998). Effects on traffic injury reduction were also observed, although these findings were less conclusive (Ytterstad and Wasmuth, 1995).

Although the WHO Safe Community model has been implemented widely in many countries, relatively few high-quality evaluation studies have been published (Ozanne-Smith, Day, Stathakis and Sherrard, 2002). The program was replicated in Waitakere, an urban community west of Auckland, New Zealand and this is the model recommended in the catalogue. Child injuries were one of seven priority areas identified in the consultation and development phase of the three-year pilot study. The rate of injury hospitalisations for children fell significantly in Waitakere following the intervention and rose elsewhere in Auckland. Interviews with residents showed they had adopted child safety practices in the home, such as fire guards and stair gates, and were more likely to have appropriate child restraints in vehicles than those in the control community (Coggan, Patterson, Brewin, Hooper and Robinson, 2000).

However, published evaluations of two pilot sites in Victoria illustrate the difficulties of replicating the program in other settings. The Latrobe Valley study (Day, Ozanne-Smith, Cassell and Li, 2001) did not target children specifically, although home and playground safety were two of the four priority areas. Interventions aimed to increase public awareness of hazards and prevention measures and implement environmental changes to reduce injury risks. Following the intervention, surveys showed small increases in residents' knowledge of safety programs and moderate increases in home safety knowledge and action, while hospital presentation rates for targeted injuries fell steadily over the four-year period of the trial. These changes could not necessarily be attributed to the intervention, however, because the study lacked a comparison community. A formative evaluation of the Safe Living Program included comparison of injury hospitalisation rates in the intervention area (Bulla) and a neighbouring shire (Melton) (Ozanne-Smith et al., 2002). Despite the focus on high risk groups, including children, the program did not result in significant changes in rates of deaths or hospitalisations from injury at the local hospital, length of hospital stay or emergency department presentations. The project did achieve substantial 'reach' in raising community awareness, and there were impacts on some risk factors including child restraint use, bicycle use and school safety.

One innovative variation on the WHO Safe Community model was the 'Safe Dreaming Trails Links Schools' project, described in a recent review of injury prevention programs designed by and for Aboriginal communities (Clapham, 2004). The project linked a health service with children from an outer suburban primary school in a working class suburb of Adelaide. It incorporated the core components of the Safe Community program, but in addition to providing information about injury prevention and hazard reduction, it fostered cross-cultural understanding as a way of working towards reconciliation. A Kaurna elder introduced school children to Indigenous safe community practices through a dreaming story and a visit to a local site of significant spiritual value. Children were taught to identify injury hazards at their school and also became 'street detectives' during a 'spot the hazard' walk in the local area. They wrote letters to council requesting repairs to a dangerous, cracked pavement. This walk became a 'safe dreaming trail to school'. No published evaluation of the project has been identified in searches. The project was documented in a CD-ROM and included as a case study in the National Aboriginal and Torres Strait Islander Safety Promotion Strategy (National Public Health Partnership, 2004).

Three alternative community development models were considered for the Best Start catalogue. Two (SCIPP: Guyer et al., 1989; Safe Kids: Davidson et al., 1994) were rejected because the evaluations, although well designed, indicated only limited effectiveness. The other (Safe Start) has been included as an 'emerging practice' because it was created specifically for the Victorian context and the evaluation period was too short (18 months) to be able realistically to demonstrate any impacts on injury rates. A new evaluation of Safe Start is currently under way and is expected to report findings in 2009.

The Safe Start program began in 2002 with three demonstration sites funded by the Victorian Department of Human Services. The target group is children aged up to eight years. The objectives of Safe Start are consistent with those of Best Start, and include enhancing local capacity to respond to child injury issues, making a demonstrable impact, building sustainable responses and partnerships between communities, services and local government, and focusing on disadvantaged groups (Safe Start website, downloaded 25/9/2006). The formative evaluation focused on processes and impacts but did not assess long-term outcomes (changes in child injury rates). Sites assembled many useful resources and were successful in building community partnerships. They delivered training courses and raised community awareness through the media and special events. The program resulted in policy and practice changes in local councils and community services, but there was little impact on risk reduction in the home environment (Sherrard et al., 2004).

15.1.4 Discussion

Two of the four recommended strategies are community development programs. While these are popular, widely implemented strategies with a strong theoretical basis and some high-quality evidence to support them, it is worthwhile to consider their requirements and limitations.

In his recent systematic review of community-based injury prevention programs, Nilsen (2004) observed that this strategy appears to work best in communities that are socially and culturally uniform. The difficulty of implementing such a program in a culturally diverse community was noted in two Australian evaluations (Jefferis, Booth and Calvert, 1993, cited in Nilsen, 2004; Ozanne-Smith et al., 2002). In Waitakere the program was split into three parts on ethnic lines (Maori, Pacific and general population) and a coordinator with knowledge of appropriate cultural processes was appointed for each group. This approach may have contributed to its success (Nilsen, 2004).

The evaluators of one of the original Safe Community programs in Sweden pointed out that such programs are long-term investments, preferably over periods of 10-15 years (Lindqvist et al., 1996). During this time the role of the researcher/coordinator changes from 'educator' (sharing scientific knowledge) to 'catalyst' (linking community groups) to 'observer' (collecting data and drawing conclusions). The handover phase at the end of the design period, when politicians and public servants take over responsibility for implementing the program, is crucial to success and sustainability, and relies on identifying champions who will keep the work of the program going.

Some of the evaluation studies described above may, therefore, have been too short-term to observe any effects on injury outcomes for children. There is also evidence that injury rates rebound after a program ceases (Hanson et al., 2002) and the effects wane after it has been running for some years; safety messages must be 'continuously renewed and reinforced' (Bjerre and Schelp, 2000, page 461).

One characteristic shared by the evaluations of road safety education and some community-based programs is the inability to demonstrate reductions in injury rates, although intermediate outcomes such as safer attitudes and behaviours are reported. This does not mean these interventions are ineffective. The ability to detect changes in injury rates may be limited by factors such as the design of the studies and poor uptake in the community (Lyons et al., 2004). Some studies lack power: the statistical ability to detect small to moderate changes over time or differences between communities in the incidence of low-frequency events such as child deaths from injury (Ozanne-Smith et al., 2002).

Community-based models are not single interventions but sets of interventions, selected to address the priorities identified within the community, supported by processes that aid effective implementation. Moller (2004) asserts this broad focus means it is impossible to achieve the strict control of intervention delivery, subjects and analysis necessary for a high-quality clinical trial. The criteria for rigorous evaluation are more likely to be met in affluent (relatively homogeneous) communities. The need for control in rigorous evaluation designs is in conflict with the principles of this type of program: cooperation, multiple intervention and adaptation. An alternative is to focus on understanding the dynamics of how these programs work, so that they can be applied in a variety of settings (Moller, 2004).

Another angle on the effectiveness question is provided by a recent study of neighbourhood effects on childhood injury rates (Kendrick, Mulvaney, Burton and Watson, 2005). Relationships between electoral ward (neighbourhood), family and child characteristics and medically attended injury rates were examined for 1,717 families (2,357 children aged up to seven years) in the city of Nottingham, UK. Statistical analysis revealed that although children in certain wards were more likely to need emergency medical attention for injury, this could be attributed to differences in family characteristics.

In other words, the fact that these children tended to be living in rented accommodation and had teenaged mothers was a better predictor of emergency department attendance than the characteristics of their neighbourhoods. For very serious injuries requiring hospital admission, the picture was slightly different. Children were more likely to suffer such injuries if they lived in severely deprived neighbourhoods with high levels of violent crime, or if their homes did not have smoke alarms, stair gates or safe storage of sharp objects. These findings indicate that the risk of injury depends on both community and family factors and sheds some light on why it is so difficult to demonstrate the effectiveness of community-based programs. Kendrick and colleagues concluded that:

'reducing inequalities in injury rates may be achieved more effectively by focussing prevention at families rather than neighbourhoods, but in practice interventions at both levels are likely to be necessary'
(Kendrick et al., 2005, page 1,905).

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Indigenous Injury Research, The George Institute: www.thegeorgeinstitute.org/iih/research/injury-prevention-&-and-trauma-care/research/

RoadSmart and Traffic Safety Storybooks, VicRoads: www.vicroads.gov.au

Safe Start, Victorian Department of Human Services: www.health.vic.gov.au/injury/safestart.htm

SchoolSafe, Kidsafe Australia: <http://www.schoolsafe.org.au/index.htm>

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Table 17: Decreased rate of unintentional injury – recommended strategies

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(14.1) Child Pedestrian Injury Prevention Program	1	N	Y	Y	UNIVERSAL
(14.2) Home visiting	1	Y	Y	Y	LOW SES CALD
(14.3) Safe Start	5	Y	Y	Y	LOW SES CALD
(14.4) Waitakere City Council	2	Y	Y	Y	INDIGENOUS CALD

Key

Supporting evidence:

1. Well-supported practice – evaluated with a prospective randomised controlled trial.
2. Supported practice – evaluated with a comparison group and reported in a peer-reviewed publication.
3. Promising practice – evaluated with a comparison group.
4. Acceptable practice – evaluated with an independent assessment of outcomes, but no comparison group (such as pre and post-testing, post-testing only or qualitative methods) or historical comparison group (such as normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (such as formative evaluation, service evaluation conducted by host organisation).

Replication:

Has the intervention been implemented and independently evaluated at more than one site? (yes or no)

Documentation:

Are the content and methods of the intervention well documented (such as provider training courses and user manuals) and standardised to control quality of service delivery? (yes or no)

Theoretical basis:

Is the intervention based upon a well-accepted theory or developed from a continuing body of work in its field? (yes or no)

Cultural reach:

Has the program been trialed with people in disadvantaged communities, Indigenous people or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

Recommended strategy 14.1: Deceased rate of unintentional injury

Name of intervention	Child Pedestrian Injury Prevention Program
Organisation	Curtin University/Edith Cowan University
Brief literature review	The Child Pedestrian Injury Prevention Program (CPIPP) combined school-based education for students in years two to four (age range seven to 10 years), their parents, teachers and community members with various modifications in the road environment. The aim was to improve children's safety behaviours and reduce their exposure to hazards on the roads. Classroom and homework activities were designed to improve children's and parents' pedestrian-related knowledge, attitudes, skills and behaviours (school-based strategies). The community-based strategy involved establishing a local road safety advisory committee with representatives from local government, the regional health authority, community policing, schools, the roads authority, transport organisations and service clubs. This engaged the community in meetings, seminars, events, lobbying and advocacy. Engineering changes were also planned to local roads to reduce environmental hazards.
How and why does this intervention work?	The program was evaluated with a controlled trial involving three local government areas randomly assigned to three levels of intervention: high (school and community-based strategies), moderate (school-based strategies) and comparison (no intervention). A total of 47 schools, 2,440 pupils (plus one parent or guardian for each), 106 teachers and 1,845 community residents took part in the trial. At the end of the first year of the three-year program, children in the high-intervention group had significantly better knowledge and behaviours, while those in the moderate intervention group had better behaviours than the comparison group.
On what population does this intervention work best?	Children entered the program at the age of six or seven years (school year two) and continued for three years. The program has since been adapted for preschool-aged children and an evaluation of the new version, Walk With Your Kids, is nearing completion (results expected late 2007). The new program is based on research on child development and road safety. It focuses on parents, providing practical activities to help them teach children to use roads more safely.
Where will this intervention work best?	This is a universal program. CPIPP was trialed in three local government areas in metropolitan Perth, Western Australia, chosen because of high child pedestrian injury rates.
What is required to implement this intervention?	The school-based strategies require educational materials; activities that provide children with skills training in the real road environment or a simulated road outside the classroom; half-day training and ongoing support for the teachers. The community-based strategies require partnerships between agencies and organisations, skills in developing media campaigns and implementation of Safe Routes to Schools.
Resources and contact information	For information about CPIPP and the Walk With Your Kids program, contact Dr Margaret Hall at the Child Health Promotion Research Centre, Edith Cowan University, m.hall@ecu.edu.au. Website: http://chpru.edu.au
References	Burns S, Cross D, Stevenson MR and Kenaston T (1998) Stevenson M, Jones S, Cross D, Howat P and Hall M (1996)

Recommended strategy 14.2: Deceased rate of unintentional injury

Name of intervention	Home visiting
Organisation	Various models including Olds model
Brief literature review	The benefits of home-visiting programs for reducing injuries among children, including those in disadvantaged groups, have been demonstrated in numerous systematic reviews. The most successful programs involved professional personnel (nurses, health visitors) and used a systematic approach to assessing and modifying specific hazards in the home. Risks addressed by the program varied by community but generally included limiting children's access to medicines, cleaning supplies, electrical outlets and cords, small objects and sources of fire; securing windows in multi-level homes; reducing tap water temperatures; encouraging use of stair gates, smoke detectors and bicycle helmets; discouraging use of baby walkers. In some cases, programs were enhanced by counselling in primary care settings or distribution of free, loan or low-cost safety equipment.
How and why does this intervention work?	There have been many high-quality controlled trials of home visiting over several decades. A recent study in large urban centres in Canada found that three years after participating in the trial, children in the intervention group were still significantly less likely to require medical treatment for injuries than children in the control group. Both groups received a home visit as part of the original trial, and the intervention group received specific feedback on the findings of the safety inspection with detailed information about addressing deficiencies. Three years later, participants in the intervention were more likely than control group participants to report that the home visit had changed their knowledge, attitudes and practices regarding home safety (63 per cent cf. 43 per cent).
On what population does this intervention work best?	Home visiting interventions tend to target families most at risk. Benefits have been convincingly demonstrated for socially disadvantaged groups.
Where will this intervention work best?	The Canadian trial described above (King et al., 2005; 2001) took place in five cities in four provinces. The Nurse Home Visitation Program has been trialed at three locations in the US including the original site of Elmira, New York (Olds et al., 1999). Home visiting has also been used and evaluated in the UK (such as Watson et al., 2004).
What is required to implement this intervention?	Trained and professional personnel as home visitors (the Elmira model recommends nurses because of their formal training in children's and women's health and their skills in dealing with complex clinical situations); targetting to those most in need and use of clinically tested methods of changing health and behavioural risks. In order to reproduce the benefits found in the studies, programs need to be implemented closely according to the model tested.
Resources and contact information	See reference list
References	Individual trials: Gielen et al. (2002); Hendrickson (2005); Kendrick et al. (2000); (1999); King et al. (2005); (2001); Olds et al. (1999); Watson et al. (2004). Reviews: Centre for Reviews and Dissemination (2004); Lagerberg (2000); Roberts, Kramer and Suissa (1996).

Recommended strategy 14.3: Deceased rate of unintentional injury

Name of intervention	Safe Start
Organisation	Victorian Department for Human Services/Monash University Accident Research Centre
Brief literature review	The Safe Start program began in 2002 with three demonstration sites funded by the Victorian Department of Human Services. The sites used a community development approach to injury prevention among children, particularly in home and play settings. Safety promotion resources were developed. Community education sessions were conducted and safety training provided to health professionals, day carers and volunteer peer educators. Publicity activities included stories and interviews in local media, special events, conference presentations and websites. Demonstration kitchens were used as education tools, and high-risk families were visited at home. Changes to council policies and practices were made.
How and why does this intervention work?	The evaluators provided support to the sites, including advice on selection of evidence-based interventions, so this was a formative evaluation. Because of the very short time frame (18 months) it focused on processes and impacts but did not assess long-term outcomes (changes in child injury rates). The program resulted in policy and practice changes in local councils and community services relevant to child injury prevention. There was little impact on risk reduction in the home environment. A new evaluation of Safe Start is currently under way and is expected to report findings in 2009.
On what population does this intervention work best?	Two of the demonstration sites targeted children aged up to eight years; the other, which was in a culturally diverse community, targeted children in the birth to five age group.
Where will this intervention work best?	The Safe Start program was developed in Victoria and implemented in various settings, including homes, child care and community environments.
What is required to implement this intervention?	The pilot sites devoted much effort to building partnerships between government, community agencies and the private sector. These centred around maternal and child health services and children's services, with health and emergency services. Training sessions were provided to health professionals, day care workers and volunteer peer educators. Factors influencing the program's success included the relevance to target groups and the involvement of council; the motivation of key individuals; project officers' skills and ability to interact with a wide range of stakeholders; and their passion for child injury prevention.
Resources and contact information	Resources such as safety kits, brochures and booklets and home safety manuals were developed. For information about Safe Start, contact the Victorian Department of Human Services: www.health.vic.gov.au/injury/safestart.htm
References	Sherrard J, Cassell E, Gibbs L and Waters E (2004)

Recommended strategy 14.4: Deceased rate of unintentional injury

Name of intervention	Waitakere Community Injury Prevention Project
Organisation	Waitakere City Council/University of Auckland
Brief literature review	Waitakere was a pilot site for the WHO Safe Community model in New Zealand. The project began with a nine-month development phase including establishment of a management group, identification of priorities and development of a strategic plan. This plan targeted three population groups: Maori, Pacific and general and a coordinator was appointed for each group. Community consultation resulted in the selection of seven priority areas, which included Indigenous and CALD communities, children and road safety. Activities centred around three broad strategies: promotion, education, and environmental change (hazard reduction).
How and why does this intervention work?	The program was independently evaluated over a three-year period (1995-97). Process measures included analysis of project documentation, participant observation, interviews with stakeholders and two case studies. Outcomes were measured using a quasi-experimental design, comparing injury statistics in the intervention area with a comparison population. The rate of injury hospitalisations for children fell significantly in Waitakere following the intervention and rose elsewhere in Auckland. Interviews with residents showed that they had adopted child safety practices in the home such as fire guards and stair gates, and were more likely to have appropriate child restraints in vehicles, than those in the control community.
On what population does this intervention work best?	One third of the population of Waitakere is aged under 20 years. It is culturally mixed, with 14 per cent of the population from a Maori heritage, 11 per cent Pacific and seven per cent Asian. The program was split into three parts on ethnic lines (Maori, Pacific and general population) and a coordinator with knowledge of appropriate cultural processes was appointed for each group. This approach may have contributed to its success.
Where will this intervention work best?	Waitakere is a large urban area (part of Greater Auckland). The intervention was delivered in various settings including homes, schools, playgrounds and the road environment.
What is required to implement this intervention?	The three-year pilot program was implemented by Waitakere City Council in two phases. During the development phase, a management group was established, three coordinators were employed, priority areas identified and a strategic plan developed. The implementation phase involved promotional and education strategies (such as correct use of child restraints) as well as hazard reduction (such as installing smoke alarms in homes, covering drains, improving playgrounds). Council worked together with the voluntary sector of the community.
Resources and contact information	Information on the WHO Safe Community Program is available from the Karolinska Institutet, Sweden: www.phs.ki.se/csp/who_publications_en.htm For information on the evaluation of the Waitakere program, contact Dr Carolyn Coggan, Injury Prevention Research Centre, University of Auckland, c.coggan@auckland.ac.nz .
References	Coggan C, Patterson P, Brewin M, Hooper R and Robinson E (2000)

16. Parenting support

16.1 Proportion of children whose parents report high levels of social support

16.1.1 Background

Jennifer Bowes in her paper on parent education and support programs (Bowes, 2000) makes the comment:

‘In the design of the programs and their evaluation, there is a surprising lack of attention to the social support links of parents and ways to build social networks. Too often, it seems, families are seen as isolated units without ties to extended family or to friends. All too often these social ties are missing for families with young children’

Bowes goes on to say:

‘The demands of child rearing without support from others as well as a lack of involvement of outsiders who are in a position to observe what is happening in a family, is what many families are lacking and this isolation can raise the likelihood of abuse. Assisting the development or strengthening of social networks involving parents would seem to be a legitimate activity for programs to achieve their aims. Programs can address the issue of social support through holding group meetings or activities for parents and young children, or through artificially setting up support groups as is done by early childhood nurses in NSW when they form “mothers groups” for mothers with newborn children’

Sheppard (2004), in his evaluation of social work support for depressed mothers in the care setting, supports these comments by finding ‘that social workers need to develop a keener awareness of support deficits so that they are targeted better; they need to monitor more carefully interventions carried out by other agencies and professionals; and they should look to relief care of children as a major form of intervention to support these women’.

16.1.2 The evidence base

A literature search was conducted into relevant programs or interventions designed to improve social support for parents. The literature search included a number of components:

- building upon the work from the Strategies for Gain report (Eagar et al., 2005), looking for reviews of the evidence base
- review of Best Start publications
- term analysis (MeSH; Thesaurus of Psychological Index Terms)
- plus feedback on search progress from the Victorian Department of Human Services – 3/8/06 (further search terms added: community development, community capacity, neighbourhood, peer therapy, support groups, not group therapy)
- use of the COSI model (Bidwell and Jensen, 2003) to explore the Cochrane and Campbell Collaboration Libraries to move out into the web to search for specific programs.

This search found poor coverage in the area, finding no major reviews of the evidence. This is exemplified by the recent withdrawal of the Cochrane Review by Hodnett and Roberts into home-based social support for socially disadvantaged mothers (currently a Cochrane Review is underway to replace Hodnett and Roberts, 2005, see Coren et al., 2004). This then requires an examination of single or individual studies into programs or interventions designed to improve social support for parents.

16.1.3 Selection of recommended interventions

Based on this search of the evidence the following strategies were recommended:

- Early Head Start plus Interpersonal Therapy for Depression (Beeber et al., 2004)
- Hamilton Health Community Program (Lipman and Boyle, 2005)
- Triple P – Positive Parenting Program (Brief Behavioural Family Intervention) (Turner and Sanders, 2006)
- Survival Skills for New Moms (Zlotnick et al., 2001).

They represent a cross section of promising practices in the area. Further details about these individual studies can be found in the catalogue.

16.1.4 Discussion

In terms of providing an overview of the area of improving social support, only a few papers were found. These include a Cochrane Review into parent training programs by Barlow et al. (2005); papers by Bowes (2000), Gardner and Deatrck (2006); and reports by Cattermole et al. (2005) and Kelher and Armstrong (2006).

Barlow et al. (2005) conducted a meta-analysis into 23 published studies of parent training programs (including behavioural parenting programs; multi-modal parenting programs; behavioural-humanistic parenting programs; cognitive-behavioural parenting programs; rational emotive therapy parenting programs) that used standardised outcome measures, found no effect of parent training programs on levels of social support. However, two of the four studies noted included parents of disabled children. Barlow et al. (2005) also calls for greater standardisation of outcome measures, more research on process variables and for longer periods of follow-up. It should be noted, however, that Barlow et al. (2005) did find benefits in terms of reduced depression and anxiety/stress, increased self-esteem, and improved relationship with spouse/marital adjustment post-program.

Bowes (2000) notes that only two of the 24 education programs she reviewed (which included Healthy Start in Hawaii) commented about 'changes in the parents' peer support networks following participation in the program and none enquired about any engagement in community volunteer work once the program had ended even though some programs encouraged parents to become volunteer home visitors' (page 12). She also notes that fathers are 'a group that received little mention in program descriptions and evaluations' (page 19).

In their review of the research evidence for parental education interventions in the infancy period (from birth to 12 months), Cattermole et al. (2005) examined a number of different types of interventions including home visiting (professional and non professional) and interventions aimed at improving the psychological health of mothers, the knowledge base of mothers, the parenting and coping skills. For postnatal depression they examined community midwives individualised care, sleep management plans, counselling and interpersonal psychotherapy. After examining 23 studies, they found:

'In general, there is insufficient evidence addressing the range of different needs and groups of clients being served in the period from birth up to the end of the first year. Therefore, at present it is not possible to draw any conclusions about effective practice'

Gardner and Deatrck (2006) in their survey of the literature for mothering interventions for nurses found:

'The evidence is strongest for nurse home-visiting interventions in the high social-risk population. Other strategies including individual infant focused education, theory-based groups, and skin-to-skin contact appear to facilitate mothering processes, although there is less evidence to support these compared with home-visiting intervention. Further study of the influences of these interventions and of the influence of peer support programs on certain mothering processes should further strengthen the evidence base for mothering interventions' (page 39).

The final overview document is by Kelher and Armstrong (2006). They have produced a particularly useful chapter on social inclusion and connectedness. This has been summarised by the Public Health Group, Department of Human Services in Victoria, and is reproduced in Table 18 below.

Table 18: The evidence for interventions to increase social connectedness from the Evidence in a Nutshell – Mental Health Promotion 2006

Interventions to increase social connectedness – the evidence

Nine categories of interventions have been shown to increase social connectedness. They build social capital, promote community well-being, overcome social isolation, increase social connectedness and address social exclusion.

1. Community building and regeneration programs – local neighbourhood renewal programs and community-building programs. Community-wide programs should be considered at individual, community and organisation levels if they are to be effective.
2. School-based programs for mental health and wellbeing – whole-of-school programs that create a supportive environment, rather than topic-specific approaches to issues such as self-esteem or coping skills.
3. Structured opportunities for participation – civic structures that encourage engagement via local governance, community participation and other forms of social contribution.
4. Workplace mental health promotion – employee participation programs and modification to stressful occupational environments are key mechanisms for mental health promotion in the workplace.
5. Social support – individual support that might modify behaviour and create supportive environments, such as home-visiting programs by nurses and midwives or parent-training programs.
6. Volunteering – such as structured opportunities for people to do voluntary work for their community as part of civic engagement.
7. Community Arts programs – may involve community participation, social inclusion, capacity building and regeneration.
8. Physical activity/exercise – has a positive effect on mental health outcomes for adults and children, but emotional benefits and feelings of wellbeing are likely from increased social interaction, as solitary exercise may not improve depression.
9. Media campaigns for mental health promotion – social marketing campaigns that challenge stigma and raise awareness of attitudes towards mental health.

In terms of improving social support for parents, the common elements of these five documents (Barlow et al., 2005; Bowes, 2000; Gardner and Deatrck, 2006; Cattermole et al., 2005; and Kelher and Armstrong, 2006) are summarised in Table 19.

Table 19: The practice and research implications of this review

Practice and research implications:

In summary, more research and evaluation is needed in the area of interventions to improve the level of social support for parents. At present, single studies may represent promising practices for future development work.

Additional interventions are described at the Parenting Classes and Child Welfare in North Carolina website (see http://www.trainingmatters-nc.org/tm_vol6_no1/TMv6_1_final.pdf) (Gardner and Deatrck, 2006; Jane-Llopis et al., 2005; Elgar and McGarth, 2003; Thomas et al., 2003 and Bowes, 2000 plus the reviews outlined in the re-notification section including Barlow et al., 2006; Lundahl et al., 2006; Geeraert et al., 2004; Skowron and Reinemann, 2005 and Bilukha et al., 2005). Additional educational resources are outlined in the final report on the Victorian PEAS Program (Wake et al., 2003). Australian nursing perspectives and techniques for running a new mothers group are outlined by Scott, Brady and Glynn (2001).

Other noteworthy papers and interventions were:

- a promising individual study for depressed mothers known as the Protecting Families Program (Penn Optimism Program) is currently being studied in the United States (Boyd et al., 2006). It is a 10-week, family-based multi-component prevention program for depressed mothers and school aged children (ages nine to 14). Designed to increase 'knowledge about depression, enhancing social support, and improving parenting skills' (abstract). It uses 90-minute group sessions that '(a) provides psychoeducation about depression, its impact on children, and child development, and (b) teaches parenting skills that can improve children's affect regulation and behavioural control' (page 189). 'Each session begins with a community meal that serves to build relationships and social support between participating families' (page 189). The children undertake the Penn Optimism Program for cognitive restructuring and coping skills (this experimental program is underway in Pennsylvania by Robbins, Diamond, Boyd (2006) see Clinical Trials.gov NCT00183365)
- couples therapy to preserve marital quality during the transition to parenthood (see Schulz et al. 2006 who describe a behaviourally orientated, skills training program which was semi-structured and group based with an expert leader)
- the Ready, Set, Grow! Passport program (Flint, Michigan, USA) (see www.readysetgrowpassport.org) 'New mothers or caregivers are given a resource guide with information on how to handle parenting issues from infancy through age six. They are also given a 'Passport' that guides them through and encourages them to pursue health care, educational and cultural pursuits. When the Passport steps are followed and completed, the program reimburses caregivers with a voucher which can be used at local businesses for discounts or as cash' (website)
- self-administered brief family intervention to parents of difficult toddlers (Morawska and Sanders 2006). A paper by Elgar and McGarth (2003) reviews the work in self-administered psychosocial treatments for children and their families
- currently there is a Cochrane Review underway into the Families and Schools Together (FAST) Program (see Soydan et al. 2005). This is group based, family and community orientated, program which targets school children at risk of failure. It includes shared meals, 'sing-alongs', structured communication activities and play time. Another paper looking at the performance of FAST in the field is by Fischer 2003. A similar project is SAFEChildren, which is a multiple group approach on parenting skills, family relationships and increasing social support (Tolan et al., 2004)
- another potentially useful approach is a community strollers pram walking program. This is supported by a survey of mothers who said a program would benefit those involved, including benefits from exercise, socialising and mental well-being (Currie and Develin, 2002)
- another useful project is ParentCorps which promotes school and social competence and prevents conduct problems from children in low income urban communities. Goals of the program are to strengthen parenting practices, enhance support for parents and empower parents to access resources in their own communities. The intervention includes: groups for parents, groups for preschoolers, parent-child interactions, and home visits. It uses videos, didactics, modelling, role plays, discussions and group activities. It has parent REPs (Resources, Educators and Partners), community agencies and a community advisory board (see http://www.aboutourkids.org/aboutus/programs/p_corps.html)
- the Parents as Teachers program uses individual, home-based and group interactions to inform on child development and good parenting practices (see Wagner and Clayton, 1999).
- the development of supported playgroups (see Playgroup Council of Australia, 2002) for high-need families (such as CALD, young mothers, socially disadvantaged, and those with mental health and addiction issues). 'It offers families a support worker who is experienced in working with families with needs similar to their own and a supportive environment in which to meet other families' (page 4). Further work in this area has been conducted by the Caravan Parks Pilot (National Dissemination Program, Family Action Centre, The University of Newcastle, 2003) for homeless and disadvantaged families, working on a model known as 'Playgroup Plus'.

Also there were a number of overlapping therapeutic areas / interventions which may provide useful sources of supporting evidence. These include:

- post-partum depression (see Dennis and Creedy, 2004) in their Cochrane review they found ‘while no clear beneficial effect in the prevention of post-partum depression from a range of psychosocial and psychological interventions was found, intensive professionally-based post-partum support may be helpful’ (plain language summary). There is also evidence supporting individual versus group therapy, programs with a postnatal component only and those programs targeting at-risk mothers. Similar results were described by Dennis (2004). A Cochrane review into psychosocial and psychological interventions for treating post-partum depression is currently underway (Dennis and Hodnett, 2006)
- parents with children with disabilities or chronic conditions (see Venters Horton and Wallander, 2001)
- Mental Health Promotion (see Kelher and Armstong, 2006)
- peer support for individuals with chronic diseases (currently there is a Cochrane review underway [see Doull et al., 2005] ‘Peer support is becoming an increasingly important strategy in healthcare environments that are facing shrinking financial and human resources’ [page 2])
- programs for children whose parents who are depressed (see the experimental program underway in Pennsylvania by Robbins, Diamond, Boyd, 2006 – www.clinicaltrials.gov NCT00183365)

The use of this kind of supporting evidence from related fields has been advocated by Gardner and Deatrick (2006) who recommended applying the peer support model for parents of children with chronic illnesses to early mothering.

Finally, in terms of alternative approaches, there are two new agendas emerging. First, there is the Wells et al. (2004) proposal of a marriage of public health interventions, especially mental health, with community development initiatives/participatory action research. And second, there is the development of online support groups. While better research and evaluation is need into this whole activity (see Eysenbach et al., 2004 for a review), Drentea and Moren-Cross (2005) did find that a women’s online bulletin board did use emotional support, information giving and community protection, thereby enhancing social capital. However, the debate continues whether online communities and the nature of the internet, increases or decreases social capital.

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Table 20: Proportion of children whose parents report high levels of social support – recommended strategies

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(15.1) Survival Skills for New Moms	1	N	Y	Y	LOW SES
(15.2) Hamilton Health Community Program	1	N	Y	Y	UNIVERSAL
(15.3) Triple P	1	N	Y	Y	UNIVERSAL
(15.4) Early Head Start plus Interpersonal Therapy for Depression	1	N	Y	Y	LOW SES CALD

Key*Supporting evidence:*

1. Well-supported practice – evaluated with a prospective randomised controlled trial.
2. Supported practice – evaluated with a comparison group and reported in a peer-reviewed publication.
3. Promising practice – evaluated with a comparison group.
4. Acceptable practice – evaluated with an independent assessment of outcomes, but no comparison group (such as pre and post-testing, post-testing only or qualitative methods) or historical comparison group (such as normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (such as formative evaluation, service evaluation conducted by host organisation).

Replication:

Has the intervention been implemented and independently evaluated at more than one site? (yes or no)

Documentation:

Are the content and methods of the intervention well documented (such as provider training courses and user manuals) and standardised to control quality of service delivery? (yes or no)

Theoretical basis:

Is the intervention based upon a well-accepted theory or developed from a continuing body of work in its field? (yes or no)

Cultural reach:

Has the program been trialed with people in disadvantaged communities, Indigenous people or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

Recommended strategy 15.1: Proportion of children whose parents report high levels of social support

Name of intervention	Survival Skills for New Moms
Organisation	NA – single study
Brief literature review	This intervention consisted of four group sessions, each of one hour duration, over four weeks. Sessions included: education on ‘baby blues’ and post-partum depression; role transitions; transition to motherhood; setting goals; developing supports; identifying potential interpersonal conflicts; resolving interpersonal conflicts based on interpersonal therapy delivered by mental health professionals.
How and why does this intervention work?	Survival Skills for New Moms was evaluated with a small randomised controlled trial involving 37 pregnant women on public assistance, with at least one predictor for post-partum depression. In terms of experimental design, the control group was a care as usual control group. The outcome measure was major depression as measured by the Beck Depression Inventory three months post-partum. The results suggest that the program was successful in preventing depression.
On what population does this intervention work best?	New mothers at risk for post-partum depression, in receipt of government benefits (low SES).
Where will this intervention work best?	This intervention is delivered in community settings. Mothers were surveyed and recruited while attending a prenatal clinic at hospital.
What is required to implement this intervention?	Mental health professionals with specific training for the intervention, namely interpersonal therapy and using content developed for this study.
Resources and contact information	Contact the article’s author: Dr Caron Zlotnick http://research.brown.edu/myresearch/Caron_Zlotnick
References	Zlotnick et al. (2001)

Recommended strategy 15.2: Proportion of children whose parents report high levels of social support

Name of intervention	Hamilton Health Community Program
Organisation	NA – single study
Brief literature review	The intervention consists of a 10-week program of group sessions (1.5 hours per session). While mothers attend the training program, their children are provided with a concurrent activities program. Two themes are addressed. The child-related content covers topics such as child development and behaviour, behaviour management, school involvement, child welfare agencies). The mother-related content covers issues such as social isolation, stress and coping, personal care and development, relationships, grief, economic disadvantage. To increase access and attendance, reminder calls are provided before each session and assistance with transport and food is provided at sessions. Those who continue to participate are rewarded with books and gift certificates.
How and why does this intervention work?	This program was evaluated via a randomised controlled trial involving 117 single mothers, who were recruited from community advertisements. In terms of experimental design, the control group was a treatment as usual control group. The outcome measures were mood, self-esteem, social support, and parenting. Short-term effects on mood and self-esteem, but not with social support and parenting.
On what population does this intervention work best?	Single mothers of children aged three to nine years.
Where will this intervention work best?	The program was delivered in a church hall or community centre. Mothers were recruited via flyers distributed in the community.
What is required to implement this intervention?	Mental health professionals with specific training for the intervention. Experience with cognitive behavioural therapy and group counselling would be required, as would the use of content developed for this study.
Resources and contact information	Contact the article's author: Dr Ellen L Lipman www.fhs.mcmaster.ca/ceb/faculty_member_lipman.htm
References	Lipman and Boyle (2005)

Recommended strategy 15.3: Proportion of children whose parents report high levels of social support

Name of intervention	Triple P – Positive Parenting Program (Brief Behavioural Family Intervention)
Organisation	Parenting and Family Support Centre, University of Queensland and Triple P International Pty. Ltd.
Brief literature review	Parent training was delivered to mothers by nurses trained in the ‘primary care’ version of Triple P. The intervention consisted of three or four individual sessions, each lasting 30–40 minutes, once a week. Session 1: Problem identification; Session 2: Review problem/parenting plan; Session 3: Review parenting plan; Session 4: Review progress if required and troubleshooting. Supporting materials included visual aids, tip sheets and videos. Compliance/integrity checklists were also completed.
How and why does this intervention work?	This intervention was evaluated using a randomised controlled design involving 30 families presenting to a clinic. In terms of experimental design, the control group was a wait list control. The outcome measures were child behaviour; parenting behaviour; parent-child interaction; parent confidence and adjustment; and treatment acceptability. There was some support for treatment effectiveness on all of these measures except parent-child interaction. Parents were followed up for six months. There was no follow-up of the control group.
On what population does this intervention work best?	Families presenting with a problem to a community child health centre. Parents ‘had one or more concerns about the child’s behaviour or their own parenting skills’ (page 132).
Where will this intervention work best?	Parent education and training provided by a trained practitioner using homework resource materials (including videotapes and booklets). Tested here in an urban or community health centre setting.
What is required to implement this intervention?	Practitioners running Triple P are required to have completed an approved training course and be an accredited provider.
Resources and contact information	www.triplep.net
References	Turner and Sanders (2006)

Recommended strategy 15.4: Proportion of children whose parents report high levels of social support

Name of intervention	Early Head Start plus interpersonal therapy for depression
Organisation	N/A – single study
Brief literature review	Based on interpersonal therapy for depression, the intervention consists of eight home visits by a nurse over a period of eight to ten weeks. This is followed by a ‘booster phase’ of five telephone calls from the nurse over the next eight weeks, and then a final face-to-face meeting. During the visits, strategies are taught for managing depressive symptoms, improving problematic life issues, increasing access to social support, and parenting effectively while asymptomatic.
How and why does this intervention work?	Early Head Start plus interpersonal therapy was evaluated using a randomised controlled trial design involving 16 mothers from CALD backgrounds. Participants were screened for depressive symptoms. The program is part of a larger intervention system. In terms of experimental design, the control group was a usual care or wait list control. The outcome measures were depressive symptom severity and maternal interactions (intervention content, adherence and satisfaction were also measured). Improvements on these measures were maintained for a four-month period.
On what population does this intervention work best?	Low-income mothers of infants and toddlers aged up to three years.
Where will this intervention work best?	The intervention is delivered in home and community settings.
What is required to implement this intervention?	Team of mental health nurses. Training or background in the interpersonal theory of nursing and interpersonal therapy. Using Early Head Start program education materials and content developed for this study.
Resources and contact information	Contact the article’s author: Linda S Beeber, PhD, RN http://nursing.unc.edu/son-bin/son/directories/search.php?x=200
References	Beeber et al. (2004)

