

1-1-2006

Technical report: Development of the Best Start catalogue of early intervention strategies for children's health and wellbeing

Kate Williams

University of Wollongong, kathrynw@uow.edu.au

David L. Fildes

University of Wollongong, dfildes@uow.edu.au

Nick Marosszeky

University of Wollongong, marossz@uow.edu.au

Nadine R. Clark

University of Wollongong, harwood@uow.edu.au

Kathy Eagar

University of Wollongong, keagar@uow.edu.au

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Recommended Citation

Williams, Kate; Fildes, David L.; Marosszeky, Nick; Clark, Nadine R.; and Eagar, Kathy, "Technical report: Development of the Best Start catalogue of early intervention strategies for children's health and wellbeing" (2006). *Australian Health Services Research Institute*. 702.
<https://ro.uow.edu.au/ahsri/702>

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Keywords

catalogue, best, wellbeing, health, report, technical, intervention, early, start, development, children, strategies

Publication Details

K. Williams, D. Fildes, N. Marosszeky, N. Harwood & K. Eagar, Technical report: Development of the Best Start catalogue of early intervention strategies for children's health and wellbeing (Victorian Government Department of Human Services, Melbourne Victoria Australia, 2006).

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Development of the Best Start catalogue of early intervention strategies for children's health and wellbeing



A Victorian
Government
initiative



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Published by Victorian Government Department of Human Services
Melbourne Victoria Australia

April 2007

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Also published on www.dhs.vic.gov.au

Authorised by the Victorian Government, 50 Lonsdale Street, Melbourne.
Job no 0550307

Acknowledgements

This report was prepared for the Department of Human Services by the Centre for Health Service Development,
University of Wollongong; Kathryn Williams, Dave Fildes, Nick Marosszeky, Nadine Harwood and Kathy Eagar.

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1. Introduction and overview

This report is a companion volume to the *Strategies for improving outcomes for young children– A catalogue of evidence-based interventions*. It describes in detail the development of the catalogue, including the literature search strategies and evidence evaluation framework.

1.1 Purpose

The Department of Human Services and the Department of Education and Training jointly established the Best Start program. 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 years services so they are more responsive to local needs. The Best Start program is divided into three phases as follows:

Phase 1 (2001–2003) was a developmental period that aimed to engage the interest of key stakeholders and establish a framework for the program.

Phase 2 (2002–2006) involved the commissioning of 11 mainstream and two Aboriginal Best Start projects. Funding for these projects has subsequently been extended to build on the work undertaken by each project. Phase 2 also saw the execution of an evaluation component to provide feedback on trial activities undertaken.

Phase 3 (2005–2009) involves the commissioning of ten new mainstream and four new Aboriginal projects, an extension of the funding for the Phase 2 projects and a range of developmental activities aimed at furthering the outcomes of the Best Start Program.

The purpose of this project is to develop a catalogue of evidence-based strategies that will assist Best Start projects in implementing interventions in key outcome areas. The catalogue was designed for communities with enough detail for local implementation while allowing room for local flexibility. This builds on the work of the Strategies for Gain project commissioned by the Department of Human Services in 2005 (Eagar et al., 2005). Fifteen indicators have been identified under 13 headings. Each Best Start project is required to target four to five indicators. The headings and indicators are:

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.

1.2 Objectives

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.

Where evidence is limited, it has been necessary to include some strategies that do not fit within the evaluation framework. Where this has occurred, the strengths and weaknesses of the evidence are clearly indicated.

Many of the desired outcomes in children's health and wellbeing are interrelated. Wherever possible we have highlighted interventions with proven positive impacts on several priority areas, which are likely to provide good value solutions for the Best Start sites.

In line with the Best Start goal of introducing innovative changes to services where appropriate, the catalogue contains new ideas along with more familiar approaches.

1.3 Overview of project methodology

1. Review relevant literature to identify early intervention for each of the 15 Best Start indicators.
2. Evaluate the evidence according to a standardised scheme that includes criteria such as the strength of evaluation design and the applicability in the Victorian context.
3. Select three to four strategies suitable for each indicator, noting how and why these particular strategies were chosen.
4. Summarise and organise the evidence for each strategy.

In accordance with a request by the Department of Human Services, the catalogue is presented in a 'user friendly' way and includes the following elements:

- a brief report on the literature that supports the particular intervention
- an explanation of 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
- the cost of the strategy
- advice on where to obtain further information.

1.4 Scope

The 15 indicators were identified by the department as priority areas for the Best Start program with measurable outcomes. They vary in their focus, from quite broad (such as ‘improved reading, writing and numeracy’, ‘increased rate of children who participate in physical activity’) to very specific (such as ‘reduced absences from primary school’, ‘proportion of children who clean their teeth at least twice a day’).

Best Start is jointly auspiced by the Department of Human Services and the Department of Education and Training, and a major focus of the 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 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, promoting community involvement in seeking better outcomes for children or 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 ‘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 background•
- 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.

1.5 Limitations and caveats

The scope and time frame of the project, including the selection of the 15 indicators, were defined by the department in its request for quotation.

The Centre for Health Service Development team working on the project comprised staff who are skilled and experienced health researchers and policy consultants. They are not necessarily established experts in the priority areas for Best Start, although many worked on the earlier Strategies for Gain project and have built up background knowledge in particular areas. Nevertheless, they have extensive experience in reviewing, evaluating and synthesising research evidence for use by policy makers in health and community contexts.

2. Research methods

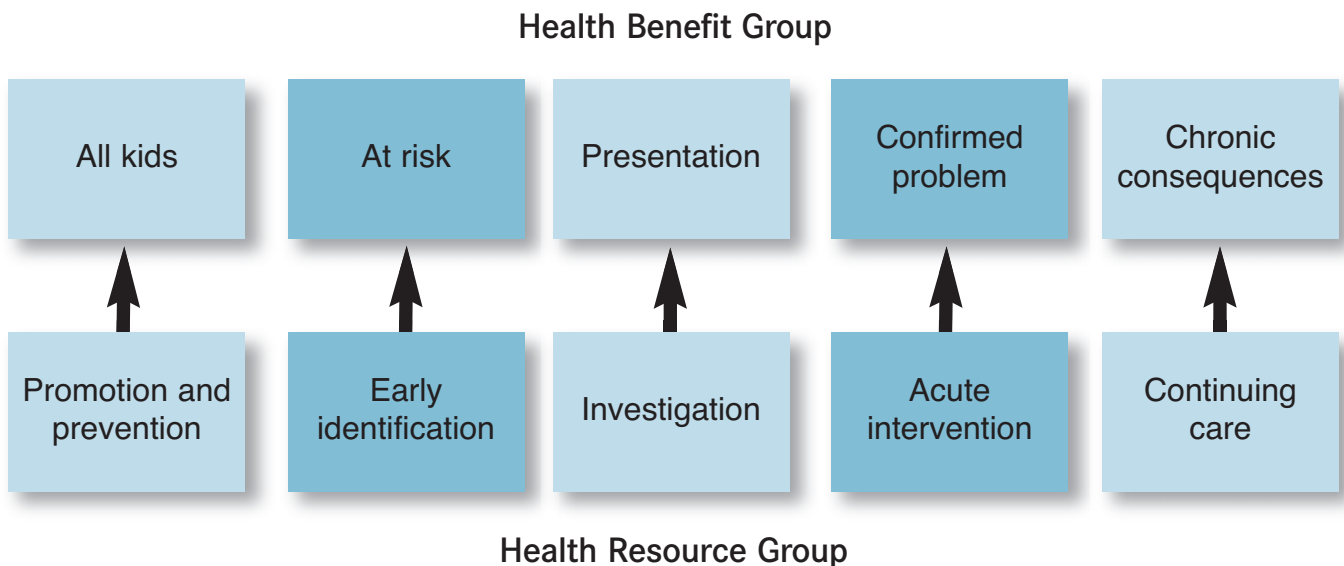
2.1 Search strategies

One of the first steps in conducting a literature review is defining the key words to be used in the search. Selection of appropriate key words for Best Start requires an understanding of how the program operates, whom it seeks to influence and the broad strategies and kinds of activities likely to be successful for each indicator.

Best Start operates at several levels, from individuals and families to communities and services. Therefore, the interventions identified for the catalogue should encompass these different levels or areas of influence.

In terms of the Health Benefit Group/Health Resource Group framework used in the Strategies for Gain project (see Figure 1), Best Start is aimed mainly at the first group: all kids (promotion and prevention).

Figure 1: The Health Benefit Group/Health Resource Group framework



For most indicators, the literature search therefore focused firstly on health promotion activities. As the search progressed it was necessary to expand the scope for some indicators. For example, reducing truancy and improving literacy both require early identification of the children 'at risk' (level two), while the indicator 'Decreased rate of re-notifications to child protection' requires intervention at levels three, four and five.

Engaging and assisting the most vulnerable families in communities is a specific target of Best Start. In our search and literature review strategy we therefore sought to identify interventions that have succeeded in overcoming barriers to accessing services, or have helped build relationships and cultural understanding. The *Breaking cycles, building futures* report outlines some practical ideas for action, under four headings:

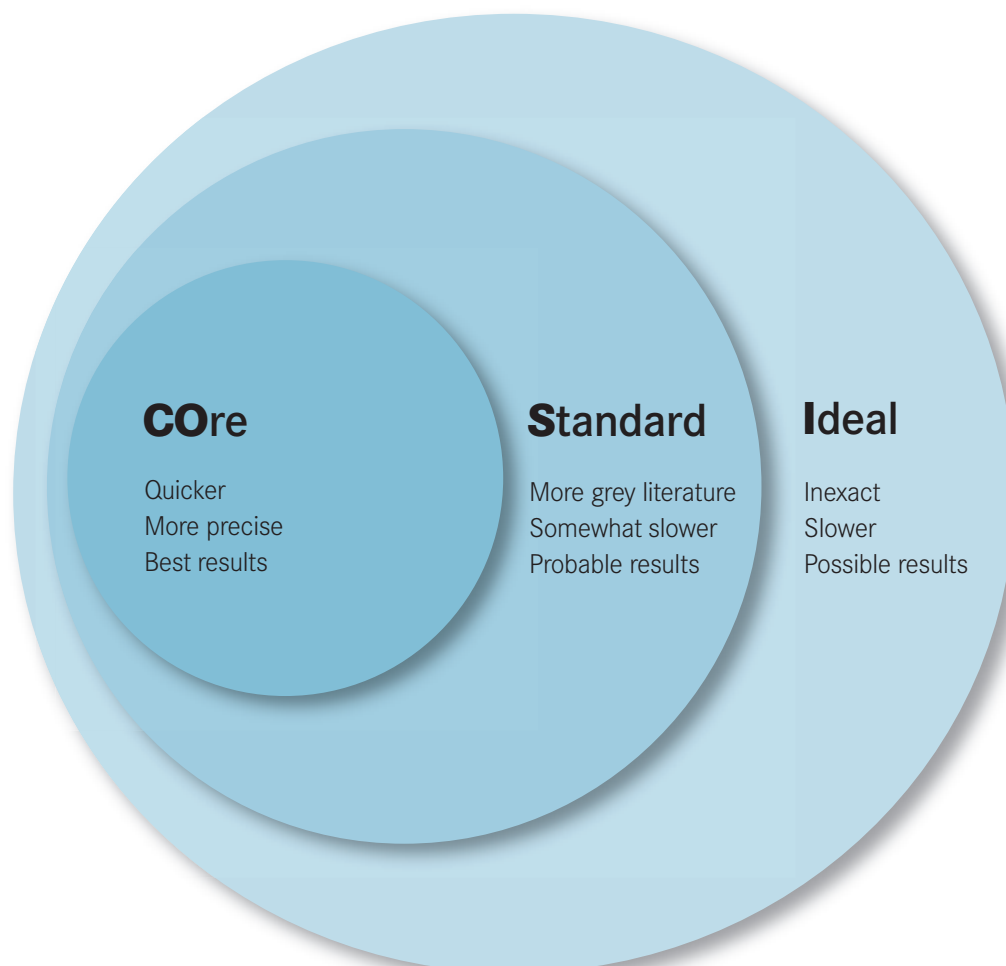
- overcoming 'practical' (structural) barriers (such as via promotion and publicity; providing transport, outreach or home visiting and reducing costs)
- building positive relationships (such as providing training and supervision of workers; building informal supports; improving service entry pathways; and challenging distrust among vulnerable parents and negative attitudes among providers)
- providing acceptable, relevant and useful services (such as cultural sensitivity; standardised assessment; and advocacy and support)
- strengthening service coordination and links (such as improving links with specialist services; and documenting and disseminating 'what works').

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. Scopus, the largest abstract and citation database, was used to search the health and social science academic literature and high-quality websites. Scopus covers 5,900 peer-reviewed titles in health and medicine (including 100 per cent Medline coverage) and 2,700 titles in social science, psychology and economics, along with 250 million web sources. Published titles include academic journals, conference proceedings and books. References date back to 1996, and more than 60 per cent of titles originate outside the US. In addition, electronic databases specific to each topic area were searched for relevant studies. References that the librarian identified as likely to be useful were downloaded directly into EndNote databases, one for each indicator. The number of references in each database varied with 'Increased rate of children who are protected from summer sun' receiving the least number of 18 references and 'Increased rate of breastfeeding' receiving the most with 378. Further detail on the specific searches for each indicator is provided in Appendix A.

Team members expanded these searches according to the COSI (Core, Standard, Ideal) model (Bidwell and Jensen, 2004) (see Figure 3). 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.

Figure 2: COSI model for literature review



2.2 Evaluation of the evidence

A standardised scheme was adopted for evaluating the evidence on each of the proposed strategies for the catalogue. This involved refining the scheme we used in the 2005 Strategies for Gain project, also completed for the Victorian Department of Human Services (Eagar et al., 2005). The evaluation scheme or framework provides an indication of the strength of the evidence, the relevance of the findings to the Best Start context, and additional information that may be useful in guiding the selection of strategies for Best Start sites, namely:

- is the intervention is well documented?
- does the intervention have a sound theoretical and/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, and/or socially disadvantaged families?

The new evaluation framework was attached to a catalogue entry template and both were used to organise and summarise the evidence (see Appendix B). The following section explains how the framework was developed.

2.3 Development of the evaluation framework

Level of evidence is generally defined as study design, based on the assumption that certain study designs are more effective than others in eliminating bias (that is, alternative explanations for an observed effect). The Cochrane Collaboration provides a hierarchy of levels of evidence that emphasises the value of systematic reviews of randomised controlled trials (RCTs). The Cochrane methodology was developed for assessing the effectiveness of interventions in medical research. While systematic reviews of RCTs provided a useful starting point for identifying broad types of interventions likely to be successful in Best Start, this project required much more detail about the content and implementation of the interventions than such reviews generally provide. It was therefore necessary to go to the original studies, which ranged from RCTs and case-control studies to service evaluations.

The difficulties of trying to apply Cochrane-style criteria for high-quality evidence in fields outside medicine have been widely acknowledged. In its document on developing clinical practice guidelines, the National Health and Medical Research Council of Australia (NHMRC, 1999) states ‘recommendations ... should be based on the best possible evidence of the link between the intervention and the clinical outcomes of interest’ (NHMRC, 1999). This requirement is equally important in the field of social and educational interventions, where the goals of providing maximum benefit with minimum harm and acceptable cost also apply. It is also acknowledged however, that the ‘highest’ level of evidence (systematic reviews of randomised controlled trials (RCTs) may not be attainable in public health and social science evaluations of interventions, and that these important fields ‘should not be disadvantaged by the rigid application of a “hierarchy” of evidence’ (NHMRC, 1999, page 14).

Interventions at a population level are less likely than those at an individual level to be evaluated using rigorous study designs such as experiments, quasi-experiments and case-control designs. One case study of the methods used in conducting a systematic review found that most of the population-level evidence would have been lost if only RCTs were included (Ogilvie, Egan, Hamilton and Petticrew, 2005).

Moller (2004), in a discussion of the evidence for community-based injury prevention programs, summed up the problem succinctly:

‘Evaluation of community programs moves out of the comfort zone of traditional research designs. The research and evaluation questions that need to be asked are different and the methods are not those that have become the gold standard for the evaluation of individually based interventions’ (Moller, 2004, page 3).

It was therefore clear that a simple and traditional evaluation framework, classifying studies into levels of evidence based on study design, would not work for Best Start. It would exclude most of the relevant studies, and would not provide sufficient information to enable Best Start sites to understand why an intervention was included in the catalogue and to judge its relative value. It was necessary to broaden the criteria and provide other details relevant to quality.

The Cochrane Collaboration's sibling organisation, the Campbell Collaboration (aka C2), aims to foster evidence-based decision making in the social, behavioural and educational fields. As many of the Best Start indicators are of a social or public health rather than a medical nature, the C2 approach was examined as a potentially useful guide to assessing the quality of studies.

A C2 research design brief on the systematic review of the effectiveness of interventions proposed a standard set of codes that provide information about the quality of an evaluation study over and above its design (Shadish and Myers, 2004). Like the Cochrane Collaboration framework, however, these codes emphasise study design, along with technical aspects of research quality. A draft evaluation framework based on the C2 codes was included in the work plan for this project. After reflection and consultation, however, it was decided that the draft framework was too complex and not user-friendly enough for the Best Start catalogue.

Several potentially useful evaluation schema were identified among the literature for particular indicators. Among these was a classification system used by the California Evidence-Based Clearinghouse for Child Welfare, which rated interventions according to their clinical and empirical support, documentation, acceptance within the field and potential for harm (CEBC: www.cachildwelfareclearinghouse.org, downloaded 7/9/06). At the highest level of evidence were practices for which:

- there was no evidence of harm
- adequate documentation existed
- at least two rigorous RCTs had been conducted in different settings and found the intervention superior to a comparison practice. Findings were reported in a peer-reviewed publication
- effects were sustained
- outcome measures were reliable and valid and administered consistently
- the overall weight of evidence supported the effectiveness of the practice.

The next level focused on efficacy studies (that is, interventions evaluated in ideal rather than real-world conditions), followed by interventions with only one evaluation study behind them, and then interventions with no evaluation evidence.

Aspects of this classification system were combined with additional information from a set of criteria for assessing evidence on parenting programs (Sanders and Morawska, 2006), namely:

- the intervention is based on scientifically derived principles
- cultural appropriateness and consumer acceptability in diverse contexts have been demonstrated
- cost-effectiveness data are available.

The language of the California Evidence-Based Clearinghouse was adopted, but the requirements for the highest level of evidence were relaxed to reflect the nature of the evaluation evidence available for this project. In line with the C2 codes, the strict insistence on the RCT design was replaced by a broader assessment of whether the study was rigorous. It was considered most important that the intervention was evaluated against a comparison group receiving usual treatment. Independent evaluators and publication of findings in the peer-reviewed literature were also considered markers of quality. The concept of replicating evaluation results in different settings was separated from the concepts of study design and methods, and included in the framework as an indicator that the intervention can be generalised beyond the original community for which it was designed.

The final evaluation framework included in the Best Start catalogue includes the following criteria for 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).

Readers will note this is not a strict hierarchy because it is possible for an evaluation to be, for example, a comparison group study conducted by the host organisation (not independent) and published in a peer-reviewed journal. Where this is the case, studies were assigned to the highest relevant level of evidence (in the case of this example, level two).

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?

2.3.1 Relevance to Victoria

The literature review concentrated exclusively on interventions relevant to improving the health and wellbeing of Victorian children and within the scope of Best Start. In assessing relevance, we considered:

- population in which the intervention was evaluated
- type of agency implementing the intervention
- resources required (costs)
- other necessary conditions for success (such as training or support of workers)
- constraints (such as copyright, licensing and costs associated with proprietary resources, programs, and packages).

These criteria are not part of the evaluation framework as interventions judged by the reviewers as less relevant or excessively demanding in terms of time or resources were excluded from the catalogue in favour of interventions considered better suited to implementation within Best Start.

2.4 Consultation and feedback

A 'long list' of interventions identified as potentially suitable for the Best Start catalogue was prepared and released to program managers and selected sites on 26 September 2006. Although this was not part of the original work plan, it was a useful exercise as it provided an opportunity to begin the consultation process early and involve some of the new Best Start sites, which commenced in September. A video conference attended by the leaders of the catalogue project, program managers and representatives from three Best Start sites was held on 16 October 2006 to discuss the 'long list'. Discussions focused on the applicability of the interventions to the Victorian context and highlighted some additional strategies to be considered for inclusion.

Members of the project team then selected a 'short list' of interventions for inclusion in the catalogue, based on the available evidence, and completed the catalogue entries. This 'short list' was disseminated to the program managers for their feedback. The successful strategies have been included in the *Strategies for improving children's health and development – A catalogue of evidence-based interventions*.

3. Findings of the review

3.1 List of recommended strategies

The results of our search and literature review are presented below, as a list of recommended strategies for the Best Start catalogue (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

Table 1: Best Start catalogue strategies (cont)

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

Indicator		Recommended strategies		Target groups	Other indicators affected
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
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

3.2 Strategies suitable for Best Start's high-priority groups

3.2.1 Low-income families

Universal or public health approaches have the advantage of making parenting support interventions widely available in the community, maximising reach and access (Sanders and Morawska, 2006). The main disadvantage with this approach is that it often fails to engage the families who need it most (Hutchings and Lane, 2006). Accordingly, more than half of the 59 recommended strategies in the catalogue have been tested and found to be effective with vulnerable, low-income families, as indicated in Table 1 as 'low SES'. These include a mixture of individual and group-based interventions.

The evidence for professional parenting programs is particularly strong, partly because such programs are manualised and standardised and therefore relatively easy to evaluate. Scott (2006) makes the point that the group format may not suit the families most at risk. These families may be experiencing crises in housing, schooling, health and finances, which have to be overcome before parenting issues can be addressed. In addition, they may be very cautious in relation to programs run by government agencies.

Programs such as the Incredible Years (IY) series have had substantial success in engaging families at the high-risk end of the spectrum by acknowledging and actively addressing the barriers to their participation. Transport, daycare and meals are provided and the course times are flexible, to improve accessibility. Delivery of the program is designed to build a collaborative relationship between parents and practitioners (Hutchings and Lane, 2006).

Useful approaches that have been shown to help engage and help families suffering multiple stressors and disadvantages are:

- building a collaborative alliance with parents
- mobilising parents' resources and working in a way compatible with their beliefs and values
- accepting parents' goals, tailoring tasks and suggestions to them and exploring material relevant to them
- being hopeful while also acknowledging the difficulties; focusing on the present and future rather than dwelling on past problems (Hutchings and Lane, 2006).

3.2.2 Aboriginal and Torres Strait Islander families

Eight of the Best Start sites focus specifically on improving the health and wellbeing of Aboriginal and Torres Strait Islander children and their families in Victorian communities. For this reason, the reviewers specifically sought out interventions that have demonstrated effectiveness and cultural appropriateness in Indigenous populations.

Table 3 lists 13 evidence-based strategies, covering 11 of the 15 indicators. Other strategies, described as universal, low SES or CALD, have not been evaluated with this target group but may nevertheless be useful for Indigenous families if program managers at Best Start sites consider they are feasible and acceptable.

Table 2: Recommended and additional evidence-based strategies for Indigenous children and their families

Indicator		Recommended strategies	Other evidence-based strategies
1	Breastfeeding		5.1, 5.2, 5.3, 5.4
2	Fewer women smoking in pregnancy		3.3, 5.3
3	Less exposure to tobacco smoke in the home	3.3	
4	Immunisation		5.1, 5.2, 5.3, 5.4
5	Maternal child health service attendance	5.1, 5.2, 5.3, 5.4	
6	Protection from summer sun		
7	Participation in physical activity		
8	Brushing teeth twice a day	8.4	
9	More parents reading to children	9.3	10.2
10	Better reading, writing and numeracy	10.2	9.3, 11.2, 11.3
11	Increased kindergarten participation	11.2, 11.3	
12	Reduced absences from school		
13	Fewer re-notifications to child protection	13.3	
14	Decreased injury rates	14.4	
15	More social support for parents		13.3, 14.4

3.2.3 Families from culturally and linguistically diverse backgrounds

The catalogue includes 15 recommended strategies that have been tested and demonstrated effective within culturally and linguistically diverse communities. There is relatively little evidence of effective strategies for CALD communities in the area of health and wellbeing. In contrast, Table 5 highlights that there is a large body of evaluation evidence for interventions designed to improve literacy and safety for this group.

Table 3: Recommended and additional evidence-based strategies for culturally and linguistically diverse communities

Indicator		Recommended strategies	Other evidence-based strategies
1	Breastfeeding	1.1, 1.2	
2	Fewer women smoking in pregnancy	2.3	
3	Less exposure to tobacco smoke in the home		2.3
4	Immunisation		
5	Maternal child health service attendance		
6	Protection from summer sun		
7	Participation in physical activity	7.2	
8	Brushing teeth twice a day		
9	More parents reading to children	9.1, 9.4	10.2, 10.4

Table 3: Recommended and additional evidence-based strategies for culturally and linguistically diverse communities (cont)

Indicator		Recommended strategies	Other evidence-based strategies
10	Better reading, writing and numeracy	10.2, 10.4	9.1, 9.4
11	Increased Kindergarden participation		
12	Reduced absences from school		
13	Fewer re-notifications to child protection	13.1, 13.2, 13.3	14.2, 14.4
14	Decreased injury rates	14.2, 14.3, 14.4	
15	More social support for parents		13.3, 14.4

3.3 Strategies influencing more than one Best Start indicator

Many of the recommended strategies have evaluation evidence demonstrating their effectiveness for more than one Best Start indicator (see Table 1). Typical early intervention strategies target parents first, providing individual support in the home or clinic or a range of group-based training activities. They aim to encourage specific health-promoting behaviours such as toothbrushing and use of sun protection, or more generally to build parents' confidence and skills in their interactions with their children. These interventions are assumed to have indirect, positive effects on the health and wellbeing of infants and toddlers. A smaller collection of strategies target preschoolers and children in the early years of school directly, usually in the preschool or school setting.

The literature reviews for the catalogue reveal links and synergies between the strategies that can be delivered in each type of setting. Home visiting, for example, can address the concerns of new mothers surrounding social support and prevention of postnatal depression, breastfeeding difficulties and immunisation schedules. Later, it is useful for promoting the use of safety equipment to reduce the risk of accidental injury, and is also the setting for some family literacy interventions. Parenting skills training and support delivered individually to at-risk families in their own homes has been shown to reduce the risk of child abuse and neglect.

Similarly, the maternal and child health (MCH) clinic setting has enormous potential for use in health promotion beyond the primary purposes of supporting breastfeeding, charting growth and developmental milestones and encouraging immunisation. Included in the catalogue's literature reviews are strategies that utilise the MCH setting to promote sun protection, reduce home hazards, prompt enrolment in kindergarten and distribute book packs to encourage parents to read to their children.

Interventions delivered at preschools can be used to promote participation in kindergarten and to reduce truancy at primary school by building school readiness skills and attitudes. Several of the evidence-based family literacy programs recommended in the catalogue are based at preschools and aim to foster parents' understanding of themselves as their children's first teachers. Preschools and schools are excellent settings in which to make children aware of the importance of sun protection and physical activity and provide opportunities for them to take some responsibility for their own health and wellbeing by wearing hats and sunscreen and being physically active.

4. Conclusion

The quantity and quality of evidence is inconsistent across the 15 Best Start indicators. For some very well researched areas such as literacy, kindergarten 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 reducing absences at primary school. 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.

As the aim was to produce a catalogue of evidence-based strategies, the literature review necessarily focused on interventions that had been rigorously evaluated. 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.

References

(See also separate lists for each indicator in the *Strategies for improving outcomes for young children – A catalogue of evidence-based interventions*)

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Appendix A: Literature search strategy and results

As indicated in Section 2.1, team members worked with a University of Wollongong librarian to develop a set of key words and identify appropriate electronic databases, websites and other sources to search for each indicator. The searches focused on evaluations of interventions or programs for each of the indicators. In the cases of ‘smoking during pregnancy’, ‘tobacco smoke in the home’, ‘reading writing and numeracy’ and ‘immunisation’ the original search terms were refined and repeated based upon input from team members.

The following tables (Table 4 – Table 18) highlight the librarian’s search strategies in each of the priority areas in the academic literature.

Table 4: Search strategies for ‘Increased rate of breastfeeding’

Increased rate of breastfeeding			
Database	Search strategy	Result	Comment
Scopus	Breastfeed* AND Program* AND Intervention	265	
	Limited to 2003 +	90	
	Results checked for relevance	21	
APAFT- Australian Public Affairs Full text	Breastfeed* AND Program* AND Intervention	1	Australian content
AMI Australasian Medical Index	Breastfeed* AND Program* AND Intervention	1	Australian content

Table 5: Search strategies for ‘Increased rate of women smoking during pregnancy’

Increased rate of women smoking during pregnancy			
Database	Search strategy	Result	Comment
Scopus	Pregnan* AND smok* AND decreas* AND Program*	1	
	Decreased smok* AND Pregnan* and Intervention	1	
Medline 1996+	Pregnan\$ AND Smok\$ AND Reduce AND Program\$	10	Limited 2002 +
APAFT- Australian Public Affairs Full text AND AMI – Australian Medical index	Pregnan* AND smok* AND Program*	7	Australian Content
Additional terms	smoking cessation		
	tobacco		
	relapse prevention		
	antenatal		
	prenatal		
	evaluation		
	rural, rural and remote		
	Indigenous, Aboriginal		

Table 6: Search strategies for 'Decreased rate of children exposed to tobacco smoke in the home'

Decreased rate of children exposed to tobacco smoke in the home			
Database	Search strategy	Result	Comment
Scopus	(child* AND expos* AND smok* AND home) AND (program* OR intervention)	12.	limited to 2003+
APAFT- Australian Public Affairs Full text AND AMI – Australasian Medical Index	(child* AND expos* AND smok* AND home) AND (program* OR intervention)	0	
Medline 1996+	(child\$ AND expos\$ AND smok\$ AND home) AND (program\$ OR intervention)	12	limited to 2002+
Additional Terms	smoking cessation		
Scopus	tobacco		
APAFT – Australian Public Affairs Full text AND	relapse prevention		
AMI – Australasian Medical Index	NRT, Nicotine Replacement Therapy		
Medline 1996+	evaluation		
	environmental smoke		
	infant		
	(child* AND expos* AND smok* AND home) AND (program* OR intervention)	12	limited to 2003+
	(child* AND expos* AND smok* AND home) AND (program* OR intervention)	0	
	(child\$ AND expos\$ AND smok\$ AND home) AND (program\$ OR intervention)	12	limited to 2002+

Table 7: Search strategies for 'Increased rate of immunisation'

Increased rate of immunisation			
Database	Search strategy	Result	Comment
Scopus	(child* immunization rates) AND (program* OR innovation*)	9	limited to 2005+
Medline 1996+	(child\$ immunization rates and (program\$ or innovation))	14	
APAFT – Australian Public Affairs Fulltext AND AMI – Australasian Medical Index	(child* immunisation) AND (program or intervention)	11	

Table 8: Search strategies for 'Increased attendance at maternal and child health'

Increased attendance at maternal and child health			
Database	Search strategy	Result	Comment
Scopus	((TITLE-ABS-KEY(increas*) AND TITLE-ABS-KEY(maternal health OR clinic))) AND ((intervention)) AND (attendance)	3	
	(TITLE-ABS-KEY(maternal OR child clinic) AND TITLE-ABS-KEY(attendance))) AND (program* OR intervention)	4	
	(antenatal clinic)) AND ((attendance)) AND (intervention OR program* OR promotion)	2	

Increased attendance at maternal and child health			
Database	Search strategy	Result	Comment
Medline 1996+	1. antenatal clinic.mp. [mp=title, original title, abstract, name of substance word, subject heading word]		
	2. exp Prenatal Care/ or antenatal clinic.mp. or exp Ambulatory Care Facilities/		
	3. exp Prenatal Care/ or antenatal clinic.mp.		
	4. 1 or 3		
	5. attendance.mp. [mp=title, original title, abstract, name of substance word, subject heading word]		
	6. (intervention or program\$ or promotion).mp. [mp=title, original title, abstract, name of substance word, subject heading word]	10	
APAFT- Australian Public Affairs Fulltext AND AMI - Australasian Medical Index	((antenatal clinic) AND (attendance))	0	
	((maternal clinic) AND (attendance))	0	
	((child clinic) AND (attendance))	0	

Table 9: Search strategies for 'Increased rate of children who are protected from summer sun'

Increased rate of children who are protected from summer sun			
Database	Search strategy	Result	Comment
Scopus	((TITLE-ABS-KEY(sun) AND TITLE-ABS-KEY(child*))) AND (intervention)	16	Limited to 2003+
Australasian Medical Index (AMI) and Australian Public Affairs Fulltext (APAFT)	((sun) AND (child*)) AND (intervention or prgram or manual))	2	

Table 10: Search strategies for 'Increased rate of children who participate in physical activity'

Increased rate of children who participate in physical activity			
Database	Search strategy	Result	Comment
Scopus	((TITLE-ABS-KEY(physical activity) AND TITLE-ABS-KEY(child*))) AND (intervention OR program*)	22	limited to 2006+
SPORTDiscus	<ol style="list-style-type: none"> Child exp= 39372 physical education = 31964 1. and 2. = 4811 Intervention or program\$= 77951 3 and 4 = 2076 limit 5 to ((article or "book review" or monograph or "thesis or dissertation" or url) and english language)=1470 limit to 2000 	11	

Table 10: Search strategies for 'Increased rate of children who participate in physical activity' (cont)

Increased rate of children who participate in physical activity			
Database	Search strategy	Result	Comment
APA-FT - Australian Public Affairs - Full Text AND Meditext AND AMI - Australasian Medical Index	Search #1 (((child*) AND (physical activity)) AND (participation)) Search #2 (program or intervention) 21032 Search #3 (#2 AND #1) 4	2	

Table 11: Search strategies for 'Proportion of children who clean their teeth at least twice a day'

Proportion of children who clean their teeth at least twice a day			
Database	Search strategy	Result	Comment
Scopus	((TITLE-ABS-KEY(teeth OR dental caries) AND TITLE-ABS-KEY(child*))) AND (program* OR intervention)	36	limited to 2004+
APA-FT - Australian Public Affairs - Full Text AND Meditext AND AMI - Australasian Medical Index	((teeth or dental caries) AND (child*)) AND (program* or intervention)	5	

Table 12: Search strategies for 'Increased rate of parents reading to their children'

Increased rate of parents reading to their children			
Database	Search strategy	Result	Comment
Scopus	((TITLE-ABS-KEY(read*) AND TITLE-ABS-KEY(child*)) AND ((parent*)) AND (program* OR intervention)	30	2005+ Lots coming up on school readiness- could not eliminate these
ERIC (OVID)	1. exp FUNCTIONAL READING/ or exp DIRECTED READING ACTIVITY/ or exp EARLY READING/ or exp INDIVIDUALIZED READING/ or exp INDEPENDENT READING/ or exp BEGINNING READING/ or exp READING/ = (22704) 2. exp PARENTS AS TEACHERS/ or exp PARENTS/ = (16691) 3. 1 and 2 = (299) 4. (program\$ or intervention).mp. [mp=abstract, title, headings word, identifiers, eric digests full text] = (413061) 5. 3 and 4	34	
A+ Education. Australian Education Index (AEI). Australian Public Affairs Full text (APA-FT)	#3 (#2 AND #1) 266 #2 ((program*) OR (intervention)) 93376 #1 (((parent*) AND (child*)) AND (reading)) 704	16	limited to 1995+

Table 13: Search strategies for 'Improved reading, writing and numeracy

Improved reading, writing and numeracy			
Database	Search strategy	Result	Comment
Scopus	((TITLE-ABS-KEY(read*) AND TITLE-ABS-KEY(writ*)) AND (numeracy))	5	
ERIC (OVID)	<ol style="list-style-type: none"> 1. read\$.mp. [mp=abstract, title, headings word, identifiers, eric digests full text]= (130120) 2. writ\$.mp. [mp=abstract, title, headings word, identifiers, eric digests full text]= (97896) 3. numeracy.mp. [mp=abstract, title, headings word, identifiers, eric digests full text]= (1319) 4. 1 and 2 and 3 (176) 5. child\$.mp. [mp=abstract, title, headings word, identifiers, eric digests full text] (219630) 6. 4 and 5 (54) 	15	
	<ol style="list-style-type: none"> 1. read\$.mp. [mp=abstract, title, headings word, identifiers, eric digests full text]= (130120) 2. (program\$ or intervention).mp. [mp=abstract, title, headings word, identifiers, eric digests full text]= (413061) 3. child\$.mp. [mp=abstract, title, headings word, identifiers, eric digests full text]= (219630) 4. 1 and 2 and 3= (15635) 5. limit 4 to (english language and (early childhood education or preschool education or elementary education or primary education))= (5641) 6. readiness.mp. [mp=abstract, title, headings word, identifiers, eric digests full text]= (8572) 7. 5 not 6= (4290) 	29	limited to 2003+
	<ol style="list-style-type: none"> 1. writing.mp. [mp=abstract, title, headings word, identifiers, eric digests full text]= (66833) 2. (child\$ or infant).mp. [mp=abstract, title, headings word, identifiers, eric digests full text]= (221395) 3. (program\$ or intervention).mp. [mp=abstract, title, headings word, identifiers, eric digests full text]= (413061) 4. 1 and 2 and 3= (3974) 5. limit 4 to (english language and (early childhood education or preschool education or elementary education or primary education))= (1624) 	21	
	<ol style="list-style-type: none"> 1. numeracy.mp. [mp=abstract, title, headings word, identifiers, eric digests full text]= (1319) 2. (program\$ or intervention).mp. [mp=abstract, title, headings word, identifiers, eric digests full text] = (413061) 3. (child\$ or infant).mp. [mp=abstract, title, headings word, identifiers, eric digests full text]= (221395) 4. 1 and 2 and 3= (141) 5. limit 4 to english language= (136) 6. limit 5 to (early childhood education or preschool education or elementary education or primary education)= (68) 	28	

Table 13: Search strategies for 'Improved reading, writing and numeracy (cont)

Improved reading, writing and numeracy			
Database	Search strategy	Result	Comment
A+ Education. Australian Education Index (AEI). Australian Public Affairs Full text (APA-FT)	#1(((numeracy) AND (read*)) AND (writing)) = 105 #2 (program or intervention) = 24150 #3 (child* or infant) = 20726 #4 (#3 AND #2 AND #1) =	5	

Table 14: Search strategies for 'Increased participation in kindergarten'

Increased participation in kindergarten			
Database	Search strategy	Result	Comment
Scopus	((TITLE-ABS-KEY(attendance OR participation) AND TITLE-ABS-KEY(kindergarten))) AND (program* OR intervention)	4	
ERIC (OVID)	1. (attendance or participation).mp. [mp=abstract, title, headings word, identifiers, eric digests full text] = 68890 2. kindergarten.mp. [mp=abstract, title, headings word, identifiers, eric digests full text] = 14641 3. (program\$ or intervention).mp. [mp=abstract, title, headings word, identifiers, eric digests full text] = 413061 4. 1 and 2 and 3 = 421 5. limit 4 to english language	26	limited to 1993+
A+ Education. Australian Education Index (AEI). Australian Public Affairs Full text (APA-FT)	((attendance or participation) AND (kindergarten)) AND (program* or intervention)	12	

Table 15: Search strategies for 'Reduced absences from primary school'

Reduced absences from primary school			
Database	Search strategy	Result	Comment
Scopus	((TITLE-ABS-KEY(absence OR truency OR truent OR absent) AND TITLE-ABS-KEY(school))) AND (child*) AND (program* OR intervention)	5	limited to 2004+
ERIC (OVID)	1. (absence or truency or truent or absent).mp. [mp=abstract, title, headings word, identifiers, eric digests full text] = 6062 2. school.mp. [mp=abstract, title, headings word, identifiers, eric digests full text] = 366513 3. child\$.mp. [mp=abstract, title, headings word, identifiers, eric digests full text] = 219630 4. (program\$ or intervention).mp. [mp=abstract, title, headings word, identifiers, eric digests full text] = 413061 5. 1 and 2 and 3 and 4 = 356 6. limit 5 to (english language and (early childhood education or preschool education or elementary education or primary education))	15	

Reduced absences from primary school			
Database	Search strategy	Result	Comment
A+ Education. Australian Education Index (AEI). Australian Public Affairs Full text (APA-FT)	1. (((absence OR truency OR truent OR absent) AND (school)) AND (child*)) = 134 2. (program* or intervention)= 93376 3. 1 and 2	3	

Table 16: Search strategies for ‘Decreased rate of re-notifications to child protection’

Decreased rate of re-notifications to child protection			
Database	Search strategy	Result	Comment
Scopus	((TITLE-ABS-KEY(mandatory report*) AND TITLE-ABS- KEY(child abuse))) AND (program* OR intervention)	17	limited to 2000+
	(TITLE-ABS-KEY(child abuse report*) AND TITLE-ABS- KEY(intervention OR program*))	23	limited to 2004+
	(triple p parenting program*)	13	
Australasian Medical Index (AMI) and Australian Public Affairs Fulltext (APAFT)	((mandatory report*) AND (child* abuse)) AND (program or intervention))	6	
	child abuse reporting	3	
Google	parent socialsupport program	4	

Table 17: Search strategies for ‘Decreased rate of unintentional injury’

Decreased rate of unintentional injury			
Database	Search strategy	Result	Comment
Scopus	((TITLE-ABS-KEY(injur*) AND TITLE-ABS-KEY(child*)) AND ((program* OR intervention)) AND (unintentional))	31	2005+
APA-FT - Australian Public Affairs - Full Text AND Meditext AND AMI - Australasian Medical Index	((child*) AND (injur*)) AND (program* or intervention))	5	

Table 18: Search strategies for ‘Proportion of children whose parents report high levels of social support’

Proportion of children whose parents report high levels of social support			
Database	Search strategy	Result	Comment
Scopus	((TITLE-ABS-KEY(social isolation OR support) AND TITLE-ABS-KEY(parent*))) AND ((intervention OR program*)) AND (self-help group)	4	2002+
	((TITLE-ABS-KEY(support group*) AND TITLE-ABS-KEY(parent*))) AND ((program* OR intervention)) AND (child*)	18	2004+
PsycInfo	1. exp PARENTS= 34692 2. social isolation.mp. [mp=title, abstract, subject headings, table of contents, key concepts] = 3594 3. 1 and 2= 148 4. (program\$ or intervention).mp. [mp=title, abstract, subject headings, table of contents, key concepts] = 167775 5. 3 and 4 = 34	4	1991+
Google	parent social support program	4	

In addition to searching the academic literature each reviewer then conducted a search of the grey literature using similar search terms that were identified by the University librarian.

Typical websites used to search the grey literature included, but were not restricted to, the following:

- Google: www.google.com.au
- Victorian Department of Human Services: <http://hnp.dhs.vic.gov.au/wps/portal>
- Victorian Health Service: www.health.vic.gov.au
- Australian State Government Health websites
- Australian Government, Department of Education, Science and Training: www.dest.gov.au
- Australian Government, Department of Health and Ageing: www.health.gov.au
- Centre for Community Child Health, Royal Children’s Hospital, Melbourne: www.rch.org.au/ccch
- Australian Institute for Health and Welfare: www.aihw.gov.au
- Promising Practices Network: www.promisingpractices.net
- Sure Start, UK: www.surestart.gov.uk
- University research group websites: (such as the Child Health Promotion Research Unit, Edith Cowan University, <http://chpru.ecu.edu.au>)
- Non-government organisations: (such as Barnardos, <http://www.barnardos.org.au>)
- California Evidence-Based Clearinghouse for Child Welfare: <http://www.cachildwelfareclearinghouse.org/search/topical-area/1>
- Promising Practices Network: http://www.promisingpractices.net/programs_indicator_list.asp?indicatorid=8
- The Campbell Collaboration: <http://www.campbellcollaboration.org/index.asp>
- The Promising Practices Network: <http://www.promisingpractices.net/default.asp>
- The Policy Hub: www.policyhub.gov.uk

Appendix B: Catalogue template and evaluation framework

Indicator		
Name of intervention		
Organisation		
Brief literature review	Description of the intervention	
How and why does this intervention work?	Description of the evaluation methods and outcomes, including (if relevant), a brief summary of theoretical basis (why it works)	
On what population does this intervention work best?	Brief (one or two sentences) description of the trial population, including if CALD, Indigenous or disadvantaged community and age of children targeted	
Where will this intervention work best?	Brief (one or two sentences) description of the trial location(s) including if intervention delivered at home, preschool, school, community setting, health setting etcetera.	
What is required to implement this intervention?	Resources needed to implement the intervention (such as money, staff, training, qualifications, infrastructure).	
Resources and contact information	Manuals/videos/leaflets etc available and cost, if applicable. Web addresses, names, telephone numbers etcetera.	
References		
Supporting evidence	<ol style="list-style-type: none"> 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). 	Code: 1, 2, 3, 4 or 5.

Catalogue template and evaluation framework (cont)

Replication	Has the intervention been implemented and independently evaluated at more than one site?	<input type="checkbox"/> Yes <input type="checkbox"/> 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?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Theoretical basis	Is the intervention based upon a well-accepted theory or developed from a continuing body of work in its field?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Cost-effectiveness	Are cost-effectiveness studies available?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Cultural reach	Has the program been trialled with people in disadvantaged communities, Indigenous people and/or people from culturally and linguistically diverse backgrounds?	<input type="checkbox"/> Low SES <input type="checkbox"/> Indigenous <input type="checkbox"/> CALD

