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Updates to the catalogue of evidence-based strategies for children's health and wellbeing

Darcy Morris

University of Wollongong, darcy@uow.edu.au

David Fildes

University of Wollongong, dfildes@uow.edu.au

Nick Marosszeky

Macquarie University, marossz@uow.edu.au

Pamela Grootemaat

University of Wollongong, pamg@uow.edu.au

Kate Williams

University of Wollongong, kathrynw@uow.edu.au

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Updates to the catalogue of evidence-based strategies for children's health and wellbeing

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Darcy Morris

Dave Fildes

Nick Marosszeky

Pam Grootemaat

Kate Williams

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1 Introduction

The Catalogue of Evidence-Based Strategies for improving the health and wellbeing of Victoria's children was commissioned by the Victorian Department of Education and Early Childhood Development (DEECD) and completed by the Centre for Health Service Development, University of Wollongong. In this report, revised narrative reviews and, where necessary, new catalogue entries are provided for 12 indicators originally reviewed in 2008.

The indicators updated in this report include seven adolescent indicators linked to prevention of school disengagement and promotion of success for young people at risk of leaving school early, namely:

- Number of young people convicted and placed on a community order
- Proportion of young people who have a trusted adult in their life
- Proportion of early school leavers who are unemployed six months after leaving school
- Proportion of young people who use/age of initiating use of: alcohol
- Proportion of young people who use/age of initiating use of: tobacco
- Proportion of young people who use/age of initiating use of: illicit drugs
- Year 10-12 apparent retention rate
- Teenage pregnancy rate

In addition, updates are provided for four child and adolescent indicators:

- Hospitalisation rate for asthma
- Low birth weight
- Proportion of children with emotional or behavioural difficulties
- Proportion of families who are food insecure

1.1 Background

In 2006, CHSD was commissioned by the Victorian Department of Human Services (DHS) to develop a catalogue of evidence-based strategies for the health and wellbeing of children aged 0-8 years. The original catalogue was created for the Best Start program, which has a particular focus on prevention and early intervention with vulnerable families, including socially disadvantaged families, Aboriginal and Torres Strait Islander (ATSI) families, people from culturally and linguistically diverse (CALD) backgrounds, and families living in rural areas.

Best Start projects involve collaborations between local government, community health, non-government organisations, social service agencies, education providers such as schools, child care and kindergartens (preschools), and other community organisations such as service clubs and churches. The goals of Best Start are to promote:

- Improvements in access to child and family support, health services and early education for families and children
- Improvements in parents' capacity, confidence and enjoyment of family life
- Communities that are more child- and family-friendly

The catalogue now has wider application beyond the Best Start program, and is a key element in the Victorian Child and Adolescent Monitoring System (VCAMS), providing practical guidance to

policy makers and program developers. Nevertheless, the above goals, priorities and service delivery models remain relevant. It is available via the web at:

<http://www.education.vic.gov.au/healthwellbeing/childyouth/catalogue/default.htm>

1.2 Purpose of the updates

The catalogue is promoted by the DEECD as a dynamic document which is regularly updated.

Our task in updating the catalogue was to check whether any relevant, new evidence had emerged in the academic or grey literature for each of the indicators being reviewed. This may mean adding a new strategy and catalogue entry for an indicator, instead of or in addition to existing strategies. Narrative reviews would be updated, and we would revisit the evidence both for the recommended strategies and those that were mentioned in the catalogue but missed out on inclusion last time. Our searches may turn up an innovative and well-evaluated new strategy to include, although this would not necessarily be the case for each indicator.

The catalogue entries in this report retain the original numbering from their first publication in the catalogue; hence they are not necessarily in order.

2 Methods

The following sections set out methods for updating the searches for each indicator.

2.1 General approach and documentation

The scope of our literature searches was time-limited (2008-2010) and focused, as described below.

First, we looked at the recommended strategies in the existing catalogue. We checked whether any new evidence had appeared to support or discount the use of these programs. We used the contact information in the catalogue entries to check websites and/or email contact people to look for new reports or journal articles. We scanned our bibliographic database search results for articles about these programs.

Second, we looked at the strategies described in the narrative reviews but not included in the catalogue and checked for new evidence that might suggest we should reconsider inclusion.

Finally, we used bibliographic databases and targeted web-based searching to look for any promising new strategies not previously identified.

For each indicator, we referred to a search checklist, listing the databases and websites we believed would be useful for that indicator. Team members were encouraged to explore the web further and to record any sites that proved useful.

2.2 Search strategies

Each catalogue indicator has a documented search strategy for bibliographic databases, using either the Scopus database, or the databases indexed by Scopus: Medline, PsycINFO, CINAHL, Cochrane Library and, for some indicators, ERIC. Searches were limited by year (2008 or 2009 to 2010), English language and peer-reviewed journal (where available). If necessary additional limiters were used to define, for example, the age of the study participants or the specific field of research. Citations were culled initially on title and then on a reading of the abstracts.

In addition to a list of suggested websites, team members searched the internet for policy and practice literature (government reports, university and research institute studies, clearinghouses and so on) relevant to the indicator and to the specific strategies included in the 2008 catalogue.

3 Updated reviews and catalogue entries: adolescent indicators

3.1 *Number of young people convicted and placed on a community order*

The original search strategy for this indicator was rerun, focusing on literature published since 2008. No new interventions were identified. Further evidence was identified for some interventions already included with this indicator:

- Communities that care (community-based intervention)
- Multisystemic Therapy (family-based intervention)
- PeaceBuilders (school-based intervention)

3.1.1 Background

In Australia, responsibility for juvenile justice lies with the states and territories and involves both juvenile justice agencies and other justice agencies such as the police and the courts (AIHW, 2008). The Juvenile Justice System deals with juvenile offenders aged 10-17 years. Children younger than that cannot be convicted of an offence and once a person reaches 18 they enter the adult justice system.

When a young person is convicted of a crime a magistrate has a choice from a range of penalties depending on the severity of the offence. Custodial sentences involve detention or imprisonment. Adult community based order may be set for a young person aged 17. For less serious offences a young person may be placed under a Youth Intensive Supervision Order, which may or may not include detention, or a Youth Community-Based Order, often involving community-based work or course based work or some form of rehabilitation. For minor offences no punishment may be imposed but conditions set, such as a good behaviour bond or fines and restitution.

The number of persons aged 10 to 17 years in Australia in detention has generally declined since the early 1980's, however, in 2006 there were 601 juvenile males and 50 juvenile females held in detention (Taylor, 2007). During the 2006–07 financial year, a total of 10,675 juveniles were under juvenile justice supervision in Australia (Richards, 2009). On an average day in 2006–07, there were around 6,000 young people under supervision—around 5,000 in community-based supervision and nearly 1,000 in detention (AIHW, 2008). Of all juveniles under supervision in this period 83% of these juvenile offenders were under community-based supervision and 46% were under detention based supervision, meaning that 29 percent experienced both community- and detention based supervision during the year (Richards, 2009).

There are, however, some trends in the data that are of concern. The younger people are when they first enter juvenile justice supervision, the more supervision periods they are likely to complete compared with those who are older (AIHW, 2008). In addition those who were younger at their first supervision were also more likely to spend time in sentenced detention rather than sentenced community-based supervision (AIHW, 2008). Early aggressive behaviour is a risk factor for later violence and criminal behaviour (Mytton, et al. 2006). There is also a link between child maltreatment, particularly repeated maltreatment and later juvenile offending (Stewart, et al. 2005). Positive family relationships and school bonding have been shown to be protective against involvement in crime while early academic failure and association with negative peers later in adolescence are linked with greater risk of involvement in crime in later adolescence (Fleming, et al. 2010).

A recent study of the influence of parental offending on juvenile offending found that if both parents were criminal then the child had a higher risk of offending (Nijhof, et al. 2009). The authors also found that the seriousness of the father's offending had a positive effect on the child's offending but that the seriousness of the mother's offending had a negative effect on the child's offending.

Gatti, et al. (2009) studied the negative effect of juvenile contact with the justice system, increasing the likelihood of youth becoming involved in a criminal career, and recommended the implementation of early intervention programs to reduce the number of minors becoming involved with the justice system. For the 2006-07 financial year, depending on jurisdiction, between 39% (NT) and 71% (Tasmania) of young offenders were diverted from the criminal justice system (Richards, 2009).

While previous data has shown an increase in juvenile offenders involved in the assault of another person and an increase in the involvement of girls in such crimes as assault (National Crime Prevention, 1999), a recent report indicates that juvenile contact with the justice system has declined, mainly as a result of Australian policy that treats juveniles differently, using custody as a last resort (Richards, 2009).

Most recent crime statistics indicate that only a minority of alleged offenders were juvenile and the majority of alleged juvenile offenders are male (Richards, 2009). Over time the ratio of adult to juvenile assault cases dropped for males and for females between the periods 1973-74 and 1993-94 and the ratio of boys arrested for assault to girls arrested for assault dropped in the same period (National Crime Prevention, 1999). The majority of juvenile offenders coming in contact with police are older (15-17 years), property crime was the main reason juveniles came into contact with the police with less than 20% of contact being due to crimes against the person, over one-third of all robbery offences were alleged to be committed by juveniles (Richards, 2009).

There is a disproportionately high number of young alleged offenders who are Aboriginal or Torres Strait Islanders (Richards, 2009). Only 5% of Australians aged 10–17 years are Indigenous, but Indigenous young people were 14 times more likely to be under supervision than non-Indigenous young people in 2006–07 (AIHW, 2008). In New South Wales, Queensland and Western Australia Indigenous persons aged 10-14 years made up the majority of juveniles in detention in that age group while in the 15-17 years age group Indigenous persons comprised the majority of juveniles in detention in Queensland, Western Australia and the Northern Territory (Taylor, 2007).

The prevention of and early intervention in behavioural problems and criminal activity among young people has the potential to provide significant gains for communities, families and young people, including young offenders. A broad range of prevention and early intervention programs have been developed that follow the child's development from infancy and early childhood, through the school years and into adolescence where serious problems may begin to emerge. Custody diversion, such as cautions or family conferencing, can also help in reducing the number of young people entering the criminal justice system.

3.1.2 The evidence base

Interventions that best help young people are those based upon principles of participation and social inclusion, including young people themselves (White, 2007). A recent review of effective interventions (AIC, 2003) found that those programs that are targeted at the individuals needs are likely to be most effective.

In particular social competence training, family conferencing, education style programs, comprehensive programs and programs targeting specific groups were found to be most effective (AIC, 2003).

Interventions that use a developmental approach are often targeted at young and school aged children with a focus on reducing aggression and increasing social competence. A meta-analysis of school-based interventions for aggressive and disruptive behaviour found that the most effective programs were universal programs delivered in schools and targeted programs for selected / indicated children who participated in the programs outside their regular classes (Wilson and Lipsey, 2007). A review of school-based prevention programs for children identified as aggressive or at risk of being aggressive found that they do improve behaviour for primary and secondary students in groups consisting of boys and girls or boys only (Mytton, et al. 2006).

In Australia mentoring has been used effectively as part of programs for Aboriginal and Torres Strait Islander youth (Hartley, 2004). Youth from environmental risk and disadvantaged backgrounds are most likely to benefit from mentoring programs (DuBois, et al. 2002). Mentoring for young Aboriginal and Torres Strait Islander offenders is most effective when there are strong links with Aboriginal and Torres Strait Islander communities and services, and when historical, cultural and social background influences are taken into account (ARTD Management and Research Consultants, 2001).

Importantly though, research has found that benefits of mentoring programs are often modest and may disappear over time unless they are based on theoretical and empirical 'best practice' and strong relationships are emphasised (DuBois, et al. 2002; AIC, 2003). Evaluation of an Australian pilot mentoring program found that while mentoring could be effective for young offenders, its scope is limited and should be considered only one element of a larger strategy for young offenders (Delaney and Milne, 2002).

Mediation in the form of family conferencing is an option increasingly used as a custody diversion option for young offenders and appears to be effective in reducing the likelihood of a young person continuing to offend (AIC, 2003). A review by Polk (2003) found that Indigenous offenders were underrepresented in family conferencing and that there were differential effects for girls compared to boys. Maxwell and Kingi (2001) found that girls were less responsive to family group conferencing, possibly because girls were less likely to reach agreement and felt less included in the process, more intimidated and unable to contribute. Polk (2003) also argued that as conferencing requires more resources than other options it should be kept for more serious cases.

In a review of school-based secondary prevention programs aimed at reducing aggressive behaviour (Mytton, et al. 2006) results indicated these programs could produce improvements in behaviour. In particular, interventions designed to improve relationship or social skills may be more effective than interventions designed to teach skills of non-response to provocative situations (Mytton, et al. 2006).

A review of parenting and family interventions (Woolfenden, et al. 2001) found that parenting interventions for juvenile delinquents and their families have beneficial effects on reducing time spent in institutions (e.g. prison, detention). The authors also found that there is evidence that these interventions may also reduce rates of later arrest but that results were variable and should be interpreted with caution (Woolfenden, et al. 2001). In particular there was insufficient evidence that parenting and family interventions reduced the risk of incarceration (Woolfenden, et al. 2001).

Multisystemic therapy (MST) has emerged as a comprehensive program for youth with aggressive behaviour and at risk of or having already offended. MST is a family-based therapeutic approach that has demonstrated long term reductions in criminal activity, violent offences, drug-related arrests and incarceration (Bourduin, 1999). Swenson and colleagues (2005) described the implementation of MST at community level and argue that programs that work to reduce criminal behaviour in adolescence are family-based behavioural interventions and structured pro-social neighbourhood projects. In contrast though, a systematic review of MST by Littell, Poppa and Forsythe (2005), using a rigorous intent-to-treat approach, did not find any substantive benefit in relation to restrictive out-of-home placements and arrests or convictions compared to usual services.

The evidence suggests that family and parenting interventions for juvenile delinquents and their families, particularly Multisystemic Therapy and Multidimensional Treatment Foster Care, have beneficial effects in reducing the length of time spent by juvenile delinquents in institutions subsequent to these interventions (Woolfenden, et al. 2001).

Multidimensional Treatment Foster Care (TFC) is a foster family-based intervention tailored for at-risk young people and (if appropriate) their biological/adoptive families. A review conducted by Macdonald and Turner (2008) found that there was some decrease in antisocial behaviour, days spent running from placements, the number of criminal referrals and time spent in locked settings

and improvements in school attendance, homework completion and finding work associated with treatment foster care. While foster care deserves a review of its own, more information can be found at TFC Consultants, Inc. http://www.mtfc.com/TFC_Consultants.html. This intervention was also recommended for the indicator 'Proportion of young people who have a trusted adult in their life'.

Armeliuss and Andreassen (2007) reviewed cognitive behavioural therapy (CBT) for treating antisocial behaviour in youth in residential treatment and found that while it was more effective than standard treatment there was no evidence that CBT was any more effective than alternative treatments. Fisher, Montgomery and Gardner (2008) reviewed CBT interventions in relation to gang membership and were only able to find marginal positive effects, mainly due to flawed study design.

Fisher, Gardner and Montgomery (2008) reviewed education and employment interventions aimed at reducing gang involvement but did not find any evidence that these strategies were effective. This may be because such programs are often run in isolation from other interventions and may not actually provide long term employment (AIC, 2003).

Interpersonal skills training as an isolated intervention has limited effectiveness unless it is part of an overall strategy or system of care (Taylor, et al. 1999).

Intensive regimes such as boot camps are unlikely to be effective in reducing recidivism unless they also contain a therapeutic component and taught skills that the young person could generalise to their regular social environment (AIC, 2003). The literature indicates that when a young person returns to their normal social environment and there is no provision of aftercare, short-term positive gains made during a programme may be rendered ineffective (AIC, 2003; Singh and White, 2000).

Programs aimed at scaring young people into not offending have had some popularity but have not held up under research. Petrosino and colleagues (2002) conducted a review of programs that involve organised visits to prison by juvenile delinquents or children at risk for criminal behaviour and found that such programs are more harmful than doing nothing. Results indicated that these programs not only fail to deter crime but actually lead to more offending behaviour (Petrosino, et al. 2002). Other programs found to be ineffective include intensive supervision probation and peer mediation (AIC, 2003).

3.1.3 Selection of interventions

These interventions include those listed below.

- Communities That Care (community-based intervention)
- Multisystemic Therapy (family-based intervention)
- PeaceBuilders (school-based intervention)

Communities That Care is a comprehensive community-wide program that focuses on modifying risk and protective factors by providing a framework for community prevention efforts. Communities That Care was originally developed in the United States where it was implemented in 500 communities with federal government support (Utting, 1999). Pilot programs have also been implemented in the UK (Crow, et al. 2006) and the Netherlands (Jonkman, et al. 2005) and the program is currently being trialled in a number of communities in Australia (Toumbourou, 1999).

Communities That Care (CTC) aims to promote the healthy development of children and young people through long term community planning to prevent health and social problems. CTC is theoretically based on the social development model as described by Catalano and Hawkins (1996). A number of steps are included in the CTC approach:

- Community leaders with financial and organisational influence are identified and invited to participate in training in the CTC approach.
- A Community Prevention Board is then established and training provided for members.
- Information is then gathered about community needs through school surveys, accessing local knowledge, demographic data and service analysis.
- A list of appropriate interventions is then developed to form the basis for local community strategies (Toumbourou, 1999).

Preliminary results from the US and the UK have shown that effective implementation of the CTC approach is both sustainable (Harachi, et al. 1996) and can produce impacts on problem behaviour among youth in participating communities (Crowe, 2006; Jonkman, et al. 2005).

Multisystemic Therapy (MST) is an intensive family-based approach for youth with social, emotional and behavioural problems aimed at improving antisocial behaviour and reducing youth criminal activity and other negative behaviour. The aim of MST is to empower parents with the skills and resources needed to address difficulties in raising adolescents and to empower adolescents to deal with family and other problems (Borduin, 1999).

MST treatment is conducted in the youth's natural setting to allow the individual young person and their family to learn to function normally in their home, school and community. MST is tailored to the young person's individual circumstances, drawing on validated treatment strategies, including strategic family therapy, behavioural parent training, structural family therapy and cognitive behavioural therapy (Borduin, 1999).

A review by Littell and colleagues (2005) found that MST was effective as a comprehensive intervention, based on current knowledge and theory about the problems and prospects of youth and families. Earlier research found that MST was more effective than individual therapy in improving anti-social behaviour and family problems and that it was also more effective in reducing re-arrests over a 4-year period (Borduin, et al. 1995).

A recent randomised controlled trial found that MST showed considerable promise for meeting the needs of young sexual offenders (Letourneau, et al. 2009). Relative to youth who received usual treatment the authors found that youth who received MST showed significant reductions in sexual behaviour problems, delinquency, substance use, externalizing symptoms and out-of-home placements. Another recent study of youth sexual offenders comparing MST treatment with usual community services found that youth who had participated in the MST program reported decreases in person and property crime, 80% less sexual offences at follow up, 73% fewer other offences, 80% fewer days spent in incarceration and a lower re-arrest risk compared to usual community services (Bourduin, et al. 2009).

PeaceBuilders is a universal, school-based violence prevention program aimed at altering the school climate through teaching students and staff ways to improve child social competence and reduce aggressive behaviour (Flannery, et al. 2003). The program focuses on changing circumstances that lead to aggressive behaviour, reward prosocial behaviour and provide strategies to avoid reinforcing negative behaviour (Vazsonyi, et al. 2004). PeaceBuilders five main strategies include:

- PeaceBuilders praise people
- PeaceBuilders avoid put-downs
- PeaceBuilders seek wise people
- PeaceBuilders notice hurts they have caused
- Peacebuilders right wrongs

A study by Flannery and colleagues (2003) found that schools where the program was implemented had significant gains in student social competence, self reported peace-building behaviour and reductions in aggressive behaviour compared to wait list schools after one year. Effects on aggression and pro-social behaviour were also maintained after two years (Flannery, et al. 2003).

Another study by Vazsonyi and colleagues (2004) found that, for schools participating in a PeaceBuilders intervention, children who were at high-risk for future violence reported more decreases in aggression and more increases in social competence compared to medium and low risk children.

PeaceBuilders was implemented in a pilot school in Australia in 1997 (Christie, et al. 1999). Preliminary results indicated a number of positive changes in the school context, in particular there were reductions in police call-outs to the school and parents being called to the school and increased positive contacts between police and the school and increased voluntary parent visits to the school.

3.1.4 Discussion

The development and implementation of effective programs that reduce juvenile involvement in criminal activity and alternatives to juvenile detention are likely to reduce the impact of crime and violence on both the community and young people themselves. While the number of young people in detention has declined in recent years there are still worrying trends in the rising involvement of young people in assault, particularly girls. The over representation of Indigenous young people in the juvenile justice system is also an issue that needs to be addressed.

Programs that are based on participation, social inclusion and targeted at young peoples needs are most effective. Comprehensive programs based in either school or community settings and address a range of developmental stages and levels of involvement aggressive, violent or criminal behaviour have been developed through a large body of research. The programs chosen for this catalogue of interventions are considered to have good evidence of effectiveness as well as relevancy in the Australian context.

Communities that Care recognises that there are often larger issues that need to be addressed outside the individual for individual changes to occur and be sustained. Multisystemic therapy on the other hand aims to address the needs of the individual to create lasting change. PeaceBuilders takes a development approach aimed at improving relationships between young people as well as their relationships between adults and the general community. Both Multisystemic Therapy and PeaceBuilders have good evidence for effectiveness and Communities that Care is a promising program. The continued implementation and evaluation of these programs in the Australian context is encouraged.

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Table 1 *Number of young people convicted and placed on a community order: recommended strategies*

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(22.1) Communities that Care	4	Yes	Yes	Yes	UNIVERSAL
(22.2) Peacebuilders	2	Yes	Yes	Yes	LOW SES INDIGENOUS CALD
(22.3) Multisystemic Therapy (MST)	2	Yes	Yes	Yes	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 (e.g., pre and post-testing, post-testing only, or qualitative methods) or historical comparison group (e.g., normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (e.g., 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 (e.g. 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 trialled with people in disadvantaged communities, Indigenous people and/or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

3.1.6 Updated catalogue entries

Recommended strategy 22.1: Number of young people convicted and placed on a community order	
Name of intervention	Communities that Care
Organisation	Substance Abuse and Mental Health Services Administration (SAMHSA) US Department of Health and Human Services.
Brief literature review	Communities That Care (CTC) is a community-based approach to crime prevention that aims to promote the healthy development of children and young people through long term community planning to prevent health and social problems. In the US evaluations have found that the CTC model was effective in mobilising community prevention boards to obtain training, conduct assessment processes and implement promising risk-reduction strategies (Harachi, et al. 1996). A pilot program In the UK (Crowe, et al. 2006) showed that, where the program was implemented as planned, there were positive impacts on problem behaviour (RR 4.5) when compared to students of the school who lived outside the implementation area (RR 12.0). CTC is currently being trialled through several pilot projects in Victoria. Results are yet to be fully reported, however, it appears that the CTC planning process has been successful in at least some areas in all three sites (Centre for Adolescent Health, 2005).
How and why does this intervention work?	CTC is a program for coordinating local prevention efforts that is theoretically based on the social development model as described by Catalano and Hawkins (1996). CTC initially identifies community leaders with financial and organisational influence. Training in the CTC approach is provided to these individuals. A Community Prevention Board is then established and training provided for members. The process then shifts to information gathering about community needs through school surveys, accessing local knowledge, demographic data and service analysis. A list of appropriate interventions is then developed to form the basis for local community strategies (Toumbourou, 1999).
On what population does this intervention work best?	This program has been implemented at a community level and no specific populations have been reported. CTC was originally implemented in more than 500 communities in the US with federal government support (Utting, 1999). This program has also been implemented in the UK (Crow, et al. 2006) and the Netherlands (Jonkman, et al. 2005). Three pilot programs have been implemented in Australia through the Centre for Adolescent Health trial. These include Greater Bunbury in Western Australia, Mornington Peninsula and Ballarat.
Where will this intervention work best?	Communities That Care is a community based process that may include interventions that based around families, schools, community based youth and the overall community.
What is required to implement this intervention?	This program involves training for project leaders and stakeholders. A survey is also conducted to determine community needs.
Resources and contact information	A number of downloadable resources, including introductory material, a Getting Started guidebook, prevention strategies guide, Youth Survey and training materials are available from the Substance Abuse and Mental Health Services Administration (SAMHSA) website: http://preventionplatform.samhsa.gov Additional contact: Centre for Adolescent Health - John Toumbourou Ph: 0419 582 889. http://www.rch.org.au/cah/research.cfm?doc_id=10596
References	Catalano and Hawkins (1996); Centre for Adolescent Health (2008); Crow, et al. (2006); Harachi, et al. (1996); Jonkman, et al. (2005); Toumbourou (1999); Utting (1999).

Recommended strategy 22.2: Number of young people convicted and placed on a community order	
Name of intervention	PeaceBuilders
Organisation	PeacePartners Inc.
Brief literature review	<p>PeaceBuilders is a school-based, universal program aimed at reducing levels of violence and antisocial behaviour. PeaceBuilders has been extensively evaluated in the schools in the USA (Flannery, et al. 2003; Flannery and Vazsonyi, 2001; Vosskuhler and Issman, 2003; Vazsonyi, et al. 2004) where findings have shown effects in both the school and the community that include decreases in aggression, increases in social competence and prosocial behaviour and improved relationships with authorities such as the police.</p> <p>PeaceBuilders was also implemented and evaluated in an Australian school in South East Queensland (Christie, 1999). The school was located in a community that was characterised generally as low-socioeconomic, in a high crime and drug use area, with a high population of young people and ethnically diverse. Within the first 18 months of implementation there was a fall in detentions and suspensions, a positive increase in school satisfaction markers, a positive increase in reading markers, an increase in parent school involvement, reduced staff turnover and fewer police call-outs.</p>
How and why does this intervention work?	<p>PeaceBuilders addresses risk factors, which predict violence, bullying and drug and tobacco use. Participation in PeaceBuilders reduces aggression, promotes language development, teaches pro-social skills, increases parenting skills, creates inclusion for special needs children and fosters safer communities.</p> <p>The program focuses on changing circumstances that lead to aggressive behaviour, reward pro-social behaviour and provide strategies to avoid reinforcing negative behaviour (Vazsonyi, et al. 2004). PeaceBuilders five main strategies include:</p> <ul style="list-style-type: none"> PeaceBuilders praise people PeaceBuilders avoid put-downs PeaceBuilders seek wise people PeaceBuilders notice hurts they have caused Peacebuilders right wrongs
On what population does this intervention work best?	PeaceBuilders was created for the young child, child, pre-teen and teenage children. The program is effective in both low socioeconomic / high crime communities and schools as well as culturally and linguistically diverse populations.
Where will this intervention work best?	This intervention works best when initiated in a school setting.
What is required to implement this intervention?	A teacher's kit, staff guide, leadership guide, research and evaluation tools and materials for specific issues and initiatives are available. Materials are supplied on a CD to education, government and community development organisations. Pricing is negotiated depending on entity and license provided.
Resources and contact information	<p>http://www.peacebuilders.com/ PeacePartners Inc. 741 Atlantic Avenue Long Beach, CA 90813 Phone: (562) 590-3600 Fax: (562) 590-3902 Email: info@peacebuilders.com</p>
References	Flannery and Vazsonyi (2001); Flannery, et al. (2003); Christie, et al. (1999); Vosskuhler and Issman (2003).

Recommended strategy 22.3: Number of young people convicted and placed on a community order

Name of intervention	Multisystemic Therapy (MST)
Organisation	MST Services
Brief literature review	MST is an intervention program for youth already displaying severe multidimensional problems such as antisocial behaviour and juvenile offending. This program has been extensively evaluated in the USA where was shown to reduce aggression, levels of alcohol and drug use, re-arrest rates and increase family cohesion (Henggeler, 1992 and 1993; Borduin, 1995).
How and why does this intervention work?	MST is based on a model originally developed in mental health and provides a case management approach to dealing with at-risk young people (AIC, 2002). A number of factors affect youth behaviour (youth characteristics, family relations, peer influences, community influences) and, depending on individual circumstances, each of these factors can be changed to promote positive change. The program is conducted in the youth's natural setting rather than an external location so that the youth and their family can learn to function in their natural environment once the treatment is over.
On what population does this intervention work best?	<p>MST is aimed at youth who are chronic, violent or substance abusing juvenile offenders at high risk of out-of-home placement or incarceration. Evaluation showed that MST was effective for youths of different ethnic backgrounds, ages, genders, prior arrest and incarceration records and different family, peer and behavioural problem profiles (Henggeler, et al. 1991, 1992, 1993).</p> <p>Evaluation has shown mixed results for drug abusing young offenders and young people in psychiatric crisis (Henggeler, et al. 1999a, 1999b). MST may need to be adapted to serve population group outside the 'typical' juvenile offender.</p>
Where will this intervention work best?	For MST to be effective it must be delivered under regular, expert supervision and adhering to strict MST protocols.
What is required to implement this intervention?	<p>There is no set curriculum for this program. MST treatment is provided by Masters-level therapists who work as employees of the MST program. Staff training and program development is provided by MST services and includes the following:</p> <ul style="list-style-type: none">Organisational assessment and assistanceAn initial five-day training sessionWeekly MST clinical consultationsQuarterly booster training sessions andOngoing monitoring for treatment fidelity and adherence.
Resources and contact information	<p>Marshall E Swenson, Vice President, New Program Development, MST Services, 701 Johnnie Dodds Blvd., Suite 200, Mt Pleasant, SC 29464</p> <p>Tel: 843 856 8226 ext 215 Direct: 843 284 2215 Fax: 843 856 8227</p> <p>Email: marshall.swenson@mstservices.com</p> <p>Website: http://www.mstservices.com</p>
References	Henggeler, et al. (1991); Henggeler, et al. (1992); Henggeler, et al. (1993); Bourduin, et al. (1995); Henggeller (1999a); Henggeller (1999b).

3.2 Proportion of young people who have a trusted adult in their life

For this update, the literature search re-examined outlined in the first version of this narrative review. An additional focus was on new citations based on the previously identified review articles and recommended and named interventions. Searching of relevant databases was conducted using the search terms ‘trusted adult’ and ‘social support’ (publication years = 2008 to present).

3.2.1 Background

A supportive relationship with a trusted adult is important for ensuring healthy adolescent development. A trusted adult can include biological parents, foster carers, older siblings, mentors and any other adult who provides the young person with support and encourages healthy and pro-social behaviour.

This concept is increasingly recognised as important given that young people who lack supportive relationships with a trusted adult are at an increased risk of delinquency, substance use, conduct problems, poor academic performance, emotional problems and suicide (Carbone, et al. 2007; Griffin, et al. 2000; Mak, 1994; Stewart-Brown, 2008).

There are several factors that reduce the likelihood that a young person will have a supportive relationship with a trusted adult. These include a family background with a low socio-economic status, single-parent families and poor parenting skills (e.g. parental neglect, overprotection, poor communication) (Beyers, et al. 2004; Fergusson, et al. 2000; Gorman-Smith, et al. 1996; Griffin, et al. 2000; Mak, 1994; Stewart-Brown, 2008).

Adolescents in foster care settings also lack supportive relationships with trusted adults given that they have backgrounds characterised by familial dysfunction and social problems (Carbone, et al. 2007; Miller, et al. 2000). Young people with Indigenous or culturally and linguistically diverse (CALD) backgrounds are also less like to have a supportive relationship with a trusted adult (Astone and McLanahan, 1991).

Although Victorian data are not currently available specifically on this indicator, other survey data give an indication of the proportion of young people who have a trusted adult in their life. In a recent AIFS study of children in out-of-home care in Victoria, 68.5 per cent of children reported that they had a supportive adult other than their carer / parent whom they could turn to in a crisis (AIFS, 2008, cited in DEECD, 2009). In another survey, it was found that “family, parents and particularly mothers, remain the central and dominant influences in young people’s lives” (YouthSCAN 2007, cited in DEECD, 2009, p. 100). The majority of those aged 14–17 years who were surveyed by YouthSCAN agreed with the statement that ‘family is the most important thing to me’, and three-quarters (75 per cent) reported having a ‘great deal’ of confidence in parental advice (YouthSCAN, 2007, cited in DEECD, 2009, p. 100).

3.2.2 The evidence base

A number of strategies have been developed to promote supportive relationships between trusted adults and at-risk youth. These strategies generally aim to achieve this by improving the skills of parents or foster carers, or by providing suitable adult mentoring for at risk youth.

The quality of the evidence base for these strategies is mixed. Some strategies have been evaluated in a range of different settings and populations using randomised controlled trials (RCTs) or prospective studies with appropriate control groups. In contrast, other programs have only been evaluated in a limited number of settings and populations using less robust research designs.

Nevertheless, the evidence base is of sufficient quality to conclude that parent skills training, foster care training and adult mentoring programs can be effective in promoting adult – adolescent relationships, and improving adolescent outcomes. The programs that are most effective are those that are easily accessible, where the aim is to build positive social networks of support for

both the adolescent and adult. However, with the exception of Big Brothers Big Sisters, these strategies have rarely been evaluated in CALD or Indigenous populations.

Strategies involving intensive therapy-based interventions (e.g. cognitive-behavioural therapy) were not considered for this indicator, as these are expensive and time consuming and are therefore not accessible for at-risk adolescents and their parents or foster carers.

3.2.3 Selection of interventions

A total of seven major strategies / interventions that aim to enhance adult-adolescent relationships were identified through the literature review; four of these are included in the final catalogue. The evidence regarding the efficacy of each intervention is discussed below.

Families and Schools Together (FAST), Strengthening Families Program, Teen Triple P, Parenting Adolescents Wisely (PAW) and Systematic Training for Effective Parenting (STEP) are skills-based training programs for parents.

FAST is an early intervention school based program that enhances support networks for families and children, increases parental involvement and prevents at-risk behaviours in children aged 6 to 12 years (Family Service Canada, 2005; Layzer, et al. 2001; McDonald, et al. 1997). The program involves groups of 5 to 15 families meeting on a weekly basis over a period of eight weeks. The meetings are structured and involve activities such as family communication games, role playing and group feedback, play therapy and shared meals. After completing the program, families attend a graduation ceremony and maintain support networks through informal monthly meetings for up to two years (McDonald, et al. 1997).

RCTs, pre – post test studies and case reports indicate that FAST leads to improved behavioural outcomes in children aged 6 to 12 years (Layzer, et al. 2001; McDonald, et al. 1997; Terrion, 2006). For example, a nationwide evaluation of FAST in approximately 1500 Canadian children indicated that the program led to a 25% decrease in ratings of problem behaviours (Family Service Canada, 2005). Evaluations of the program in the Northern Territory have also shown some positive outcomes for Indigenous youth (Seiffert, 2006; McDonald, et al. 2007). These results indicate that the FAST program is effective in improving the long term behaviour of children and adolescents at risk of academic failure, delinquency and psycho-social problems. As a consequence, this program is included in the catalogue.

Triple P (Positive Parenting Program) is a parent training program that incorporates media and information based strategies, brief consultation primary care interventions, intensive parent training, and enhanced behavioural family interventions (Ralph and Sanders, 2004; Sanders, et al. 2003). It was initially developed for parents of children aged 0 to 12 years, and several RCTs demonstrate that it is effective in improving child outcomes (Bor, et al. 2002; Markie-Dadds and Sanders, 2006; Sanders, et al. 2000; Thomas and Zimmer-Gembeck, 2007).

Teen Triple P is based on the Triple P, and has been developed for parents of adolescents to promote healthy adolescent development and prevent delinquency and behavioural problems (Sanders, et al. 2000; Sanders, et al. 2003). Teen Triple P consists of an eight week group-based family intervention program aimed at enhancing parenting skills through observation, discussion, practice and feedback. Ralph and Sanders (2003; 2004) evaluated the effectiveness of the Group Teen Triple P (in Queensland) using a pre – post test design with no control group. They found that the Group Teen Triple P led to significant improvements in parenting styles, improved parental self-efficacy, self-sufficiency and self management, and reduced parent – adolescent conflict (Ralph and Sanders, 2003; Ralph and Sanders, 2004). The effect sizes were moderate and were maintained at 6 months follow-up. These results suggest that the Teen Triple P could be effective in improving parental skills and ultimately adolescent outcomes, and has therefore been included in the catalogue.

Parenting Adolescents Wisely (PAW) is a brief (three hours) interactive CD program developed to improve parenting skills such as active listening and problem solving (Gordon, 2000). The

program is comprised of interactive scenarios depicting common family problems; appropriate behaviours are modelled and are accompanied by quizzes to reinforce the content. PAW has been shown to lead to significant improvements in ratings of adolescent behaviour and parent knowledge over a period of four months, with moderate effect sizes (Kacir and Gordon, 1997). Two pre – post test studies have also indicated that PAW is associated with significant improvements in parent behaviours (O'Neill and Woodward, 2002; Segal, et al. 2003); the effect sizes observed in these studies were moderate. However, this program is not included in the catalogue given that evidence of its effectiveness in at-risk youth (e.g. CALD, low income families) has not been determined.

The Strengthening Families Program is a 14 session, skills training program specifically designed for high-risk families. It is typically held at schools where parents and children meet each week for a period of seven weeks. It is comprised of separate child and parent training sessions which are followed by combined sessions where the skills are practiced and reinforced (Molgaard, et al. 1997). A longer and more intensive version is also available for high-risk teenagers.

The efficacy of the teenage version of the Strengthening Families Program on US families with children aged 11 to 14 years has been evaluated through three RCTs. These studies indicated that the Strengthening Families Program led to improvements in parenting behaviours, which were associated with improvements in adolescent outcomes (e.g. substance use, conduct problems, school-related problem behaviours, peer resistance) (Molgaard, et al. 1997). Spoth, et al. (2001; 2005) also found that the program led to a reduction in alcohol use, with small to moderate effect sizes. The available evaluation data indicate positive benefits but are limited in scope. As a consequence this strategy is not included in the final catalogue for this indicator (although it is included for the substance use indicators). More information, however, is available from the program's website (<http://www.strengtheningfamiliesprogram.org/>).

Systematic Training for Effective Parenting (STEP/Teen) is a training package targeted towards parents of teenagers. The package involves seven sessions that the parent can complete at home that addresses a range of parenting issues (STEP Publishers, 2008). Although it is claimed that the STEP package is one of the most commonly used parent training programs worldwide, empirical data do not support the effectiveness of STEP. For example, most studies indicate that STEP has no effect on adolescent behaviour (Jackson and Brown, 1986; Robinson, et al. 2003). As such, this intervention is not included in the catalogue.

Multidimensional Treatment Foster Care (MTFC) is a foster – family community based intervention that targets children and adolescents at risk of multiple foster-care placements or restrictive placements (e.g. youth justice, hospitals) (Chamberlain, 2003; Macdonald and Turner, 2008). The program is managed by a program supervisor who identifies at risk adolescents (e.g. incarcerated juvenile offenders) and matches them to a foster carer, who has received additional training (McGuinness and Dyer, 2007). Together with the foster carer, the supervisor develops a behavioural management program tailored specifically for the adolescent (Chamberlain, 2003). This program aims to improve behavioural outcomes by rewarding positive behaviour, providing the adolescent with a supportive adult relationship, and limiting exposure to deviant peers (Chamberlain, 2003). The foster carer maintains regular contact with the program supervisor and receives additional support and advice as required. The program can also incorporate additional individual therapy for the adolescent (Chamberlain, 2003).

A systematic review of 40 evaluation studies conducted between 1976 and 1997 indicated that Multidimensional Treatment Foster Care led to improvements in social skills and reductions in problem behaviours with moderate to strong effect sizes (Reddy and Pfeiffer, 1997). RCTs have demonstrated that the program leads to significant reductions in delinquent behaviours in adolescent males and females released from juvenile detention (Chamberlain and Reid, 1998; Leve, et al. 2005). A case study has also indicated that the program leads to improved outcomes for at-risk adolescents (Chamberlain, 2003). The potential for the program to promote resilience among youth in the child welfare system has also been reported (Leve, et al. 2009). Findings from another evaluation support the long-term preventive effects of MTFC on adolescent girls'

pregnancy rates (Kerr, et al. 2009). Considering the level of evidence of effectiveness apparent in the literature, this strategy is included in the final catalogue.

Big Brothers Big Sisters is an international planned mentoring program targeted towards young people aged 7 to 17 years who are at risk of academic, psychosocial and / or behavioural problems. It is typically community or school based and involves trained staff screening adult volunteers and matching them to a young person. The Big Brother or Big Sister then meets regularly with the adolescent and provides mentoring, friendship and general concern for their well-being for a minimum of 12 months. Big Brothers Big Sisters is already established in Australia and operates in most states (Big Brothers Big Sisters Australia, 2008).

RCTs have demonstrated that Big Brothers Big Sisters leads to improvements in academic, psychosocial and behavioural outcomes (Grossman and Rhodes, 2002; Herrera, et al. 2007), reductions in substance abuse (Rhodes, et al. 2005) and improved self esteem (Turner and Scherman, 1996) in at risk youth. Other non-randomised studies indicate that Big Brothers Big Sisters programs lead to improvements in academic performance relative to control groups (Thompson and Kelly-Vance, 2001). The effect sizes observed in these studies are small, but are clinically significant (Du Bois, et al. 2002; Grossman and Rhodes, 2002; Thompson and Kelly-Vance, 2001). Studies also indicate that Big Brothers Big Sisters is cost effective, with the benefits of the programs largely outweighing the costs (Aos, et al. 2004).

In a survey of adults who were mentored as youth in Big Brothers Big Sisters in the United States, it was found that participation in the program had been very important in their lives. The program had a positive influence in their lives (particularly in such areas as self confidence, stability, goal setting, decision making, and success in terms of education and employment. The survey also found that more positive outcomes were associated with longer matches (more than three years) (Harris Interactive, circa 2009). The cost effectiveness of the program has also been reported in the Australian context. For instance, a recent study by Moodie and Fisher (2009) of Big Brothers Big Sisters Melbourne concluded the mentoring program represents excellent value for money.

3.2.4 Discussion

Four strategies are included in the final catalogue for this indicator. These include the FAST and Teen Triple P programs, which are group-based family training programs. These two programs have been shown to be effective in improving behaviour and psychosocial outcomes in at risk youth, and are suitable for implementation in Australia.

As noted above, adolescents in foster care settings are at an increased risk of a range of psychosocial problems and delinquency. Evaluation studies indicate that the Multidimensional Treatment Foster Care is effective in improving outcomes for adolescents in foster care settings, and as a consequence, it is also included in the final catalogue.

Big Brothers Big Sisters is included in the catalogue as a universal intervention to provide adult support to adolescents through mentoring. Numerous evaluation studies demonstrate that this strategy improves outcomes for at risk youth from diverse backgrounds. Furthermore, it is already established in most Australian states including Victoria and is therefore a convenient and effective program to target at-risk youth.

Three strategies were also identified during the literature search but these were not included in the final catalogue. The decision to omit PAW and the Strengthening Families Program is based on insufficient evidence for their effectiveness in at-risk youth, particularly those from CALD, Indigenous, and / or low-income families. STEP has been widely implemented and evaluated, particularly in the United States. However, the data indicate that this program has little or no positive impact on adolescent behaviour or outcomes. As a consequence, STEP was not included in the final catalogue.

Finally, it should be noted that other indicators in this Catalogue of Evidence (especially 'Proportion of young people who have someone to turn to for advice when having problems') are of relevance to this topic area.

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Table 2 *Proportion of young people who have a trusted adult in their life: recommended strategies*

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(21.1) Teen Triple P Positive Parenting Program	3	No	Yes	Yes	LOW SES
(21.2) Families and Schools Together (Teen FAST)	2	Yes	Yes	Yes	LOW SES CALD
(21.3) Multidimensional Treatment Foster Care	1	Yes	Yes	Yes	LOW SES
(21.4) Big Brothers Big Sisters	1	Yes	Yes	Yes	LOW SES 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 (e.g., pre and post-testing, post-testing only, or qualitative methods) or historical comparison group (e.g., normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (e.g., 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 (e.g. 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 trialled with people in disadvantaged communities, Indigenous people and/or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

3.2.6 Updated catalogue entries

Recommended strategy 21.1: Proportion of young people who have a trusted adult in their life	
Name of intervention	Teen Triple P Positive Parenting Program
Organisation	Triple P International
Brief literature review	<p>The Triple-P program is a comprehensive, multilevel system of parenting and family intervention. It consists of an eight week group-based family intervention program that aims to enhance parenting skills through observation, discussion, practice and feedback. Available data from several trials indicate that it has positive benefits on adolescent outcomes.</p> <p>The adolescent version of Group Triple P is currently being trialled in four Queensland state high schools.</p>
How and why does this intervention work?	<p>This program works by improving parenting skills (e.g. communication) and facilitating the development of positive relationships between parents and their teenage children.</p> <p>Teen Triple P has been evaluated via a randomised controlled trial of 771 adolescents from four Queensland schools (Ralph, et al. 2004). Adolescents were randomly allocated to the Triple P intervention or placed on a waiting list. The results demonstrate that over a period of six months there were significant improvements in parent and adolescent outcomes compared to the control group.</p>
On what population does this intervention work best?	This program is most effective in families where parental skills and knowledge are poor. This includes targeting high risk parenting factors such as overly harsh parenting, communication difficulties, parental monitoring of adolescents' activities and marital conflict.
Where will this intervention work best?	School and community settings
What is required to implement this intervention?	Accredited training materials (e.g. manuals) Provider training courses
Resources and contact information	Triple P International PO Box: 1300 Milton, Queensland, 4064, Australia Email: contact@triplep.net Ph: 61 7 3236 1212 Fax: 61 7 3236 1211 Website: http://www1.triplep.net/
References	Sanders, et al. (2000); Sanders, et al. (2003); Ralph, et al. (2003).

Recommended strategy 21.2: Proportion of young people who have a trusted adult in their life

Name of intervention	Families and Schools Together (Teen FAST)
Organisation	FAST National Training and Evaluation Center
Brief literature review	FAST is an early intervention/prevention school and community based program. It aims to provide support networks for families and children, increase parental involvement and prevent at-risk behaviours in young people aged 11 to 14 years. The program consists of eight weekly meetings attended by groups of families who engage in a range of activities such as family communication games, role playing and group feedback, play therapy and shared meals.
How and why does this intervention work?	<p>FAST works by building trust and support networks for families and children, increasing parent involvement with children both at school and at home, and enhancing social support networks.</p> <p>Layzer, et al. (2000) examined the impact of FAST on 407 adolescents in Canada through a randomised controlled trial. These adolescents were randomised into the FAST program or a control group. The results demonstrated that over a 12 month period, adolescents in the FAST program had improved behavioural outcomes relative to the control group.</p>
On what population does this intervention work best?	Adolescents who are at an increased risk of substance abuse, violence, delinquency and school failure.
Where will this intervention work best?	School based setting
What is required to implement this intervention?	Certified trained staff and school support.
Resources and contact information	<p>Families and Schools Together Inc. 2801 International Lane Madison, WI 53704-3151</p> <p>Phone: 608-663-2382</p> <p>Email: answers@familiesandschools.org</p> <p>Web sites: http://familiesandschools.org http://www.familiesandschools.com.au/</p>
References	<p>Family Service Canada (2005)</p> <p>Layzer, et al. (2000)</p> <p>Macdonald, et al. (1997)</p> <p>Seiffert (2006)</p> <p>McDonald, et al. (2007)</p>

Recommended strategy 21.3: Proportion of young people who have a trusted adult in their life	
Name of intervention	Multidimensional Treatment Foster Care
Organisation	TFC Consultants, Inc.
Brief literature review	This program targets adolescents placed in foster care homes who are at an increased risk of multiple foster-care placements or restrictive placements (e.g. youth justice, hospitals).
How and why does this intervention work?	<p>This program involves the identification of at risk adolescents and matching them to a foster carer, who has received additional training. A program supervisor develops a management program for the adolescent along with the carer.</p> <p>The program aims to improve behavioural outcomes by rewarding positive behaviour, providing the adolescent with a supportive adult relationship and limiting exposure to deviant peers.</p> <p>Two randomised controlled trials have examined the effect of this program in 79 adolescent male and 81 adolescent female juvenile offenders over a 12 month period (Chamberlain, et al. 1998; Leve, et al. 2005). The control group consisted of adolescent offenders receiving routine care. The results indicate that this program led to a reduction in delinquent behaviours and improved outcomes relative to the control groups.</p>
On what population does this intervention work best?	Young people in foster care settings who have experienced trauma, neglect, abandonment and have mental health problems, exhibit anti-social behaviours and/or have serious medical conditions.
Where will this intervention work best?	Foster care settings
What is required to implement this intervention?	Certified trained staff (program supervisors) and trained foster carers
Resources and contact information	<p>TFC Consultants, Inc. Gerard Bouwman, President 1163 Olive Street, Eugene, Oregon 97401 Telephone: 541-343-2388 ext. 204 Email: gerardb@mtfc.com Website: http://www.mtfc.com/</p>
References	<p>Macdonald and Turner (2008) Leve, et al. (2009) Kerr, et al. (2009)</p>

Recommended strategy 21.4: Proportion of young people who have a trusted adult in their life

Name of intervention	Big Brothers Big Sisters
Organisation	Big Brothers Big Sisters of Australia
Brief literature review	<p>Community based preventive program involving planned adult mentoring for young people aged 7 to 17 years at risk of academic, psychosocial and/or behavioural problem. It is widely used in a number of countries including Australia.</p> <p>Trained staff screen adult volunteers and then match them a young person of the same sex. The Big Brother or Big Sister then meets regularly with the young person for a minimum of 12 months and provides mentoring, friendship and general concern for the well-being.</p>
How and why does this intervention work?	<p>Big Brothers Big Sisters works by providing mentorship and adult support to youth who are at risk of psychosocial, behavioural and/or academic problems.</p> <p>This intervention has been evaluated through a number of randomised controlled trials and longitudinal studies. For example, Rhodes, et al. (2005) recently conducted a randomised controlled trial examining this intervention in 928 adolescents over a period of 18 months. The control group was comprised of adolescents placed on a waiting list for this program. The results demonstrated that adolescents in the Big Brothers Big Sisters program had improved behavioural outcomes compared to the control group. This effect was most pronounced in those who had been in the program for at least 12 months.</p>
On what population does this intervention work best?	Most effective in young people from low income, single-parent families, and also where psychosocial, behavioural or academic problems are emerging.
Where will this intervention work best?	In community and school settings.
What is required to implement this intervention?	Adult volunteers and trained staff to screen and match potential mentors to young people.
Resources and contact information	<p>Big Brothers Big Sisters of Australia Ltd Phone: +61 3 9489 4511 Fax: +61 3 9348 1273 Email: enquiries@bbbs.org.au Website: http://www.bigbrothersbigsisters.com.au/</p>
References	<p>Rhodes, et al. (2005) Royce (1998) Moodie and Fisher (2009) Harris Interactive (circa 2009)</p>

3.3 Proportion of early school leavers who are unemployed six months after leaving school

For this update, the literature search re-examined the search outlined in the first version of this narrative review. Key search terms were youth unemployment and school drop-out for the publication years 2008 - 2010, on the PsycINFO, ERIC and A+ Education databases. An additional focus was on web-sites identified in the previous and any new work in the area publicised by them. These websites included: Dusseldorp Skills Forum; the Victorian Local Learning and Employment Networks; Innovative Community Action Network; and the Organisation for Economic Co-Operation and Development. Additional literature searches were also conducted on known practice literature web-sites. These sites included: the California Evidence-Based Clearinghouse for Child Welfare; the Promising Practices Network; the Campbell Collaboration; the U.S. Department of Education's Institute of Education Sciences, What Works Clearinghouse; the Australian Council for Educational Research; the Commonwealth Department of Employment Education and Workplace Relations; and the Victorian Department of Department of Education and Early Childhood Development.

3.3.1 Background

This section is divided into four parts: description of the current situation; key data driving policy; current policy prescriptions; and recent government programs.

Description of the current situation

The current situation in Australia is best described by three papers: The Dusseldorp Skill Forum (2007); McMillan and Curtis (2008); and Sweet (2006).

The Dusseldorp Skills Forum (2007) states, 86% of teenagers (15-19 year olds) are either studying or working full-time. At 6 months, 9% of school leavers are unemployed. Teenage unemployment has fallen and part-time work has increased in past twenty years. The percentage of teenagers not in full-time study or work has fallen. The number of full-time jobs created for young people has remained static since 1995. Those completing Year 12 are less likely not to be working or studying full-time (Year 12 – 20%, Year 11 – 45%, Year 10 – 50%). Using OECD data, 24 year olds who have not completed school are twice as likely to be unemployed as those who have completed Year 12.

McMillan and Curtis (2008) show that school completion rates grew to the early 1990s, from 30% to 75%. They use questionnaire data to report that 19% of males and 13% of females do not complete Year 12, and that two thirds of early school leavers enter vocational education.

Sweet (2006) comments that school completion rates are not high by international standards and not much has changed in last decade. Teenage unemployment is high compared to OECD and higher than it should be in a healthy labour market. In response, the Australian government followed OECD advice by building better institutions and links between study and work to cater for the needs of these young people. Further work is needed in the area of separating compulsory and non-compulsory education – this creates more choice, larger student groups, more adult types of learning and adult disciplinary polices. This approach is more attractive to students and they are likely to learn more and therefore complete Year 12.

Key data driving policy

Key pieces of data driving policy in Australia include:

- The rise of part time work - young people under 25 now account for 28% of all part time workers in Australia (Abhayaratna, et al. 2008).
- Low academic achievement (Pienaar, 2006; Marks, 2007) and overall motivation for schooling / education (Dowson, et al. 2005) are major drivers for students leaving school early.

- Curtis (2007) reports using Longitudinal Surveys of Australian Youth (LSAY) data that apprenticeships programs contain more non school completers than do non apprenticeship courses and traineeships (50% vs 70-80%).
- With the recent focus on trade apprenticeships, a gender gap may be emerging, with women who leave school early obtaining casual, part-time and often low-skilled jobs, experiencing a highly competitive job market, with precarious and / or under-employment (Spierings, 2005; McMillan and Curtis, 2008).
- Using HILDA data, the Dusseldorp Skills Forum (2002) cites evidences that suggests that early school leavers are three times more likely to be unemployed than Year 12 completers. Also young women who did not complete Year 12 are three times more likely to be unemployed than males who did not complete Year 12.
- McMillan and Marks (2003) in their analysis of LSAY data from the Year 9 cohort from 1995 until 2001 find that on the surface non-completion of school was associated with higher unemployment. However this association was blurred when other factors like social background and educational performance were taken into account. In terms of unemployment of recent school leavers, students from low socioeconomic status families, non-English speaking families and poor levels of literacy and numeracy were more likely to be unemployed.
- Gorgens and Ryan (2006) show data which suggests that those early school leavers with VET qualifications have the same full-time employment rates as those who do complete Year 12. They also show that early school leavers who have a period of unemployment for six months or more but then completed a VET course have improvement full-time employment rates than those who do not. The improvement is in terms of 10 to 13 percentage points (8 years post Year 9).
- Generally part time work and study in limited amounts does improve employment outcomes. However the research is unclear, in terms of whether part-time impacts on education performance, or does poor educational performance impact on the decision to work (Abhayaratna, 2008). This is a classic example of the chicken or the egg problem. For example, Vickers, et al. (2003) using LSAY data found students who had a part-time job in school were more likely to be employed in full-time employment or have an apprenticeship or traineeship once they leave school. Early school leavers without any experience of part-time work are at more risk of being unemployed. However, in terms of the findings in relation to schooling, those male students working 5 to 15 hours per week in Year 9 were 40% less likely to complete Year 12 (NB: the poor completion rate was not significant for the sample of females).

Policy Prescriptions

Pienaar (2006) describes policy work in Australia, with better education pathways and flexible courses, improved funding and greater community employer partnerships and inter sectoral working a priority, but suggests more work is need in helping students who leave school early with no future plans and the need to develop employability skills in schools. Curtis (2007) in his study of LSAY data points out that those post-school who do not do any study have a greater risk of unemployment.

One alternative education pathway / flexible courses approach is the “VET in schools” program, for those students who find the academic curriculum a challenge, those in a “VET in schools” program in Australia, are likely to progress to further study, compared to those not in the program. As a group they are also more likely to be employed and interestingly they are more likely to go to university (Polesel, et al. 2007). Institutional and administrative inflexibilities between the school and TAFE sectors and the financial demands of VET make “productive and efficient cooperation so difficult”. These are “often most prevalent in those schools with the least capacity to address them” (Polesel, et al. 2007, pp. 8-9). “There is also a need to move beyond institutional

considerations and acknowledge that ultimately, it is the student, whether located in a school or in TAFE, who must be the focus of policy. It is the student as a client whose best interests must be determined in the provision of accessible and suitable options” (Polesel, et al. 2007, p. 9).

According to Karmel and Woods (2008), the VET sector is functioning well as a second chance for early school leavers aged 24 years and under. This group of students represented 41% of the student body in 2004. Some concerns were raised, however, with regard to completion rates for Certificate III or higher courses though more follow-up data is required.

The counter policy argument of extended schooling and government training programs is provided by the Centre for Independent Studies (Saunders, 2008) and it is to reduce the minimum wage (compensated by a change in the tax system) to allow more unskilled workers into the labour market, especially in the area of personal or home care services. This approach also recommends ending the unemployment benefit for early school leavers and the need for schools to better address social skills training. This view makes the case for the argument - why force students who are struggling to remain in school for another two years. If students are struggling at school, because of their academic ability it is unlikely that they will then go on and get higher qualifications and higher skilled jobs; as the report says “not everyone is capable of becoming a nurse, web designer or a mining engineer” (p. 3). In this context, learning or the developing employability skills is important see the DEEWR website (http://www.training.com.au/documents/Employability%20Skills_From%20Framework%20to%20Practices.pdf) for further work in this area.

Internationally, the OECD recently reported on policy reforms for the youth labour market in the Netherlands, these were in line with its own policy recommendations (OECD, 2008). It further recommended, increased early childhood education, more effective pathways between school and the tertiary sector, and shorter courses (two years long). Some additional reforms to counter barriers to the labour market include: the need to introduce a sub-minimum wage, the need for more short term / entry level contracts for young people using wage subsidies, and the evaluation of the high level of absenteeism in supported work programs for young people. Additional measures in the Netherlands system which have application to all systems, including better evaluation, a mutual obligation approach for any second chance programs, more locally based implementation, developing programs for more disadvantaged groups, and ensuring that there is no displacement effect with mutual obligation causing disadvantaged young people to move to disability schemes.

Recent government programs

The following list highlights the work of recent government programs in Australia. It includes:

- Re-engaging early school leavers with learning in South Australia with a focus on non mainstream environments – using flexible learning environments; community input - volunteers and partnerships in education programs; and alternative pathways (TAFE/VET), negotiated learning plans and intensive support (Stehlik, 2006).
- An alternative second chance education pathway within the South Australian Educational system is described by Cook and Bills (2005). It includes elements of adult learning, inter-agency collaboration, community leadership, advocacy and mental health support.
- Kellock (2002) examined the outcomes of transition workers in schools in Melbourne finding that the longer a transition worker operates in a school the fewer the percentage of students going to unknown destination and the higher percentage in training and full-time employment. This is further improved if the worker’s agency also provides employment service, providing greater number of early school leavers in full-time employment. Transition workers are not career guidance counsellors - they are formed as a partnership between a community based agency and schools, transition workers operate within schools providing assistance to potential early school leavers with employment and further training. While encouraging students to

complete their schooling if this appropriate, a one to one relationship is made with the student and contact is maintained after the student has left school.

Other noted Australian programs are Victorian Local Learning and Employment Networks (LLENs) and ICANs in SA. They bring together organisations and individuals to help students with transition to work and further education (Pienaar, 2006). The Innovative Community Action Network (ICAN) which brings together young people, their families, as well as community, business and government stakeholders to find local solutions to school retention issues (Social Inclusion Board, 2007). The Victorian LLENs program (<http://www.llen.vic.gov.au/default.asp>) brings together schools, TAFEs, employers and community organizations to work together in developing alternate education and training pathways (e.g. media production, retail) for young people in their area. Some programs include a mentorship component and are tailored to student needs.

At a Federal level, policy debate in vocational education has also focused around Commonwealth funding of Trade Training Centres in Schools or the development of Australian Technical Colleges. The Department has recently published its reporting and evaluation strategy (including KPIs and program logic) for Trade Training Centres in Schools (DEEWR, 2010).

Another useful development is the OnTrack research project in Victoria which follows up and examining student destinations post Year 12 completion. Recent evidence from the 2009 OnTrack survey shows the impact of the economic downturn on school leavers in Victoria (see Corrie and McKenzie, 2009). “The economic downturn appears to have had a proportionately larger impact on early school leavers than completers, with quite marked falls evident in the proportions in apprenticeships and traineeships and in full-time employment, and a concomitantly large increase in the proportion unemployed and looking for work” (Corrie and McKenzie, 2009, pp. 9-10). A recent OECD report is also concerned that the effects of the economic downturn will be “disproportionally felt by youth” (OECD, 2009, p. 1).

The Dusseldorp Skills Forum commenting on the current economic situation, reports in their annual report on young people that “the rate of unemployment among teenagers who were not in full-time education has risen from 12.2% in 2008 to 18.5% in 2009, one of the largest annual increases for teenagers over the past two decades” (from their website: <http://www.dsf.org.au/resources/detail/?id=144>).

3.3.2 The Evidence Base

A literature search was conducted into relevant programs or interventions designed to promote employment for early school leavers (thereby reducing the proportion who are unemployment at 6 months). The literature search included a number of components:

- Building upon the work from the Strategies for Gain report (Eagar, et al. 2005) and the Best Start Catalogue of Early Intervention Strategies for Children’s Health and Wellbeing report (Williams, et al. 2006a; Williams, et al. 2006b) looking for reviews of the evidence base
- Review of Best Start publications
- Building on the work of Lamb and Rice (2008)
- PsycINFO, MEDLINE and CINAHL (Term Analysis = MeSH and Thesaurus of Psychological Index Terms)
- Additional databases searched included: Sociological Abstracts and Education Resources Information Center (ERIC) data
- Plus feedback on search progress from the VIC Department of Education and Early Childhood Development (DEECD) - 24 July 2008

- 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 limited academic coverage in this area, finding no reviews comparing various educational and community interventions, and this led to a reliance on the practice literature to identify reports which compared interventions. An important source of information about interventions was the Dusseldorp Skills Forum (DSF) in Australia (website: <http://www.dsf.org.au/index.php>). This led to finding two practice reviews by Gauntlett, et al. (2001) and Pienaar (2006). Gauntlett, et al. (2001) provided a useful meta-analysis of literature for community based programs for early intervention and prevention in the area of youth unemployment, while Pienaar (2006) highlighted innovative education programs.

In the absence of comparative evidence, an examination of single or individual studies into programs or interventions designed to improve early school leaver employment was conducted (see below for the list of recommended strategies for this indicator).

3.3.3 Selection of recommended strategies

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

- Career Academies are drop-out prevention programs which create a school within a high school, providing alternative technical education curricula, career counselling, academic coursework and work experience with local businesses. The focus is on post-secondary education. Career themes covered in these mini-schools or learning communities include: health care, finance, technology, communications and government. Career Academies have been in operation for more than 30 years and have been applied, to varying degrees, in over 2500 schools in the United States (What Works Clearinghouse, 2006).
- Work Force Youth Unemployment Prevention program in Massachusetts is a multi-partner community program includes: classes; homework; field trips; try-out employment; counselling and home visits. Parents play a key role and the program serves 100 - 125 young people per year (Gauntlett, et al. 2001).

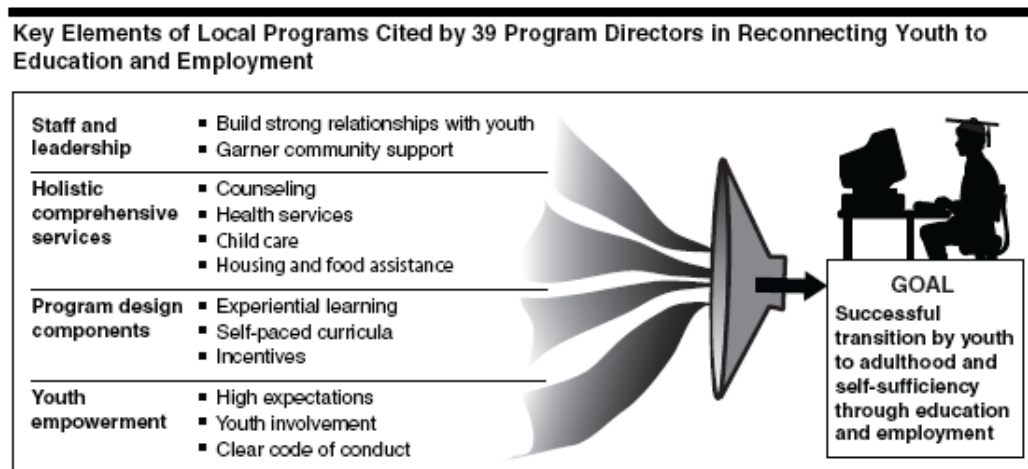
They represent two promising practices. Further details about these individual studies can be found in the catalogue.

3.3.4 Discussion

In terms of providing an overview of the area of improving employment for early school leavers only a few papers were found. This is not surprising as most of the interventions in this area are not distinct programs but require systemic or structural changes (e.g. alternative pathways in post secondary education, more funding for apprenticeships).

In the absence of academic evidence, a useful diagram comes from a survey of programs in the United States designed to reconnect youth to education and employment (Government Accountability Office, 2008). It outlines a number of key elements or success factors. These include: staff and leadership, holistic comprehensive services, program design components, and youth empowerment.

Figure 1 Key elements in reconnecting youth to education and employment – Government Accountability Office, United States



Source: GAO analysis of information provided by 39 local program directors; Images (Art Explosion).

Additional interventions worth highlighting include:

- Durham North Carolina (NC) - is a community-based prevention program, combining mentoring, employment and entrepreneurial training (Gauntlett, et al. 2001). Included conflict resolution and anger management training. Also known as SAGE - Supporting Adolescents with Guidance and Employment.
- Adelaide Hills Vocational College (AHVC) is an alternative school / second chance program for 16 year olds and over. Provides an adult learning environment links students to TAFE, work placement and includes mental health support if required. Individualised learning with an emphasis on literacy and numeracy (Cook and Bills, 2005).

Other noteworthy papers or reports were also found. These include:

- The NSW YWCA runs a community building program “Y It Takes A Village” in three disadvantaged areas (Osbourne, 2005). The program includes projects for early school leavers - enterprise projects, alternative learning and vocational pathways and Outward Bound.
- The PACTS (Parents As Career Transition Supports) program is a series of interactive and small group workshops for parents. They address issues regarding current career information and transitional resources in the community, as well as effective communication and support skills for helping young people with their decision making. This program was a pilot run by the Brotherhood of St Laurence on the Mornington Peninsula (<http://www.bsl.org.au/Services/Young-people/Parents-as-Career-Transition-Supports.aspx>). It has reported positive outcomes in terms of meeting parental information needs and communication (Bedson and Perkins, 2006).
- Bloom and Haskins (2010) highlight Job Corps and the National Guard Youth Challenge as recent interventions in the United States as education and training programs provided in a residential setting. These “second chance” programs are designed for disadvantaged youth who must live at the intervention centre for a few months while undertaking the program. Older alternative education programs from the 1980s and early 1990s include JOBSTART and New Chance for young mothers. (Job Corps, JOBSTART and New Chance have also been reviewed by the What Works Clearinghouse as dropout prevention programs.)
- The Early School Leaver program in Victoria reconnects young people in the juvenile justice system and schooling (Clifford, 2002). Run by the Salvation Army, it uses a program worker

for 3- 6 months, who provides help with school / education re-entry advocacy, life skills training, as well as classroom support and family support and aid.

- Roy-Stevens (2004) outlines three programs for young people leaving custody and re-entering school. Smedslund, et al. (2006) have undertaken a systematic review of welfare to work programs for the Campbell Collaboration.
- A useful typology of for early school leavers has been used by the Youth Engagement Team, Department of Education and Children's Services, Government of South Australia (website: <http://www.decs.sa.gov.au/learningandwork/default.asp?id=32030&navgrp=3080>)
- This classification system groups students according to their risk of not completing school. From lowest risk to highest risk of poor schooling outcomes, the groups are: positive leavers, opportune leavers, would-be-leavers / reluctant stayers, circumstantial leavers, discouraged leavers and alienated leavers.

Additional references on interventions for youth transitioning to adulthood can be found at the California Evidence-Based Clearinghouse for Child Welfare (website: <http://www.cachildwelfareclearinghouse.org/search/topical-area/10>). The Dusseldorp Skills Forum has also created the Learning Choices website: <http://www.learningchoices.org.au/index.php> which lists all the available alternative educational programs for young people in Australia.

Finally, a few caveats about this review should be noted.

Firstly, this review included interventions for all groups (i.e. universal) or selected groups (i.e. population defined). It did not include interventions for high risk young people with demonstrated conditions (i.e. indicated groups) like young people with parents with mental health problems, young people with physical disabilities, school refusers, homeless youth, young people with conduct disorders, young people with mental health problems, young people with substance abuse and young people in foster care.

Secondly, the focus of this review was on interventions for adolescents or young people, for example interventions for the early childhood years like the Perry Preschool Project were not included.

Finally, in examining unemployment rates and local program interventions, a multiple measures framework (Bernhardt, 2002) which examines school processes, student learning, demographic statistics (like retention rate) and school community perceptions is recommended. This is a valid evaluation approach which is designed to examine the context of schooling and the impact of any changes brought about by an intervention.

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Table 3 *Proportion of early school leavers who are unemployed six months after leaving school – recommended strategies*

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(23.1) Career Academies	1	No	Yes	Yes	Low SES CALD
(23.2) Work Force Youth Unemployment Prevention program in Massachusetts	4	No	Yes	Yes	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 (e.g., pre and post-testing, post-testing only, or qualitative methods) or historical comparison group (e.g., normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (e.g., 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 (e.g. 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 trialled with people in disadvantaged communities, Indigenous people and/or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

3.3.6 Updated catalogue entries

Recommended strategy 23.1: Proportion of early school leavers who are unemployed six months after leaving school	
Name of intervention	Career Academies
Organisation	Career Academy Support Network, Graduate School of Education, University of California at Berkeley, Berkeley, CA.
Brief literature review	<p>Career Academies have been implemented in approximately 2500 high schools in the United States and they have been evaluated by the MDRC group since 1993 - producing 8 major reports using a random assignment research design (Kemple and Willner, 2008).</p> <p>The most recent report by Kemple and Willner (2008) highlights previous research which suggests that those student's who have a high risk of dropping out and who enter Career Academies increased school attendance, improved school progression to Year 12 and obtained more credit points toward graduation. In the present study, 1428 students (41% were males, 50% Hispanic background, 30% African American background), across 9 high schools were followed up 8 years post Years 11 and 12. Those who were assigned to Career Academies, and those who wanted to attend but were not accepted by a lottery system (i.e. random selection) had no major differences in school completion and post secondary education or school attainment - though both groups were higher than the national average. These non significant findings also applied when students at high risk of drop-out (approximately 25% of the total sample) were examined. The major finding of this study was improved employment outcomes (including earnings and time in employment) for Career Academy members, especially for young men. This significant finding also applied to students who were at high risk of drop-out.</p>
How and why does this intervention work?	Career Academies have three core elements: small learning communities within schools to create a supportive learning environment; combining academic and technical courses around a career theme (e.g. health care, finance, technology, communications and government) to enrich learning; and establishing partnerships with local employers to provide work based learning and awareness (Kemple and Willner, 2008). Career Academies come from a range of educational backgrounds. For those students at risk of dropping out, Career Academies seek to re-engage them by providing more applied learning experiences and promoting higher goals for further education and employment (Kemple and Willner, 2008).
On what population does this intervention work best?	The intervention works for schools catering for a diverse population and with students at risk of dropping out (Kemple and Willner, 2008).
Where will this intervention work best?	Career Academies have been evaluated in low income urban communities in the United States, containing large proportions of students from African-American and Hispanic backgrounds. Most of the research for this intervention has been conducted in the United States.
What is required to implement this intervention?	Supportive school and education systems in partnership, with local employers.
Resources and contact information	http://casn.berkeley.edu/
References	<p>Kemple and Snipes (2000) Kemple and Willner (2008) What Works Clearinghouse (2006)</p>

Recommended strategy 23.2: Proportion of early school leavers who are unemployed six months after leaving school

Name of intervention	Work Force Youth Unemployment Prevention program in Massachusetts / The Work Force Youth Program
Organisation	Cambridge Housing Authority, Massachusetts, USA http://www.cambridgema.gov/jobs2.cfm?message_id=8
Brief literature review	<p>The Work Force Youth program is a multi-partner community program including: educational classes; homework; field trips; work experience; counselling and home visits. Parents play a key role and the program serves 100 – 125 young people per year (Gauntlett, et al. 2001).</p> <p>The original study was published in 1988 with young people (13 to 16 years of age) from mainly African American or Hispanic backgrounds. Gauntlett, et al. (2001) in their review report a reduction in unemployment and stronger community links.</p> <p>The project’s website reports very high graduation (100%) and retention rates (80%), with good job placement outcomes (completion and skills = 95%) and high levels of post-secondary course enrolment (95%). However there was no comparative or control group evidence.</p>
How and why does this intervention work?	<p>Started in 1984, the Work Force Youth Program offers “a structured series of work and community-based learning experiences for youth in CHA housing” (from Program Description). This 5-year program supports Year 8 / Year 9 and Year 12 / Post secondary or employment transitions; helping students develop “social, educational and vocational competencies”.</p> <p>The program includes the following experiences /activities to develop the three competences:</p> <p>Social - Teaching about personal values and choices, including critical thinking and effective decision making; workshops on financial literacy and financial measurement;</p> <p>Educational - Homework centres, computer labs, one to one tutoring, exam preparation classes, literacy camps;</p> <p>Vocational - Paid work experiences with local employers, workshops on job readiness and career options, guidance counseling, college visits and a post-secondary scholarship program.</p> <p>These experiences / activities are undertaken within a framework which involves parents, as well as utilises mentorship, case management and individual development plans.</p>
On what population does this intervention work best?	The intervention is designed for disadvantaged youth (13 – 19 years of age) living in public housing and currently enrolled in school.
Where will this intervention work best?	The Work Force Youth Program is currently being run in a number of public housing estates in Cambridge, Massachusetts.
What is required to implement this intervention?	Supportive school and education systems in partnership, with local employers. College students are also required to act as tutors and mentors.
Resources and contact information	http://www.bc.edu/schools/cas/pulse/placements/Workforce.html
References	Gauntlett, et al. (2001) (Review) Lassen (1995) (Original paper)

3.4 Proportion of young people who use/age of initiating use of alcohol, tobacco, illicit drugs

As the evidence and type of interventions for these indicators overlapped considerably, one narrative review has been written to address the issues of preventing abuse and delaying initiation of use of alcohol, tobacco and illicit drug use. Separate evidence tables and catalogue entries for these three indicators appear in the following sections.

New database searches were conducted for the alcohol and illicit drugs indicators using Scopus, which indexes journals included in MEDLINE, PsycINFO and CINAHL (among others). Search terms for alcohol were: alcohol AND adolescent AND prevention, limited to 2009-2010, evaluation or trial, and excluding nursing, pharmacology, biochemistry and genetics. This resulted in 535 titles which were scanned, 49 abstracts were downloaded and read, and finally 16 articles were obtained. Search terms for illicit drugs were: (“illicit drugs” OR cannabis OR amphetamine OR heroin OR marijuana OR ecstasy) AND adolescent AND prevention, limited to 2009-2010 and psychology or social sciences and intervention. This resulted in 218 titles which were scanned, 26 abstracts were downloaded and finally 12 papers obtained. The original searches in MEDLINE, CINAHL, Cochrane Library and PsycINFO were re-run for the tobacco indicator, with some new search terms included.

Internet searches for these indicators were also conducted, focusing on domains .gov.au and .edu.au. The sites of key research centres and evidence clearinghouses were also searched, including the National Drug and Alcohol Research Centre, Australian Indigenous Health InfoNet, the National Centre for Education and Training on Addiction, the National Health and Medical Research Council, the UK Alcohol and Education Research Council, the Promising Practices Network and the US Substance Abuse and Mental Health Services Administration.

3.4.1 Background

Substance use is rare among Australian adolescents until the mid-teens, when experimentation and regular use begins to escalate (Table 1; AIHW, 2007). Data from national surveys and a large-scale longitudinal study show that the use of alcohol, tobacco and illicit drugs increases substantially over the adolescent period (Smart, et al. 2005; AIHW, 2007). On average, young Australians are around 14 ½ when they have their first cigarette or full alcoholic drink and around 15 ½ when they first try cannabis. Among those who experiment with ecstasy or meth/amphetamine, the first experience takes place around 18 years of age on average (AIHW, 2007).

Table 4 Prevalence of substance use among young people in Australia, 2004

Drug type	Pattern of use	12-15 years (%)	16-19 years (%)	20-24 years (%)
Licit drugs				
Tobacco	Current smoker	3	17	27
	Smokes every day	2	14	21
Alcohol	Risk of short-term harm	4	37	45
	Risk of long-term harm	<2	14	17
Illicit drugs				
All	In past year	8	26	33
Cannabis	In past year	5	22	27
Meth/amphetamine	In past year	Negligible	6	11
Ecstasy	In past year	Negligible	6	13

Source: AIHW, 2007

Daily smoking, reported by 14% of those aged 16-19, is believed to be a precursor to nicotine addiction (AIHW, 2007). Smoking is directly linked to around 19,000 deaths in Australia every

year, making it the major single contributor to preventable, premature death and chronic disease (Loxley, et al. 2004; AIHW, 2007). Prevention of smoking initiation during adolescence has the potential to prevent adult smoking and long-term adverse health consequences (AIHW, 2007).

Many young people are drinking alcohol in quantities known to be harmful in the short- and long-term. For example, 37% of Australians aged 16-19 report 'binge' drinking (more than 7 or 5 standard drinks on one day for males or females respectively), compared with the national figure of 21% (AIHW, 2007). Over a third of boys in Grade 5 (average age 11 years) and one in five girls reported using alcohol in the past year, in a recent survey of 2884 Victorian school children (Toumbourou, et al. 2009). In the short term, alcohol abuse can lead to hospitalisation and death from acute intoxication, road trauma or violence. Chronic, long-term abuse is associated with liver disease and cancer (Loxley, et al. 2004). Evidence from neuropsychology and brain imaging studies suggests that the adolescent brain is highly sensitive to potential damage from alcohol exposure, including binge drinking, therefore alcohol should not be used by people aged under 18 years (Hickie, 2009).

Among adolescents who use alcohol at harmful levels, cannabis use is also common. These teenagers are at high risk for developing dependence on other illicit drugs, and also for simultaneous polydrug use. When adolescent alcohol use escalates to the level of dependence or disorder, this affects academic achievement, school adjustment and psychosocial functioning, leads to higher rates of risky sexual behaviour and is a risk factor for suicide (Clark, 2004).

Cannabis is the most common 'principle drug of concern' for which Australians aged 10-19 years require treatment (Roxburgh and Burns, 2008). Regular use is associated with respiratory problems and increased risk of depression. About one in ten daily users become dependent on cannabis. A longitudinal study of 2332 young Australians found that about half had used cannabis and one in five met DSM-IV (APA, 1994) criteria for dependence at age 21. Aggression and delinquency, smoking and poor school performance at age 14 predicted later cannabis use disorder (Hayatbakhsh, et al. 2009).

The use of psychoactive substances can cause mental health problems in some individuals, and exacerbate existing problems in others (Loxley, et al. 2004). Users are more likely to suffer emotional problems, display antisocial behaviour, and drop out of school. Their behaviour may result in criminal convictions including possession and property crimes, with long-term social and economic consequences. There is an established link between the use of cannabis and amphetamines and increased risk of psychosis among young people (Barkus and Murray, 2010).

Indigenous young people (18-24 years) are twice as likely to be daily smokers than non-Indigenous people of the same age. According to the ABS 2004-05 National Aboriginal and Torres Strait Islander Health Survey, there is little difference in the rates of alcohol consumption between Indigenous and non-Indigenous young people. There are, however, regional differences as the proportions of young people drinking at risky or high-risk levels increase with remoteness (AIHW, 2007).

3.4.1.1 Risk factors

A recent review (Toumbourou, et al. 2007) outlined four motivational processes that influence adolescent substance use. The first is drug use motivated by the desire to be popular with peers. Longitudinal data from the Australian Temperament Study confirms that adolescents who use substances and/or engage in antisocial behaviour are likely to have friends who also do these things (Smart, et al. 2005).

The second process is related to youth culture and involves establishing identity (Toumbourou, et al. 2007). Perhaps contrary to expectations, most tobacco smoking and binge drinking tends to occur among young people with average levels of risk factors (Loxley, et al. 2004). The influence of peers and friends on alcohol and cannabis use appears to be strongest in the 'middle school' period in the United States (Years 6-8) whereas perceptions of friends' smoking has a more enduring influence on cigarette use across adolescence (Duan, Chou, Andreeva and Pentz, 2009).

This suggests that tobacco smoking symbolises identification with a particular peer group, above and beyond modelling effects.

The third process, escape from distress, applies particularly to young people who have experienced serious difficulties such as child abuse, neglect or pre-natal exposure to alcohol or drugs (Toumbourou, et al. 2007). There are genetic components to childhood behaviour problems and temperament, both of which predict later substance abuse problems. An easy temperament promotes positive adjustment and resistance to risk factors, but experiences of neglect and abuse in the early years of life undermine healthy development (Loxley, et al. 2004).

In addition, there is evidence that alcohol use disorders may result from a genetic predisposition (Clark, 2004). Heritability and environmental influences interact, so that children with a genetic liability to develop such disorders may also have parents who have similar problems and therefore have difficulty providing adequate monitoring, consistent discipline and access to health care (Clark, 2004). Parental supervision, peers and community context determine the availability of alcohol during adolescence, which in turn influences the extent to which the genetic susceptibility is expressed.

The fourth process is self-management, including misuse of drugs to regulate mood (Toumbourou, et al. 2007). Children with conduct disorder and, to a lesser extent, Attention Deficit Hyperactivity Disorder (ADHD), are at increased risk of developing problems with drug use (Clark, 2004; Loxley, et al. 2004). Depression and anxiety have also been identified as risk factors for alcohol abuse (Clark, 2004). When co-occurring mental disorders are successfully treated, substance abuse tends to decrease (Toumbourou, et al. 2007).

Adolescents with low school achievement and poor adjustment, and particularly those who leave school early, are at greater risk. Other risk factors include criminal activity, positive attitudes to drug use and personality factors such as high sensation seeking (Loxley, et al. 2004). Adolescents who have experienced bullying by their peers are more likely to report later substance use (Tharp-Taylor, Haviland and D'Amico, 2009) while exposure to a school-based anti-bullying program has been linked to lower rates of alcohol and cannabis use among students who received the intervention, compared with controls (Amundsen and Ravndal, 2010).

Longitudinal data from the Australian Temperament Study shows that highly antisocial adolescents are more likely to use all types of substances, and to use them at moderate to high levels, than low/non antisocial adolescents. The high levels of co-occurrence indicate that "broad-based intervention programs are needed which can target and ameliorate a range of adolescent problem outcomes..." (Smart, et al. 2005, p. 62)

Protective factors include involvement with adults in sport or community activities and strong family attachment. Parents who are not in constant conflict with each other, have good communication skills and monitor and supervise their children provide a protective context for healthy development (Loxley, et al. 2004). Recent research studies and reviews confirm the importance of parental monitoring, communication and limit setting in preventing drug use during early adolescence (Ward and Snow, 2008; Miller and Plant, 2010; Scull, Kupersmidt, Parker, Elmore and Benson, 2010; Tobler and Komro, 2010) although family factors appear to offer less protection for students in high-risk school environments (Cleveland, Feinberg and Greenberg, 2010).

3.4.2 The evidence base

A recent Australian review (Lubman, et al. 2007) concluded that prevention and early intervention programs for substance use should aim to:

- delay the onset of experimentation
- reduce the number of young people who progress to regular or problem use
- encourage current users to minimise or reduce risky patterns of use.

Such an approach is consistent with the harm minimisation focus of Australia's national drug policy, which involves reducing supply and demand while also implementing strategies to minimise the harmful effects of drug use for individuals and communities (Loxley, et al. 2004).

Supply-related policies include law enforcement punishment for possession and distribution. Demand-reduction strategies for adolescents focus on preventing the initiation of substance use, while harm-reduction strategies acknowledge that experimentation is common and are designed to reduce the potential consequences of use (Toumbourou, et al. 2007).

For alcohol and tobacco, tax and other controls on price are among the most effective interventions, particularly when they are based on the strength of the active ingredients (i.e. drinks with higher alcohol content are taxed most heavily, thus encouraging people to choose lower alcohol alternatives) and are linked to consumer pricing movements (Toumbourou, et al. 2007).

There is strong support in the literature for family-based interventions, based on the principle that competent parenting provides a protective context for adolescent development (Kumpfer and Alvarado, 2003; Loveland-Cherry, 2005). Such interventions focus on intentions, beliefs, school attachment, family and school problems, self-esteem and self-efficacy, and perceptions of alcohol use by peers and families. Family protective and risk factors are also targeted. The effectiveness of community-based or school-based interventions can be enhanced by adding a family-based component, such as homework or assignments requiring the parent to work closely with the child (Kumpfer and Alvarado, 2003; Loveland-Cherry, 2005). Family-based programs tend to be relatively costly to design and deliver (Loveland-Cherry, 2005).

School-based programs can be effective if they are interactive and skills based (Cuijpers, 2003; Faggiano, Vigna-Taglianti, Versino, Zambon, Borraccino and Lemma, 2008) and build social competence (Toumbourou, et al. 2007). However, programs that provide information alone have not produced good outcomes (Loveland-Cherry, 2005; Toumbourou, et al. 2007).

Community -based programs with multiple components are not well supported (Gates, McCambridge, Smith and Foxcroft, 2008) but may perform better with media campaign support (Cuijpers, 2003) and booster sessions (Skara and Sussman, 2003). Preventive screening and targeted brief interventions can be used in primary care or other health settings to encourage more moderate use of alcohol or tobacco (Lubman, et al. 2007).

There is general agreement in the literature that it is best to intervene before substance use becomes established, and if possible before initiation of use (Wagner, Tubman and Gil, 2004). Strong evidence exists for programs delivered to pre-teen and early adolescent children, and the transition from primary to secondary school appears to be a good time to intervene (Petrie, Bunn and Byrne, 2007). Australian reviewers Loxley and colleagues (2004) recommend a protection and risk reduction approach that addresses early childhood development as well as older age groups.

Effective programs have these key features (Petrie, et al. 2007):

1. They develop strategies to involve adolescents in family activities, maintain good relationships, develop social skills, reinforce a sense of personal responsibility and manage conflict. That is, they have a broad approach, rather than just focusing on substance abuse.
2. Parents are actively engaged as participants. Such programs tend to be quite demanding on parents' time, however, and attrition is a problem.

Additional success factors identified by other reviewers (Weissberg, Kumpfer and Seligman, 2003) include:

3. The program is designed around a research-based risk and protective framework and provides continuous, tailored, developmentally and culturally appropriate content.

4. Leaders establish policies, institutional practices and environmental supports around the program to promote optimal child and adolescent development.
5. The program is delivered by well-trained and highly skilled staff.

It is important to note that universal approaches may not address the specific needs of those children most at risk, and may also fail provide a sufficient 'dose' to be effective (Weissberg, et al. 2003). For this reason, comprehensive or adaptive programs combining universal, selective and indicated approaches appear promising. These are long-term programs incorporating several components including community, school and family interventions.

Different program components may be used to target specific risk factors (Montoya, et al. 2003). Thus, adolescents exposed to a chaotic home life and poor parenting may benefit most from a family-based approach. Those growing up in a toxic social environment in which high levels of crime and poverty are prevalent may require a community-based approach, while a school-based approach may help build resistance to peer influences.

While longer-term outcomes are of most interest in universal or selective prevention, interventions that produce immediate effects have greater potential to benefit adolescents who have undergone outpatient treatment for established substance abuse. There is an increased risk of relapse in the three months following treatment, and there may be other consequences (e.g. avoiding removal from home into residential care or foster placement) contingent on response to treatment (French, Zavala, McCollister, Waldron, Turner and Ozechowski, 2008).

Adolescent drug users require ongoing support. Providing this type of support in a school setting helps overcome many of the barriers to service access for this population, who may not present to a clinic. It also enables those delivering the intervention to assess and influence the social environment in which the adolescents' problems are occurring (Wagner, et al. 2004).

3.4.3 Selection of interventions: alcohol

Many reviewers have highlighted the potential value of the Strengthening Families Program (SFP) for primary prevention of alcohol abuse in young people (Foxcroft, Ireland, Lowe and Breen, 2002; Physician Leadership on National Drug Policy, 2002; Foxcroft, Ireland, Lister-Sharp, Lowe and Breen, 2003; Kumpfer and Alvarado, 2003; National Institute on Drug Abuse, 2003; Hayes, Smart, Toumbourou and Sanson, 2004; Loveland-Cherry, 2005; Gates, McCambridge, Smith and Foxcroft, 2006; Petrie, et al. 2007).

There are several versions of the SFP and it is not always clear in reviews which version has been the subject of rigorous evaluation. For example, SFP is acknowledged as a Model Program by the US Substance Abuse and Mental Health Services Administration but the description refers to the original version which consists of 14 two-hour sessions of behavioural skills training (see http://www.nrepp.samhsa.gov/programfulldetails.asp?PROGRAM_ID=211 for details). Developed by Dr Karol Kumpfer in the early 1980s at the University of Utah, SFP was originally designed for children of drug-addicted parents but has since been widely implemented as a universal and indicated program for three age groups: 3-5, 6-11, and 12-16 years. Most of the other reviews refer to the 'Iowa' version, which was adapted from the original by Dr Virginia Molgaard. The 'Iowa' version or SFP 10-14 is strongly supported by evaluation evidence and has been adapted, to be more culturally appropriate and consistent with a harm minimisation philosophy, for use in the UK and Europe (Allen, Coombes and Foxcroft, 2007). The authors of a 2002 Cochrane systematic review concluded that the number needed to treat (NNT) was nine for preventing the initiation of problem drinking four years after the SFP 10-14 intervention (Foxcroft, et al. 2002).

The SFP 10-14 is a universal prevention program aimed at young adolescents (just before or around the time of transition to high school) and their parents. It involves seven two-hour sessions which are presented and facilitated by group leaders. For the first hour, parents and children meet in separate groups. Youth activities include group discussions, skill practice and social bonding, while parent sessions incorporate presentations, role-plays, group discussions and viewing of DVDs. During the second hour, families get together to practice skills, play games and do family

projects. The UK version has optional booster sessions. Manuals, DVDs and other materials are available commercially. Although intended as a universal program, SFP 10-14 has also been used successfully with young adolescents (median age 12 years) with serious conduct problems and 'hyperactivity' in a small-scale trial in Barnsley, a northern English city (Coombes, Allen, Marsh and Foxcroft, 2009).

Several high-quality studies support the SFP 10-14, notably a longitudinal study involving 447 families in Iowa, USA. A total of 33 schools were randomly assigned to each of three groups: SPF, Preparing for the Drug Free Years (see below) and control. Young people were followed from Grade 6 to Grade 12. Those in the SPF group had significantly lower rates of alcohol use, drunkenness and tobacco use than controls, and for some outcomes this difference increased over time. Other positive outcomes for youth in the intervention group included fewer conduct problems in school, while their parents had stronger skills in parenting and relationship building and more positive feelings towards their children (Spoth, Redmond and Shin, 2001; Spoth, Randall, Shin and Redmond, 2005). Follow-up of these young people at age 21, and their parents, found that the intervention significantly reduced the frequency of drunkenness, alcohol-related problems, polysubstance use, tobacco use and illicit drug use, by delaying initiation of substance use (Spoth, Trudeau, Guyll, Shin and Redmond, 2009).

Outcomes for the other program in this long-term evaluation study, Preparing for the Drug Free Years (PDFY), were also very positive. Youths in the PDFY group had significantly less growth in alcohol use over time, while their parents had stronger anti-drug attitudes, compared with the minimal-contact control group (who received four leaflets by post). Participation in the program was also associated with slower growth in polydrug use, and slower growth in (non-drug) delinquency (Park, Kosterman, Hawkins, Haggerty, Duncan, Duncan and Spoth, 2000). A further follow up at six years demonstrated that the intervention group had maintained a slower rate of increase of polydrug use over time (Mason, Kosterman, Hawkins, Haggerty and Spoth, 2003). The program's effects on preventing alcohol abuse could still be observed when participants were aged 21, although these were not as strong as those for SFP 10-14 (Spoth, et al. 2009).

PDFY, now known as Guiding Good Choices, is based on the social development model, which predicts that improvements in parental behaviour and family interactions will enhance children's protection against early substance use initiation. The program is designed for parents of children aged 8 to 14 years and is available commercially (see <http://www.channing-bete.com/prevention-programs/guiding-good-choices/>). It involves a weekly, five-session multimedia program led by trainers, that strengthens parents' child-rearing techniques, parent-child bonding and children's peer resistance skills. In the original version, children only attended one session which focused on peer pressure. Guiding Good Choices (aka PDFY) was revised in 2003 and more family-based activities were added; however, the reported evaluation results relate to the original version. The materials would require adaptation to Australian audiences in terms of language and cultural references, and the goal is abstinence rather than harm reduction.

In contrast, the School Health and Alcohol Harm Reduction Project (SHAHRP) (McBride, Farrington, Midford, Meuleners and Phillips, 2004) is an Australian program designed with the explicit goal of harm minimisation. Classroom-based and implemented universally in the first and second years of high school, SHAHRP was developed at the National Drug Research Institute. The program has two phases of skills-based activities, a large proportion of which are interactive. They include skill rehearsal, group discussions and decision making by individuals and groups.

SHAHRP was evaluated in a large-scale randomised controlled trial involving 14 government high schools in Western Australia. Students were followed for 32 months from baseline, with assessments at 8 and 20 months. Eight months after the baseline, intervention students were consuming significantly less alcohol than controls, and were less likely to consume at risky levels. These differences were maintained at 20 months but began to converge (although differences were still significant) at 32 months. Consistent with the goals of the program, intervention students were less likely to drink unsupervised and less likely to experience harm from their own use of alcohol. The authors concluded that harm reduction messages could be effective with students,

particularly those who have already used alcohol, as young people with prior experience are less likely to be influenced by programs that advocate total abstinence (McBride, et al. 2004; but see also Anderson, 2004; Hamilton, 2004; Hill, 2004 for commentaries on SHAHRP).

The Parents Adults Kids Together (PAKT) program developed by Life Education Victoria aims to increase family communication around alcohol and develop children's sense of connectedness to family, school and the wider community. With the help of teachers and a Life Education coordinator, children design and prepare for a family drug education forum which they present. The program has been adapted for use in the UK (as Kids Adults Together or KAT) and initial evaluation found it was effective in increasing knowledge among children and promoting family discussions, but there was little evidence of change in children's attitudes to, or intention to use, alcohol (Segrott and Rothwell, circa 2009). Another Australian initiative is the Resilient Families Program, which is based on evidence that the engagement of adolescents in risky behaviours, such as alcohol misuse, could be mitigated by positive family and community influences (Shortt, et al. 2006). It targets students and their families during the first two years of secondary school (Bond, et al. 2000). A randomised controlled trial comparing the Resilient Families program with regular practice was implemented during 2004 and 2005. Parent participation was low, however (Shortt, et al. 2006). After one year, the program benefited Year 8 students through higher family attachment, school rewards and school attendance but had no effect on overall alcohol use (Shortt, et al. 2007).

Both school-based and parent-involvement programs tend to suffer from poor implementation in the field, which limits their effectiveness (Vogl, Teesson, Andrews, Bird, Steadman and Dillon, 2009). Computer-based interventions can be designed to ensure fidelity of delivery of all intervention components (Vogl, et al. 2009; Schinke, Fang and Cole, 2009), and allow participants the flexibility to complete tasks at their own pace and (if delivered via the internet) at a convenient time and place while maintaining privacy (Carey, Scott-Sheldon, Elliott, Bolles and Carey, 2009; Schinke, et al. 2009). They also have the potential to engage hard-to-reach groups such as teenaged males (Vogl, et al. 2009). A meta-analysis found that computer-delivered interventions reduced problem drinking among university students, making them a cost-effective alternative to counsellor-delivered programs (Carey, et al. 2009).

The CLIMATE Alcohol Program is delivered in secondary schools and combines computer-based lessons with class activities such as role-plays, small group discussions, problem-solving activities and skill rehearsal. The six computer sessions, each lasting 15-20 minutes, are cartoon-animated teenage dramas which present content such as guidelines for low-risk drinking, peer norms for alcohol consumption, identifying risk in common drinking situations, refusal skills, advertising tactics and how to recognise and act in an alcohol-related (Vogl, et al. 2009).

CLIMATE was developed in Australia, based on harm minimisation principles, and has been evaluated in two separate cluster-randomised trials, involving 16 and 10 schools respectively. The first trial demonstrated improvements in alcohol-related knowledge for boys and girls in the intervention group, while decreased alcohol consumption, less frequent binge drinking and fewer alcohol-related harms were reported only by girls (Vogl, et al. 2009). A cross-validation trial again found the program increased knowledge and also decreased average weekly alcohol consumption among intervention participants in the short-term (Newton, Vogl, Teesson and Andrews, 2009). A new version of the program, which includes a refresher course on the alcohol content after six months along with additional content designed to prevent cannabis use, has also been trialled in Australia and decreased use of both these drugs among high school students six months after the intervention (Newton, Andrews, Teesson and Vogl, 2009).

Also considered for the catalogue was Project ALERT, which has been recognised as an exemplary program by the US Department of Education and as a model program by the Centre for Substance Abuse Prevention. Project ALERT is widely used in schools in the United States, but evaluation findings are mixed. For example, a recent randomised controlled trial involving children in Grades 6-7 at 34 schools found no evidence of any positive impact of the program on pro-drug

beliefs or intentions to use alcohol, cannabis or tobacco (Kovach Clark, Ringwalt, Hanley and Shamblen, 2010).

One of the difficulties with universal, school-based interventions is the 'dose' delivered may not be sufficient for those most at risk of serious problems. For this reason, a number of targeted and multilevel programs have been trialled, some with excellent results. Two promising targeted (selective/indicated) programs are CASASTART and Big Brothers Big Sisters. They are recommended below in the prevention of illicit drug use section, but are also relevant to alcohol abuse prevention.

The Adolescent Transitions Program combines a universal, school-based intervention with selective and indicated elements targeted to families most at risk (Stormshak and Dishion, 2009). This multilevel approach aims to identify high-risk youths (during the course of the universal intervention) and involve them and their families in further activities specifically targeted at their needs and delivered at effective 'dosages'. For those most in need of intervention, this may involve six to eight intervention contacts over a period of two to three years. A Family Resource Centre is established in the school and consultants provide services and resources to all parents, as well as a six-lesson curriculum for all Grade 6 students. The six sessions focus on: school success; health decisions; building positive peer groups; the cycle of respect; coping with stress and anger; and solving problems peacefully. The Family Check-Up is delivered free of charge to parents who request it, and consists of three sessions: an initial interview, an assessment, and a feedback session. Families are then linked to further evidence-based services depending on their needs. The goal is to improve family management and promote self-regulation among young people; two factors shown to be related to a reduced incidence of problem behaviours including substance use (Stormshak and Dishion, 2009).

A large, randomised controlled trial with longitudinal follow-up found that the Family Check-Up was effective in reaching vulnerable families: engagement was predicted by teacher reports of high risk behaviours at school, youth reports of high family conflict, and absence of the biological father in the home (Dishion, Kavanagh, Schneiger, Nelson and Kaufman, 2002; Dishion, Nelson and Kavanagh, 2003; Connell, Dishion, Yasui and Kavanagh, 2007). Among those who engaged in the FCU, growth in substance use (alcohol, tobacco and illicit drugs) from ages 12 to 17 was significantly reduced compared with the non-engaged comparison group. The intervention also reduced growth in antisocial behaviour, and participants were less likely to be arrested during adolescence and less likely to be diagnosed with an alcohol, tobacco or marijuana use disorder by late adolescence. A second randomised controlled trial confirmed that participation in the FCU was associated with increases in self-regulation among young people, contributing to better emotional adjustment and greater school engagement (Stormshak, Fosco and Dishion, 2010).

3.4.4 Selection of interventions: tobacco

The need for continued efforts to reduce the rate of smoking among adolescents and to support the process of cessation is essential. A recent study found that adolescents still have a number of misconceptions about smoking, including the notion that it took a long time to become addicted and that most teens smoked (Fritz, et al. 2008b). Of most concern was that, despite the years of campaigning on the dangers of smoking, adolescents were still relatively uninformed about the untoward effects of smoking (Fritz, et al. 2008b). While the study found that in almost every case, students failed to consider the future effects of smoking the authors also found that informing adolescents about these effects, in particular using graphic images depicted in a video, were effective in prompting young people to want to give up (Fritz, et al. 2008b). This is supported by another recent study that found that long term consequences and social disapproval were the strongest predictors of smoking cessation as opposed to short term consequences (Myers and MacPherson, 2008).

Smoking cessation is seen as the goal of many cessation programs, however, avoiding nicotine dependence may also be an effective outcome given the difficulty of permanent cessation. A recent study of adolescent smoking patterns found that smoking cessation during adolescence had a protective effect against later nicotine dependence, especially if cessation lasted for 12

months. They recommended that, for daily smoking adolescents, cessation for up to 12 months should be a goal for cessation interventions (Van De Ven, et al. 2010).

Recent reviews of the smoking prevention and reduction literature support comprehensive approaches rather than targeted or single strategies. The evidence shows that programs should be universal in focus, addressing the social influences on young people from school, family and community sources. Interventions can be effectively implemented in school, home and community settings but should be supported with follow-up sessions, brief interventions in a professional setting and restrictions on the sale of tobacco products to young people.

The Gatehouse Project is an Australian evidence-based mental health promotion program that has been rigorously evaluated and shown results in reducing risky behaviours among adolescents, including behaviours relating to substance abuse. The program is based on attachment theory, which proposes that sound attachments underpin wellbeing throughout life. The Gatehouse Project aims to promote a sense of connectedness for adolescents by improving security, communication and participation in both school and social contexts (Patton, et al. 2003).

The intervention is a multilevel strategy with a 'whole-school' focus. Integral to the intervention is the establishment and support of a school-based adolescent health team, identification of school risk and protective factors through student surveys and the implementation of effective strategies that address school environment issues (Bond, 2001).

Twenty six rural and metropolitan schools in Victoria participated in the cluster-randomised trial used to evaluate The Gatehouse Project. Twelve schools were randomly assigned to the intervention and 14 to the control group. Across three waves of follow up, students in intervention schools were less likely to be regular smokers. The adjusted odds ratio of the intervention group compared to the control group was 0.66 at the first follow-up and 0.72 and 0.79 for the second and third follow-ups respectively (Bond, et al. 2004). Although the reduction in regular tobacco use was the most notable outcome, the program also appears useful in preventing other substance abuse.

The SFP 10-14 and, to a lesser extent, the Adolescent Transitions Program/Family Check-Up have also demonstrated reductions in tobacco use and are therefore worth considering as general substance use prevention programs. These two programs are reviewed above.

Another promising Australian program based on harm minimisation principles is Smoking Cessation for Youth Project (SCYP). This intervention took strategies that have been proved successful with adults and translated them into a program for adolescents. Program development began in 1997 with a formative and efficacy phase. From 1999 through to 2002 the effectiveness of the SCYP was compared to traditional abstinence-based approaches. The third phase ran until 2003 and tested whether smoking-related outcomes could be maintained (Cross, 2008).

Research by Hamilton and colleagues (2000) found that adolescents reacted more positively to a harm reduction message (don't smoke, but if you do, smoke less) compared a traditional abstinence (don't smoke) message. The SCYP program tested the harm reduction approach in a cluster-randomised intervention study involving 4636 students from 30 randomly selected secondary schools in Perth, Western Australia (Hamilton, 2005). Students who participated in SCYP were less likely to smoke regularly (OR=0.51) and less likely to have smoked in the past 30 days (OR=0.69) when compared to standard abstinence programs and policies (Hamilton, 2005).

The SCYP intervention uses skills-based activities to encourage students not start smoking, to quit or cut down smoking, to assist others in quitting smoking and to reduce exposure to environmental tobacco smoke. In addition a resource for school nurses, *Keep Left*, was developed to support a harm minimisation approach to student smoking.

Seven Steps to a Smoke Free School is provided by the Victorian Quit program and has easily accessible resources and support from the Quit program. The program provides resources for

schools to help them in developing policies around smoking, curriculum content and structure, professional development, parental involvement, support for students and conducting a review of current strategies.

This program was developed to address passive and active smoking among high school students and staff. It is based on a social influences model which recognises that social factors arising from the media, peers and family play a major role in the initiation and early stages of drug use. This model is supported by findings from a Canadian survey (Brown and Manske, 1996) which showed that smoking habits of youth were related to the number of their peers who smoked, the smoking habits of their parents and teachers and whether school rules on smoking were violated. The reviewers were unable to find any evaluation evidence for Seven Steps to a Smoke Free School.

A recent review of behavioural interventions for tobacco cessation found that behavioural interventions in adolescents and pregnancy seem presently more effective than pharmacotherapy but that technology-based interventions seem to hold promise (Murthy and Subodh, 2010).

Fritz, et al, (2008a) reported on the Computerised Adolescent Smoking Cessation Program (CASCP) for high school students. The aim of the study was to help adolescents consider quitting and to move forward in the “Stages of Change”. The program’s content was based on the American Lung Foundation’s ‘Not on Tobacco’ program delivered in four 30-minute sessions on the computer. Early results indicated that CASCP increased the number of quit attempts. After one month 20% of the experimental group quit smoking and of those who did not quit, nicotine dependence and number of cigarettes smoked per day were reduced. This represented an overall forward movement in the experimental groups stages of change (Fritz, et al. 2008a).

Another computer assisted intervention for smoking in adolescents is the *Smoking Zine* program (Norman, et al. 2008). This program consisted of a five-stage interactive website to support a single classroom session with email follow-up. Motivational interviewing and a paper-based journal were also part of the intervention. The program reduced students intentions to smoke, increased resistance to continued cigarette use at 6 months and reduced the likelihood of non-smokers adopting heavy cigarette use in the six month follow-up period (Norman, et al. 2008).

ASPIRE (A Smoking Prevention Interactive Experience) is a web-based, multimedia intervention developed in the US for smoking prevention and cessation in culturally diverse high-school students (Prokhorov, et al. 2008). The initial trial of this program found that among non-smokers significantly fewer students in the intervention group than in the control group had initiated smoking during the 18 month follow-up period (1.9% vs. 5.8%). There was also a reduction in smoking intensity among smokers but the trend was not significant among the small number of smokers. The program also had a positive effect on decisional balance and temptations to smoke. In particular the program was very effective in reducing smoking initiation in those at highest risk for initiation.

The development of the ASPIRE program was guided by the Transtheoretical Model of Change (TTM) including a continuum of stages of change, a theoretical framework for change, measures sensitive to behaviour change and an approach tailored to individual readiness for change (Prokhorov, et al. 2010). A Cochrane review of smoking interventions for adolescents (Grimshaw and Stanton, 2006) found that interventions incorporating the TTM achieved moderate to long-term success compared to pharmacological and cognitive behaviour therapy approaches. The ASPIRE project was developed by the MD Anderson Cancer Centre at the University of Texas. This program may be effective in reducing tobacco use as part of a whole school approach such as the Gatehouse project given above. More information can be found at: <http://www.mdanderson.org/aspire>.

3.4.5 Selection of interventions: illicit drugs

A Victorian study reviewed by Loxley and colleagues (2004) found that most tobacco smoking and binge drinking occurred among students with average levels of risk factors, rather than those

ostensibly 'high risk'. In contrast, students with high levels of risk factors were more likely to be having problems with illicit drug use. This suggests a need to direct prevention strategies for legal drugs at all young people, while interventions to prevent illicit drug use may need to be more targeted. Targeting itself may be problematic, however, as labelling young people 'at risk' of dependence on drugs may contribute to poor outcomes (Hayatbakhsh, et al. 2009). The interventions described below include both universal (Resilient Families Program; CLIMATE Schools) and selective / indicated approaches (Big Brothers Big Sisters; Project Towards No Drug Abuse; CASASTART).

The Resilient Families Program is a universally applied, evidence-based Australian program that may have general effects on risky behaviour and substance abuse. Evaluation of this program is preliminary to date and has focused on outcomes in alcohol use (Shortt, et al. 2007). Nevertheless, parenting and family components have been identified as a key success factor in effective programs for substance abuse (Petrie, et al. 2007). The CLIMATE Schools: Alcohol and Cannabis Prevention course was developed in Australia on harm minimisation principles and is an internet-based intervention with content based on evidence and consistent with the Australian high school curriculum. (The course is described in more detail above in the section on alcohol interventions.) The cannabis prevention component consists of six, 40-minute lessons delivered by computer to individual students, followed by class activities led by the teacher. It includes a refresher course on the alcohol component (which is delivered six months earlier) along with additional content designed to prevent cannabis use. A controlled trial found that the program decreased use of alcohol and cannabis among high school students six months after the intervention (Newton, Andrews, Teesson and Vogl, 2009).

Project Towards No Drug Abuse (Project TND) is also delivered in schools but differs from these two Australian programs in that it was developed specifically for youth at high risk for drug abuse and other problems. The original target group was young people who were no longer integrated into mainstream schools but had been enrolled in 'alternative' high schools in California. Project TND uses a motivation-skills-decision-making model that has proved more effective for high risk/older adolescents than more traditional social influences programming (Sun, et al. 2006). The program has been effectively implemented and evaluated in both alternative high schools and general high schools (Sussman, et al. 2003; Dent, et al. 2001).

Evaluation of the program was conducted between 1994 and 1999 using a cluster-randomised controlled design in which eighteen schools were assigned to an educator-led classroom program and a self-instruction classroom program or a control group (Sussman, et al. 2003). Follow-up of students five years after baseline found significant long-term effects on hard drug use among both intervention groups. Another evaluation in a general high school population also found significantly reduced hard drug use at first year follow-up (Dent, et al. 2001). To date, six separate experimental trials of TND have been conducted; three found reductions in cannabis use, while all six found reductions in the use of 'hard' drugs, including cocaine, hallucinogens, inhalants, stimulants, ecstasy, heroin and steroids (www.tnd.usc.edu, accessed 2 August 2010).

Variations on the basic program have been trialled, but have not been found to increase effectiveness. For example, a schools-as-communities component was incorporated in the original development and evaluation phase of the project, but this component did not add any significant benefit to student outcomes. Inclusion of behavioural and social skills training did not enhance effects over and above the original cognitive perception information curriculum (Sun, Sussman, Dent and Rohrbach, 2008). A peer-led interactive version reduced substance use among students whose friends were not drug users, but was ineffective and potentially damaging to students whose peer environment supported drug use (Valente, et al. 2007). Comprehensive implementation support for teachers (which included on-site coaching, web-based support and technical assistance in addition to the training workshop) improved the fidelity of program delivery but had no impact on most student outcomes (Rohrbach, Gunning, Sun and Sussman, 2010). In its original form, Project TND has proved effective for both general and high risk student populations.

There is no structured curriculum for the Big Brothers Big Sisters mentoring program. Instead, this program works on the principle that a genuine relationship with a positive role model represents a protective factor against poor outcomes for adolescents who may otherwise lack this caring guidance. Dating back to 1904, the program is now established in 12 countries, including Australia. BBBS of America is listed as a 'proven' program for the indicator "Youths not using alcohol, tobacco or illegal drugs" by the Promising Practices Network (Rand Corporation; www.promisingpractices.net/program.asp?programid=125). It is listed as 'promising' for the indicators "Students performing at grade level or meeting state curriculum standards" and "Children and youth not engaging in violent behaviour or displaying serious conduct problems".

Adult volunteers are linked with vulnerable young people (aged 7-17), and commit to spending at least an hour a week for 12 months engaged in activities together. The emphasis is on building the relationship between the mentor and young person. There is a rigorous process of checking potential volunteers to ensure the children's safety.

Big Brothers Big Sisters of America was evaluated in one experimental study in which 1138 young people from eight BBBS agencies were randomly assigned to control or treatment conditions (Ierney, Grossman and Resch, 1995). Both groups were followed over 18 months, with a very high retention rate of 84.3%. Young people involved in BBBS were 46% less likely to initiate illegal drug use and 32% less likely to hit someone (difference significant only for girls and white boys). They were 27% less likely to initiate alcohol use (this was marginally significant), suggesting the program has more general application for preventing all types of substance abuse. In addition, participating youth attained better grades on average and were less likely to skip school. Evaluations of the school-based version are under way in America and Canada. A survey of 200 adults who had been 'Littles' (i.e. children being mentored) within the U.S. program found that relationships with their 'Bigs' had been very important in their lives, positively influencing their self confidence, providing stability, and helping them set higher goals and make better decisions (Harris Interactive, circa 2009). For example, 77% reported they had achieved better results in school because of their Bigs, and half (52%) said their Bigs had kept them from dropping out of high school. Based on projected lifetime costs of early school leavers who become adult criminals, and 2004 costs of running the BBBS program in Melbourne, it was estimated that preventing high risk behaviour in only 1-2% of participants would result in the program's breaking even (Moodie and Fisher, 2009).

Even more intensive, one-to-one support is provided through the CASASTART program of case management and tailored, integrated services. The name of this program stands for the US National Center on Addiction and Substance Abuse (CASA) "Striving together to achieve rewarding tomorrows" (START). The program has eight core elements, which are adapted to meet the needs of individual project sites. Like BBBS, it has no set curriculum. The eight core components are: enhanced policing and enforcement (including police presence in schools and communities and direct contact with youths and case workers); case management (each looking after 13-18 families); targeted family services; links with the criminal justice system; after-school and holiday activities for youth; access to tutoring and homework assistance; group mentoring; and financial incentives. It can be implemented by youth agencies, social services, schools, police or community-based organisations.

Severely disadvantaged neighbourhoods in six US cities were targeted for the intervention. Five of these sites were evaluated, using a randomised controlled design (Harrell, Cavanagh and Sridharan, 1999). One year after the intervention, young people who had been randomly assigned to the treatment group were significantly less likely than controls to have used drugs in the past month, to have used 'hard' drugs such as cocaine or heroin, or to have used 'gateway' drugs such as alcohol, marijuana, inhalants or cigarettes. Intervention group youths were also less likely to report selling drugs or committing a violent crime. Young people in the program reported more positive peer group support, felt less peer pressure and were less likely to associate with delinquent peers. There were no differences on a number of other outcomes, including antisocial risk-taking behaviours, self esteem, family conflict, teen pregnancy, school achievement or attachment, property crimes or gang membership.

3.4.6 Discussion

Adolescent drug abuse prevention programs work best when they are implemented over several years and incorporate several strategies. Given that the harms relating to substance use may be long-term rather than immediate, developmental strategies need to be supplemented by regulatory approaches and harm-reduction strategies (Toumbourou, et al. 2007).

The literature highlights some areas in which those wishing to implement evidence-based prevention programs may need to exercise caution. The United States has been a source of numerous potentially valuable programs, but writers of a recent Cochrane review noted that the explicit goal of these interventions is often abstinence, rather than harm minimisation (Foxcroft, Ireland, Lowe and Breen, 2002). Australian reviewers have expressed concern about the cultural appropriateness of this goal (Toumbourou, et al. 2007, p. 1393):

Among adolescents, zero-tolerance approaches to drug and alcohol prevention are ineffective and in some cases contraindicated.

Loxley and colleagues (2004) strongly recommend further evaluation of successful, 'transplanted' programs in the Australian context to ensure they continue to achieve good outcomes.

A cost-effectiveness analysis of four treatment approaches for adolescents with established substance-use disorders found that the more expensive interventions, delivered to individuals, were no more effective than cheaper group-based approaches (French, et al. 2008). Nevertheless, several studies and reviews have highlighted the potential risks of bringing together young people who are all experiencing similar problems as interaction within the group may inadvertently 'normalise' antisocial behaviours (Cho, et al. 2004; Loxley, et al. 2004; Smart, et al. 2005; Toumbourou, et al. 2007; Valente, et al. 2007).

Further, it is not always true to say that doing something is better than doing nothing. Reviewing alcohol-use prevention studies, Loveland-Cherry (2005) noted that some of the older, universal programs delivered in schools were unscientific. Often these knowledge or affect-based programs focused on providing information about the risks of drug use on the assumption that this would frighten teenagers away from using it. This approach has been shown to be largely unsuccessful, and may be counterproductive, leading to higher rates of substance use (Loveland-Cherry, 2005; Lubman, et al. 2007).

Finally, Weissberg and colleagues (2003) have listed five essential steps to implementation of comprehensive prevention strategies:

1. Assess needs and resources;
2. Select appropriate evidence-based interventions;
3. Co-ordinate new initiatives with those under way;
4. Establish resources and supports for quality implementation;
5. Conduct ongoing process and outcome evaluations.

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Table 5 Proportion of young people using/age of initiating use of alcohol: recommended strategies

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(16.1) Adolescent Transitions Program and Family Check Up	1	Yes	Yes	Yes	LOW SES CALD
(16.2) Strengthening Families Program 10-14	1	Yes	Yes	Yes	LOW SES
(16.3) School Health and Alcohol Harm Reduction Project (SHAHRP)	1	No	Yes	Yes	UNIVERSAL
(16.4) Climate Schools Alcohol and Cannabis prevention course	1	Yes	Yes	Yes	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 (e.g., pre and post-testing, post-testing only, or qualitative methods) or historical comparison group (e.g., normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (e.g., 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 (e.g. 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 trialled with people in disadvantaged communities, Indigenous people and/or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

3.4.8 Updated catalogue entries

Recommended strategy 16.1: Proportion of young people using/age of initiating use of: alcohol	
Name of intervention	Adolescent Transitions Program and Family Check Up
Organisation	Child and Family Center, University of Oregon, USA
Brief literature review	This adaptive, multilevel approach aims to identify high-risk youths during a universal intervention and involve them and their families in further activities targeted at their needs and delivered at effective 'doses'. At around 11 years of age, all students receive the Adolescent Transitions Program (ATP), which includes six sessions: school success; health decisions; building positive peer groups; respect; coping with stress and anger; and solving problems peacefully. The Family Check-Up is delivered free to parents who request it, and consists of three sessions: an initial interview, an assessment, and a feedback session. Families are then linked to evidence-based services depending on their needs.
How and why does this intervention work?	The program was evaluated via a randomised controlled trial with longitudinal follow up at five time points between ages 11 and 17. Because this was an adaptive intervention, levels of engagement varied. Only 25% of the intervention group engaged in the FCU and further services. Complier Average Causal Effect analysis was used to identify a suitable comparison group (those most like the families who engaged in the selective and indicated levels of the intervention) among the controls. The FCU effectively reached vulnerable families: engagement was predicted by teacher reports of high-risk behaviours at school, youth reports of high family conflict, and absence of the biological father in the home. Among those who engaged in the FCU, growth in substance use (alcohol, tobacco and illicit drugs) from ages 12 to 17 was significantly reduced. By age 16-17, those who engaged in the FCU reported using alcohol around once a month, compared with 3.5-4 times for controls. The intervention was also associated with reduced growth in antisocial behaviour, and participants were less likely to be arrested during adolescence and less likely to be diagnosed with an alcohol, tobacco or marijuana use disorder by late adolescence. A second RCT confirmed that the FCU interventions as associated with improved self-regulation among young people, leading to stronger school engagement and better emotional adjustment, factors known to protect against substance use.
On what population does this intervention work best?	The strategy combines a universal, school-based intervention with selective and indicated elements directed to families at risk. It was trialled in an ethnically diverse, metropolitan community in north-western United States. Parents of 998 6th grade students at three middle schools agreed to take part (90% consent rate), and youths were randomly assigned to control (n=498) or intervention (n=500) classes. There was a retention rate of around 80% across the longitudinal span of the study. Around 42% of participants were white, and around 59% had their biological fathers living in their homes. The second RCT took place in three public, urban schools and involved 377 adolescents and their families who were followed up for four years, starting in 6th grade. Again, this was an ethnically diverse sample (36% white).
Where will this intervention work best?	The program is attached to selected schools and integrated into school activities. This approach is specifically designed to engage high-risk families who may not otherwise have access to services (or may not choose to use them). Results show that such families are likely to self-select into the program.
What is required to implement this intervention?	A Family Resource Centre is established in the school and a part-time consultant provides services and resources to all parents, as well as the ATP curriculum. At the selective level, home visits are conducted and professional services such as behavioural family therapy and a school monitoring system are provided to families. Parent consultants are tertiary educated and provided with training and weekly supervision. Materials include videotapes and questionnaires.
Resources and contact information	http://www.uoregon.edu/~cfc/intervention.htm
References	Botvin, et al. (1990); Dishion, et al. (2002); Dishion, et al. (2003); Connell, et al. (2007); Stormshak and Dishion (2009); Stormshak, et al. (2010).

Recommended strategy 16.2: Proportion of young people using/age of initiating use of: alcohol

Name of intervention	Strengthening Families Program 10-14 (SFP 10-14, aka Iowa Strengthening Families Program)
Organisation	Iowa State University, USA; Oxford Brookes University, UK; University of Utah, USA.
Brief literature review	SFP was developed by Dr Karol Kumpfer at the University of Utah to increase resilience among children (aged 6-12) of drug-using parents, and was based on a biopsychosocial model and other empirically based models of family risk and protective factors. In the 1990s it was substantially revised by Dr Virginia Molgaard at the University of Iowa to become a universal program targeting children aged 10-14 years. This revised version involves seven two-hour sessions which are presented and facilitated by group leaders. For the first hour, parents and children meet in separate groups. Youth activities include group discussions, skill practice and social bonding, while parent sessions incorporate presentations, role-plays, group discussions and viewing of DVDs. During the second hour, families get together to practice skills, play games and do family projects. The UK version also has four optional booster sessions.
How and why does this intervention work?	Several high-quality studies support the revised or Iowa SFP, notably a longitudinal study in which 33 schools were randomly assigned to each of three groups: SFP, another intervention and control. Young people were followed from Grade 6 to Grade 12. Those in the SFP group had significantly lower rates of alcohol use, drunkenness and tobacco use than controls, and for some outcomes this difference increased over time. Other positive outcomes for youth in the intervention group included fewer conduct problems in school, while their parents had stronger skills in parenting and relationship building and more positive feelings towards their children. A later follow-up study found that the program delayed initiation of substance use, leading to less drunkenness, alcohol-related problems and use of other drugs among participants at age 21, compared with the control group (Spath, et al. 2009). A cost-effectiveness study (Spath, et al. 2002) found a benefit-cost ratio of US\$9.60 per dollar invested. SFP 10-14 has been highlighted in two Cochrane reviews, which identified the number needed to treat (NNT) as 9 for preventing initiation of problem drinking four years later. Preliminary, qualitative evidence is available from the UK implementation and a four-year, large-scale randomised controlled trial is under way (Debby Allen, personal communication, 18 June 2010). An RCT has also been conducted in Sweden but results have not yet been reported.
On what population does this intervention work best?	The SFP 10-14 is a universal prevention program designed for children around the time of transition to adolescence and high school, and their parents. It was developed and trialled initially in the rural Mid-West of the United States with a predominantly white population and mainly intact families. It has since been adapted for Europe and for the UK, where it is used as a universal prevention program and also targeted at families experiencing legal and social problems.
Where will this intervention work best?	The intervention was designed and trialled in the US but has recently been adapted for the UK and Europe. In the UK, the program has been run out of family resource centres and community centres. Qualitative evidence suggests the timing and location of the program is crucial to family attendance. Some parents may require support with literacy as the program includes written exercises and games.
What is required to implement this intervention?	Manuals, DVDs and other materials are available commercially. Local adaptation is required; researchers at Oxford Brookes University, UK, have modified the materials to ensure they are culturally appropriate and have a harm minimisation focus, and have collected qualitative data on what is needed for successful implementation.
Resources and contact information	<p>http://www.extension.iastate.edu/sfp/; http://www.strengtheningfamiliesprogram.org/index.html</p> <p>UK rollout: Debby Allen, School of Health and Social Care, Oxford Brookes University; dallen@brookes.ac.uk</p>
References	Alcohol Education and Research Council (undated); Spoth, Gyll and Day (2001); Spoth, Redmond and Shin (2001); Kumpfer, Alvarado, Tait and Turner (2002); Spoth, Randall, Shin and Redmond (2005); Allen, Coombes and Foxcroft (2007); Trudeau, Spoth, Randall and Azevedo (2007); Allen, Coomes and Foxcroft (2009); Spoth, Trudeau, Gyll, Shin and Redmond (2009); Skärstrand, Bränström, Sundell, Källmén and Andréassen (2009). Reviews: Foxcroft, Ireland, Lowe and Breen

(2002); Physician Leadership on National Drug Policy (2002); Foxcroft, Ireland, Lister-Sharp, Lowe and Breen (2003); Kumpfer and Alvarado (2003); National Institute on Drug Abuse (2003); Hayes, Smart, Toumbourou and Sanson (2004); Loveland-Cherry (2005); Gates, McCambridge, Smith and Foxcroft (2006); Petrie, Bunn and Byrne (2007).

Recommended strategy 16.3: Proportion of young people using/age of initiating use of: alcohol	
Name of intervention	School Health and Alcohol Harm Reduction Project (SHAHRP)
Organisation	National Drug Research Institute, Curtin University
Brief literature review	Research evidence was incorporated into the design and implementation of SHAHRP. Phase 1 provides 17 skills-based activities during 8-10 lessons for students in their first year of high school (around 13 years old). Phase 2 is implemented the following year and involves 12 activities delivered over 5-7 weeks. Approximately 2/3 of activities are interactive, and include skill rehearsal, group discussions and decision making by individuals and groups.
How and why does this intervention work?	Findings from a large-scale, randomised trial with long-term follow up support the use of this strategy. Schools were assigned randomly to intervention and comparison conditions and students were followed for 32 months from baseline, with assessments at 8 and 20 months. Evaluation included a measure of implementation fidelity, which indicated that students in the intervention group were taught 80.7% of the documented SHAHRP curriculum. Outcomes were measured by self-report survey and included: knowledge about alcohol, total consumption, risky patterns of consumption, context of alcohol use, and alcohol-related risks or harms associated with the student's or other people's use of alcohol. Eight months after the baseline, intervention students were consuming 31.4% less alcohol than controls, and were less likely to consume at risky levels. This statistically significant difference was maintained at 20 months but began to converge (although differences were still significant) at 32 months. Consistent with the goals of the program, intervention students were less likely to drink unsupervised and less likely to experience harm from their own use of alcohol. The program cost AU\$23.55 per student over two years, including teacher training and release.
On what population does this intervention work best?	This is a universal program for students in their first year of high school. The program was trialled at 14 government secondary schools in the metropolitan area of Perth, WA.
Where will this intervention work best?	SHAHRP was designed in Australia with the explicit goal of harm minimisation, and is delivered in high school classrooms.
What is required to implement this intervention?	Teachers receive 2 days' training prior to each phase, and there is a teacher manual, student workbooks and a video.
Resources and contact information	http://ndri.curtin.edu.au/research/shahrp/
References	McBride, Farrington, Midford, Meuleners and Phillips (2004). Review: Toumbourou, et al. (2007_.

Recommended strategy 16.4: Proportion of young people using/age of initiating use of: alcohol

Name of intervention	Climate Schools Alcohol and Cannabis Prevention Program
Organisation	National Drug and Alcohol Research Centre, University of New South Wales..
Brief literature review	The program is delivered in a school setting and was trialled with students in the early years of high school (average age 13 years). The alcohol component consists of six lessons, each beginning with a 15-20 minute computer-based presentation of a cartoon teenage drama, followed by class activities such as role plays, small group discussions, problem-solving and skill rehearsal. The cannabis component was delivered six months later. The first three of the five sessions included some revision of the alcohol-related content, and the final two sessions focused exclusively on cannabis, using a similar combination of computer-based and class activities.
How and why does this intervention work?	The Climate Schools model was designed to overcome problems with the delivery of school-based programs; specifically, to ensure fidelity and consistency of all program components, and to be easy to implement. The use of computers ensures all students receive the complete course content and teachers cannot easily modify or omit components. The model was designed in Australia based on a harm minimisation approach, which is consistent with evidence and current policy in this country. The Alcohol Prevention program has demonstrated improvements in alcohol-related knowledge for boys and girls in the intervention group, while decreased alcohol consumption, less frequent binge drinking and fewer alcohol-related harms were reported only by girls (Vogl, et al. 2009). A cross-validation trial again found the program increased knowledge and also decreased average weekly alcohol consumption among intervention participants in the short-term (Newton, Vogl, Teesson and Andrews, 2009). The Alcohol and Cannabis Prevention Program decreased use of both these drugs among high school students six months after the intervention (Newton, Andrews, Teesson and Vogl, 2009).
On what population does this intervention work best?	This is a universal program delivered in a school setting and integrated into the health curriculum. A cluster-randomised trial of the Alcohol Prevention Program has been conducted, involving 16 schools (n=1466). The Alcohol and Cannabis Prevention Program was evaluated with a cluster-randomised trial at 10 schools (n=764). Control schools used their usual health programs, generally based on social influence theories and a harm minimisation approach and provided by state education authorities. Students completed the intervention during Year 8
Where will this intervention work best?	This is a school-based prevention program developed in Australia. It aims to involve high school students and their teachers.
What is required to implement this intervention?	Teachers are given a program manual. No training is required. The computer-based components are provided on CD-ROMs, which are designed to be self-loading. Computer support was offered to trial schools but not required.
Resources and contact information	National Drug and Alcohol Research Centre, University of New South Wales. Example lessons can be viewed at: www.climateschools.tv
References	Newton, Andrews, Teesson and Vogl (2009) Vogl, Teesson, Andrews, Bird, Steadman and Dillon (2009) Newton, Vogl, Teesson and Andrews (2010)

Table 6 Proportion of young people using/age of initiating use of tobacco: recommended strategies

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(17.1) Gatehouse Project	2	Yes	Yes	Yes	LOW SES CALD
(17.2) Strengthening Families Program 10-14	1	Yes	Yes	Yes	LOW SES
(17.3) Smoking Cessation for Youth Project	2	Yes	Yes	Yes	LOW SES
(17.4) Seven Steps to a Smoke-Free School	5	No	Yes	Yes	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 (e.g., pre and post-testing, post-testing only, or qualitative methods) or historical comparison group (e.g., normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (e.g., 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 (e.g. 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 trialled with people in disadvantaged communities, Indigenous people and/or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

3.4.9 Updated catalogue entries

Recommended strategy 17.1: Proportion of young people using/age of initiating use of: tobacco	
Name of intervention	The Gatehouse Project
Organisation	Centre for Adolescent Health, Royal Children's Hospital Melbourne.
Brief literature review	The Gatehouse Project is primarily a mental health promotion program. It uses a five-step evidence-based approach to promote student engagement and school connectedness. This involves: establishing an Adolescent Health Team to coordinate the planning, implementation and evaluation of strategies; reviewing policies, programs and practices to identify priorities for action; planning strategies to address areas identified in the review; training and implementation, developing a program of professional development and training for members of the school community; and monitoring and evaluation of implementation to informing future review, planning and change. The program is aimed at the whole school. This includes students in all year grades for the duration of their attendance at the school.
How and why does this intervention work?	The project was evaluated using a randomised controlled trial design, involving government, independent and catholic secondary schools. Outcome measures were collected in 12 intervention schools and 14 comparison schools. Across three periods of follow-up, year 8, year 10 and 1-year post-secondary school, there was a consistent 3% to 5% risk difference between intervention and control groups for regular smoking and friends' tobacco use. The greatest reported effect was a reduction in regular smoking by those in the intervention group, primarily among Year 8 students (Bond, et al. 2004b). One-year post secondary follow-up also revealed that students with low school connectedness were twice as likely to be regular smokers. Students with both good social and school connectedness had the best outcomes one-year post-secondary school in relation to depressive symptoms, regular smoking and drinking, marijuana use, completion of year 12 and a good tertiary entrance score (Bond, et al. 2007).
On what population does this intervention work best?	The Gatehouse Project was developed in Australia and trialled in metropolitan and regional Victoria. The initial trial included Year 8 students who were followed up in both Year 10 and one-year after leaving secondary school, although the program is aimed at all age groups in the school.
Where will this intervention work best?	The Gatehouse Project is a whole school intervention that includes students, parents, school staff and community members.
What is required to implement this intervention?	Resources are available to assist in the implementation of the Gatehouse Project. These include: team guidelines and teaching resources, tools for student assessment and professional development including workshops, short courses, research symposia and postgraduate programs.
Resources and contact information	Paras Tsiamis, Project Liaison Officer Telephone +61 3 9345 6652 Fax + 61 3 9345 6502 Email: paras.tsiamis@rch.org.au Website: http://www.rch.org.au/gatehouseproject/
References	Bond, et al. (2007) Bond, et al. (2004)

Recommended strategy 17.2: Proportion of young people using/age of initiating use of: tobacco

Name of intervention	Strengthening Families Program 10-14 (SFP 10-14, aka Iowa Strengthening Families Program)
Organisation	Iowa State University, USA; Oxford Brookes University, UK; University of Utah, USA.
Brief literature review	SFP was developed by Dr Karol Kumpfer at the University of Utah to increase resilience among children of drug-using parents, and was based on a biopsychosocial model and other empirically based models of family risk and protective factors. In the 1990s it was substantially revised by Dr Virginia Molgaard at the University of Iowa to become a universal program targeting children aged 10-14 years. This revised version* involves seven two-hour sessions which are presented and facilitated by group leaders. For the first hour, parents and children meet in separate groups. Youth activities include group discussions, skill practice and social bonding, while parent sessions incorporate presentations, role-plays, group discussions and viewing of DVDs. During the second hour, families get together to practice skills, play games and do family projects. The UK version also has optional booster sessions. *The original, 14-session version is designed for children aged 6-12 years.
How and why does this intervention work?	Several high-quality studies support the revised or Iowa SFP, notably a longitudinal study in which 33 schools were randomly assigned to each of three groups: SPF, another intervention and control. Young people were followed from Grade 6 to Grade 12. Those in the SPF group had significantly lower rates of alcohol use, drunkenness and tobacco use than controls, and for some outcomes this difference increased over time. Other positive outcomes for youth in the intervention group included fewer conduct problems in school, while their parents had stronger skills in parenting and relationship building and more positive feelings towards their children. A cost-effectiveness study (Spath, et al. 2002) found a benefit-cost ratio of US\$9.60 per dollar invested. SFP 10-14 has been highlighted in two Cochrane reviews, which identified the number needed to treat (NNT) as 9 for preventing initiation of problem drinking four years later. Preliminary, qualitative evidence is available from the UK implementation and a large-scale randomised controlled trial is planned (subject to funding).
On what population does this intervention work best?	The SFP 10-14 is a universal prevention program designed for children around the time of transition to adolescence and high school, and their parents. It was developed and trialled initially in the rural Mid-West of the United States with a predominantly white population and mainly intact families. It has since been adapted for Europe and for the UK, where it is used as a universal prevention program and also targeted at families experiencing legal and social problems.
Where will this intervention work best?	The intervention was designed and trialled in the US but has recently been adapted for the UK and Europe. In the UK, the program has been run out of family resource centres and community centres. Qualitative evidence suggests the timing and location of the program is crucial to family attendance.
What is required to implement this intervention?	Manuals, DVDs and other materials are available commercially. Local adaptation is required; researchers at Oxford Brookes University, UK, have modified the materials to ensure they are culturally appropriate and have a harm minimisation focus, and have collected qualitative data on what is needed for successful implementation.
Resources and contact information	<p>http://www.extension.iastate.edu/sfp/; http://www.mystrongfamily.org/about.htm; http://www.strengtheningfamiliesprogram.org/index.html</p> <p>UK rollout: Debby Allen, School of Health and Social Care, Oxford Brookes University; dallen@brookes.ac.uk</p>
References	Alcohol Education and Research Council (undated); Spoth, Gyll and Day (2001); Spoth, Redmond and Shin (2001); Kumpfer, Alvarado, Tait and Turner (2002); Spoth, Randall, Shin and Redmond (2005); Allen, Coombes and Foxcroft (2007); Trudeau, Spoth, Randall and Azevedo (2007).

Reviews: Foxcroft, Ireland, Lowe and Breen (2002); Physician Leadership on National Drug Policy (2002); Foxcroft, Ireland, Lister-Sharp, Lowe and Breen (2003); Kumpfer and Alvarado (2003); National Institute on Drug Abuse (2003); Hayes, Smart, Toumbourou and Sanson (2004); Loveland-Cherry (2005); Gates, McCambridge, Smith and Foxcroft (2006); Petrie, Bunn and Byrne (2007).

Recommended strategy 17.3: Proportion of young people using/age of initiating use of: tobacco	
Name of intervention	Smoking Cessation for Youth Project (SCYP)
Organisation	WA Centre for Health Promotion Research
Brief literature review	The SCYP was a three-year Healthway funded project, which aimed to provide skill-based activities for young people (aged 14-15) who smoked occasionally or daily. The program was designed to help these students to quit or at least reduce their current smoking, while reaffirming the advantages of being smoke-free to young people who did not smoke. SCYP is a harm minimisation program consisting of eight one-hour lessons given over two years, quitting support from school nurses and enactment of policies to support the school program. The program has been taken up by schools in both South Australia and the Australian Capital Territory.
How and why does this intervention work?	Earlier research (Hamilton, et al. 2000) indicated that a harm minimisation approach to smoking cessation was acceptable to teenagers and may be more effective in reaching occasional and regular smokers compared to an abstinence approach. SCYP was evaluated using a cluster-randomised trial in Perth involving 4000 adolescents at 30 government high schools between 1999 and 2000. At 20 months post-baseline, intervention students were less likely to smoke regularly or to have smoked within the previous 30 days. Regular smoking among the comparison group increased from 4.4% to 10.9% and from 3.0% to 5.0% among the intervention group. Smoking in the past 30 days decreased from 25.3% to 21.2% in the comparison group and from 20.4% to 13.9% in the intervention group.
On what population does this intervention work best?	The program combines a universal prevention message and policies with selective support for students who are already smoking. It was trialled with students aged 12-15 years, attending government high schools in Perth, Western Australia. Schools were selected from high, middle and low socio-economic strata areas.
Where will this intervention work best?	SCYP was developed in Australia and has a harm minimisation focus, consistent with national and state policies. It is implemented in high schools.
What is required to implement this intervention?	Training in accordance with the Health Promoting Schools Model and harm minimisation intervention materials for the classroom, the school nurse and parents. The KEEP LEFT Youth Smoking Cessation Guide for Nurses resource was developed as part of this project to assist students with reducing or quitting smoking or staying smoke free.
Resources and contact information	Margaret Hall Child and Adolescent Health Promotion Centre Edith Cowan University 2 Bradford Street Mt Lawley, WA, 6050 Email: m.hall@ecu.edu.au Website: www.chprc.ecu.edu.au
References	Hamilton, et al. (2000) Hamilton, et al. (2005)

Recommended strategy 17.4: Proportion of young people using/age of initiating use of: tobacco

Name of intervention	7 Steps to a Smoke Free School
Organisation	Quit, Victoria.
Brief literature review	7 Steps to a Smoke Free School is a set of resources for schools developed by the Victorian Quit Program. The program aims to reduce both passive and active smoking. The program applies to staff as well as students and includes written resources for schools. These resources can be adapted to suit individual schools. The seven steps of the program are: policy development; development of curriculum content; development of curriculum structure; professional development; parental involvement; support for students; program review.
How and why does this intervention work?	The program is based on the 'Social Influences to Smoke Model'. Successful programs such as 'Life Skills Training' use a social influences model, however, the 7 steps program uses a harm minimisation rather than an abstinence approach. While prevention is an aim the program also aims to delay the uptake of smoking by students, reduce the chances of students becoming regular smokers if they take up the habit and therefore make it easier for them to stop. The program has not been independently evaluated.
On what population does this intervention work best?	This program is aimed at all school members, including students and staff, as well as parents. Student years primarily targeted by the program include years 7-10. Curriculum focuses on initial lessons early in secondary school with booster sessions in years 9 and 10.
Where will this intervention work best?	7 Steps to a Smoke Free School is a school-based program.
What is required to implement this intervention?	Quit Victoria provides two resources for their implementation of the program. These include 'Seven Steps to a Smoke Free School' and 'Why can't we smoke at school?: Guidelines to address students' smoking'.
Resources and contact information	The program can be accessed via the Quit Victoria website. Written resources can be accessed from the 7 Steps to a Smoke Free School webpage.
References	None available

Table 7 *Proportion of young people using/age of initiating use of illicit drugs: recommended strategies*

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(18.1) Big Brothers Big Sisters	1	Yes	Yes	Yes	LOW SES CALD
(18.2) Climate Schools Alcohol and Cannabis prevention course	1	Yes	Yes	Yes	UNIVERSAL
(18.3) Project Towards No Drug Abuse	2	Yes	Yes	Yes	LOW SES CALD
(18.4) CASASTART	1	Yes	Yes	Yes	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 (e.g., pre and post-testing, post-testing only, or qualitative methods) or historical comparison group (e.g., normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (e.g., 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 (e.g. 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 trialled with people in disadvantaged communities, Indigenous people and/or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

3.4.10 Updated catalogue entries

Recommended strategy 18.1: Proportion of young people using/age of initiating use of: illicit drugs	
Name of intervention	Big Brothers Big Sisters
Organisation	Big Brothers Big Sisters of Australia
Brief literature review	Adult volunteers are linked with vulnerable young people (aged 7-17), and commit to spending at least an hour a week for 12 months engaged in activities together. There is no structured curriculum. The emphasis is on building a genuine relationship between the mentor and young person.
How and why does this intervention work?	Big Brothers Big Sisters of America was evaluated in one experimental study in which 1138 young people from eight BBBS agencies were randomly assigned to control or treatment conditions. Both groups were followed over 18 months (84.3% retention rate). Young people involved in BBBS were 27% less likely to initiate alcohol use (marginally significant), 46% less likely to initiate illegal drug use and 32% less likely to hit someone (difference significant only for girls and white boys). They also attained better grades on average and were less likely to skip school. Evaluations of the school-based version are under way in America and Canada. A survey of 200 adults who had been 'Littles' (i.e. mentored children) found they reported overwhelmingly positive impacts of their 'Bigs' on their lives. Many had been in contact with their 'Bigs' for three years or more. Threshold analysis of the costs and projected benefits of the program resulted in estimates that if it successfully prevents early school leaving and lifetime criminality in 1-2% of participants, the program would break even.
On what population does this intervention work best?	This is an indicated program, targeting young people at high risk of poor outcomes. The initial trial was carried out in the US, with boys and girls aged 10-16, 60% male, more than 50% from an ethnic minority, almost all from single-parent households. Many participants were from low-income households and/or had a family history of violence or substance abuse.
Where will this intervention work best?	Dating back to 1904, this mentoring program is established in 12 countries, including Melbourne in Australia. Mentors and young people meet in a variety of locations, depending on the activities they choose to do together. A school-based version is also available and is currently running in Queensland.
What is required to implement this intervention?	There is a rigorous process of checking potential volunteers to ensure the children's safety. The national office links the member agencies (mainly non-profit organisations) running programs in various states, providing advice on program establishment, staff training, funding opportunities etc.
Resources and contact information	http://bbbsi.org/about/ ; http://www.bigbrothersbigsisters.org.au ; http://www.promisingpractices.net/program.asp?programid=125
References	Tierney, Grossman and Resch (1995); Harris Interactive (circa 2009); Moodie and Fisher (2009). Reviews: Beckett (2008).

Recommended strategy 18.2: Proportion of young people using/age of initiating use of: illicit drugs	
Name of intervention	Climate Schools Alcohol and Cannabis Prevention Program
Organisation	National Drug and Alcohol Research Centre, University of New South Wales..
Brief literature review	The program is delivered in a school setting and was trialled with students in the early years of high school (average age 13 years). The alcohol component consists of six lessons, each beginning with a 15-20 minute computer-based presentation of a cartoon teenage drama, followed by class activities such as role plays, small group discussions, problem-solving and skill rehearsal. The cannabis component was delivered six months later. The first three of the five sessions included some revision of the alcohol-related content, and the final two sessions focused exclusively on cannabis, using a similar combination of computer-based and class activities.
How and why does this intervention work?	The Climate Schools model was designed to overcome problems with the delivery of school-based programs; specifically, to ensure fidelity and consistency of all program components, and to be easy to implement. The use of computers ensures all students receive the complete course content and teachers cannot easily modify or omit components. The model was designed in Australia based on a harm minimisation approach, which is consistent with evidence and current policy in this country. The Alcohol Prevention program has demonstrated improvements in alcohol-related knowledge for boys and girls in the intervention group, while decreased alcohol consumption, less frequent binge drinking and fewer alcohol-related harms were reported only by girls (Vogl, et al. 2009). A cross-validation trial again found the program increased knowledge and also decreased average weekly alcohol consumption among intervention participants in the short-term (Newton, Vogl, Teesson and Andrews, 2009). The Alcohol and Cannabis Prevention Program decreased use of both these drugs among high school students six months after the intervention (Newton, Andrews, Teesson and Vogl, 2009).
On what population does this intervention work best?	This is a universal program delivered in a school setting and integrated into the health curriculum. A cluster-randomised trial of the Alcohol Prevention Program has been conducted, involving 16 schools (n=1466). The Alcohol and Cannabis Prevention Program was evaluated with a cluster-randomised trial at 10 schools (n=764). Control schools used their usual health programs, generally based on social influence theories and a harm minimisation approach and provided by state education authorities. Students completed the intervention during Year 8.
Where will this intervention work best?	This is a school-based prevention program developed in Australia. It aims to involve high school students and their teachers.
What is required to implement this intervention?	Teachers are given a program manual. No training is required. The computer-based components are provided on CD-ROMs, which are designed to be self-loading. Computer support was offered to trial schools but not required.
Resources and contact information	National Drug and Alcohol Research Centre, University of New South Wales. Example lessons can be viewed at: www.climateschools.tv
References	Newton, Andrews, Teesson and Vogl (2009) Vogl, Teesson, Andrews, Bird, Steadman and Dillon (2009) Newton, Vogl, Teesson and Andrews (2010)

Recommended strategy 18.3: Proportion of young people using/age of initiating use of: illicit drugs

Name of intervention	Project Towards No Drug Abuse (Project TND)
Organisation	Institute for Health Promotion and Disease Prevention, University of Southern California.
Brief literature review	Project Towards No Drug Abuse (Project TND) is a classroom-based drug abuse prevention program that was developed in California for youth in alternative high schools who have transferred out of the regular system due to problems such as drug use or lack of credits. The program consists of twelve 40-50 minute lessons delivered over a 4 week period. The aim of Project TND is to counteract risk factors for drug abuse relevant to older teens. The program can be used in a self-instruction format or run by a health educator. It includes group discussions, games, role-playing, videos and student worksheets to provide cognitive motivation enhancement activities not to use drugs, detailed information about the social and health consequences of drug use and correction of false cognitive perceptions. Topics addressed include active listening skills, effective communication skills, stress management, coping skills, tobacco cessation techniques and self control. In addition, there is a community program component, in which students participate in a schools-as-communities component outside the classroom.
How and why does this intervention work?	Six major field trials of Project TND have been conducted. Intervention groups were led by either school staff or a health educator and compared to a usual care group. The program proved effective in reducing hard drug use over a five-year period as well as showing reductions in cigarette and marijuana smoking for up to two years after the program. One year after the program, participants in the intervention groups had a 25% reduced prevalence of hard drug use and a 7% reduction in alcohol use. There was also some reduction in alcohol use among baseline drinkers and less victimisation among males. A 2-year follow-up, program effects were maintained for cigarette smoking and hard drug use when the program was conducted by a health educator. At 4 and 5 year follow-up students who participated in school and community based intervention arms continued to show a reduction in hard drug use. Those students who participated in the classroom intervention only had less than half the amount of hard rug use in the past month compared to controls. The additional schools-as-communities component was not found to provide significant additional results.
On what population does this intervention work best?	The program is aimed at older adolescent students, aged 14-19 years. Project TND was tested over six separate trials. The first three involved approximately 3,000 students from 42 Californian schools. The fourth included 2734 students at 18 schools. A peer-led, interactive version was trialled with 541 students at 14 alternative high schools. A dissemination trial to establish whether the program maintained good outcomes with wider implementation has also been conducted, involving 2983 students at 65 schools across the United States. Student populations were culturally diverse.
Where will this intervention work best?	This is a classroom-based program. Project TND was originally developed for youth in alternative high schools but has also been implemented in mainstream high schools in the United States.
What is required to implement this intervention?	The curriculum component includes a Teacher's Manual (US\$70) and student workbooks (US\$50 for set of five). Optional materials can also be purchased. There is also a training component for staff. Costs include trainer's fees and travel.
Resources and contact information	Steve Sussman – Ph: (626) 457-6635; Email: ssussma@usc.edu http://www.findyouthinfo.gov
References	Sussman, Sun, McCuller and Dent (2003); Sun, Skara, Sun, Dent and Sussman (2006); Sun, Sussman, Dent and Rohrbach (2008); Rohrbach, Gunning, Sun and Sussman (2010); Valente, et al. (2007).

Recommended strategy 18.4: Proportion of young people using/age of initiating use of: illicit drugs	
Name of intervention	CASASTART
Organisation	US National Center on Addiction and Substance Abuse
Brief literature review	The program has eight core elements, which are adapted to meet the needs of individual project sites. There is no set curriculum. The eight core components are: enhanced policing and enforcement (including community police officers working with young people in drug education, recreational programs and special events and coordinating with case managers); case management (each looking after 13-18 families); targeted family services; links with the criminal justice system; after-school and holiday activities for youth; access to tutoring and homework assistance; group mentoring; and financial incentives.
How and why does this intervention work?	Severely disadvantaged neighbourhoods in six US cities were targeted for the intervention. Five of these sites were evaluated, using a randomised controlled design. One year after the intervention, young people who had been randomly assigned to the treatment group were significantly less likely than controls to have used drugs in the past month, to have used 'hard' drugs such as cocaine or heroin, or to have used 'gateway' drugs such as alcohol, marijuana, inhalants or cigarettes. Intervention group youths were also less likely to report selling drugs or committing a violent crime. Young people in the program reported more positive peer group support, felt less peer pressure and were less likely to associate with delinquent peers. There were no differences on a number of other outcomes, including antisocial risk-taking behaviours, self esteem, family conflict, teen pregnancy, school achievement or attachment, property crimes or gang membership.
On what population does this intervention work best?	This is an indicated/selective prevention program targeting young people living in serious economic and social deprivation. Young people aged 11 to 13 (average 12.4 years) in six US cities took part in the trial (338 intervention, 333 control, 203 quasi-experimental comparison group). All were considered 'at risk' and lived in severely disadvantaged neighbourhoods. Just over half were male, 8% were white or Asian, 58% black and 34% Hispanic. In 80% of participating families the mother was the primary caregiver. Fewer than half of the caregivers were employed and most received some sort of public assistance.
Where will this intervention work best?	CASASTART is designed to be integrated into school and community settings and can be implemented by youth agencies, social services, schools, police and/or community-based organisations.
What is required to implement this intervention?	Close working between participating organisations and adequate resources are needed to deliver a coordinated, comprehensive program of monitoring and assistance. A Field Guide is available.
Resources and contact information	http://casastart.org/default.aspx ; http://www.promisingpractices.net/program.asp?programid=107
References	Harrell, Cavanagh and Sridharan (1999)

3.5 Year 10-12 apparent retention rate

For this update, the literature search re-examined the search outlined in the first version of this narrative review. Key search terms were retention rate and apparent retention rate for the publication years 2008 - 2010, on the PsycINFO, ERIC and A+ Education databases. Additional literature searches were also conducted on known practice literature web-sites. These sites included: the California Evidence-Based Clearinghouse for Child Welfare; the Promising Practices Network; the Campbell Collaboration; the U.S. Department of Education's Institute of Education Sciences, What Works Clearinghouse; the Australian Council for Educational Research; the Commonwealth Department of Employment Education and Workplace Relations; and the Victorian Department of Department of Education and Early Childhood Development.

3.5.1 Background

School retention and the related constructs of school attendance, reducing school drop-out, student attrition and truancy are very real issues that face all educational systems. There is clear evidence that not completing high school is associated with negative results such as welfare dependency, unemployment, health problems, engaging in criminal behaviour and higher rates of incarceration (Christenson, Sinclair, Lehr, and Hurley, 2000; Rumberger, 1995).

The term 'apparent retention rate' recognises the inherent difficulties associated with calculating rates of school drop out and retention. It is well recognised that this is a crude index of retention as it shows the number of students who remain in Year 12 as a percentage of the number in that cohort who started secondary school the relevant number of years previously. It does not account for inter-sector, inter-state or repeating students (Harrington, 2005). The ABS also derives measures of continuation, participation and progression (see Rossiter and Duncan, 2006).

Reschly and Christenson (2006) make the important point that whilst the term 'drop-out' implies an individual event, it should be conceptualised as a gradual disengagement process. This acknowledges the recognised relationship between early childhood experiences and school completion. Consequently, efforts to promote engagement with school systems should commence as early as possible.

The academic literature contains a large volume of work that aims to identify and better understand the impact of key risk factors associated with non completion of high school. A major review (Brooks, Milne, Paterson, Johansson, and Hart, 1997) outlined a number of factors leading to early school leaving in Australia as identified by school intervention practitioners. These included:

- continual experiences of academic failure
- inflexible school curriculum and teaching strategies
- alienating school environments
- family conflict and breakdown
- low self-esteem
- poor student / teacher relations
- student disinterest in education
- disruptive behaviour.

Fortin, Marcotte, Potvin, Royer and Joly (2006) developed a useful typology comprising four sub-groups of at-risk students:

- The anti-social covert behaviour type
- The uninterested in school type

- The school and social adjustment difficulties type
- The depressive type.

Many programs aim to improve school retention rates by targeting one or more risk factors. Balfanz, Herzog and Mac Ivor (2007) use longitudinal analysis to demonstrate how four predictive indicators reflecting poor attendance, misbehaviour, and course failures in sixth grade can be used to identify 60% of the students who will not graduate from high school.

Ainley and McKenzie (2007) in their analysis of Longitudinal Surveys of Australian Youth (LSAY) (1995 - 2001) data found that “engagement in school and positive attitudes contribute to the completion of secondary school and participation in tertiary education, over and above the effects of literacy and numeracy. Most of the social background factors associated with school completion operate by influencing intentions that are formed by relatively early in secondary school. This underlines the importance of focusing on what happens early in schooling as well as reforming the post-compulsory years” (Ainley and McKenzie, 2007, p. 10).

3.5.2 The evidence base

There is an abundance of programs aimed at improving school retention rates reported in the academic literature. However, there is little comparative evidence to support their efficacy. The current literature review found no major reviews of the evidence comparing various educational and community interventions. Kemp (2006) notes that this makes it difficult for practitioners to choose appropriate strategies.

Wilson, Gottfredson and Najaka (2001) undertook a meta-analysis of 165 studies of school-based programs aimed at preventing crime, substance, drop-out and other behaviour problems. It suggested that many popular school-based programs have not been well studied and that whilst school-based programs are effective in reducing drop-out rates, the overall size of the effect is small. In the Australian context, Lamb and Rice (2008) note the lack of research on strategies for schools to improve student engagement.

The two most important sources of information identified from the practice literature were the Promising Practices Network (website: www.promisingpractices.net) and What Works Clearinghouse (Institute of Education Sciences) (website: <http://ies.ed.gov/ncee/wwc/>). Another important work was the recent practice review into cost-effective interventions for young people by Beckett (2008). The Victorian Government's tool-kit "It's Not OK to Be Away: Student Attendance Support Kit" (Department of Education and Training, 2006) (<http://www.education.vic.gov.au/healthwellbeing/wellbeing/attendance/initiative.htm>) is also a useful starting point for community awareness raising and providing a framework for implementing local projects and interventions.

An important piece of work has recently been completed by Lamb and Rice (2008). This study sought to identify effective intervention strategies that increase rates of school completion for at-risk students. It identified three broad types of school retention strategy: supportive school cultures; school-wide strategies; and student focused strategies. The authors noted that student engagement strategies are most effective when the three types of strategy operate together. Within each area, individual strategies or features were identified for which there is evidence of improvements in engagement and completion.

3.5.3 Selection of interventions

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

- Career Academies (Kemple and Willner, 2008)
- Check & Connect (Sinclair, Christenson and Thurlow, 2005)
- The Futures Program and the Maryland Tomorrow Program (Lever, Sander, Lombardo, Randall, Axelrod, Rubenstein and West, 2004)

- STAIRS Case Management Project (Strategic Partners in association with the Centre for Youth Affairs and Development, 2001)

They represent a cross section of promising practices in the area and are described below.

The Check & Connect is a drop-out prevention program which involves mentorship and case management (the 'connect' component) as well as the continuous monitoring of school performance and attendance (the 'check' component). Each student is assigned a monitor who checks school progress, attendance and incidents at school. The case management aspect involves problem solving, family outreach, conflict resolution, academic support and recreational activities. Regular sessions with monitors occur once or twice a month. Monitors are usually university students, an emphasis is placed in their work on relationship continuity and being on call for the student. Check & Connect started in Dakota County, Minnesota, in the last decade (What Works Clearinghouse, 2006a).

Career Academies are a drop-out prevention programs which create a school within a high school, providing alternative technical education curricula, career counselling, academic coursework and work experience with local businesses. The focus is on post-secondary education. Career themes covered in these mini-schools or learning communities include health care, finance, technology, communications and government. Career Academies have been in operation for more than 30 years and have been applied, to varying degrees, in over 2500 schools in the United States (What Works Clearinghouse, 2006b).

The 'Maryland's Tomorrow Program', also operates as the 'FUTURES Program' in Baltimore City. It is a 5 year, comprehensive program comprising 5 components: 'basic skills enhancement', 'work experience', 'motivation and leadership development', 'student support' and 'transition services'. Program staff are housed within the high schools that offer the program. Potential students are identified as being at risk of dropping out in the latter part of Year 8 based on grades and attendance rates. As part of the program, students attend smaller classes, receive additional counselling and support services and participate in cultural enrichment, character development and career preparation activities. In addition, students are encouraged to participate in program specific field trips and summer school activities. In the first year of the program, students are taught by teachers who have received training in working with at risk students. Each student is assigned an 'advocate' for the duration of their time in the program whose role it is to encourage attendance, assist with problem resolution and explore personal goals. Each student also has access to a school based mental health clinician. Student advocates and other program staff work closely to develop an individual education plan for each student.

The STAIRS program commenced in 1999 as an intensive individualised case management project established as an initiative of the ACT Full Services School Unit. The program aims to assist 15-18 year olds who are at risk of dropping out of high school through integration into mainstream schooling, or to assist them to find alternative forms of education or work related training. Initially, enrolment in the program was the result of referrals from schools. More recently, referrals have also occurred through word of mouth. The program comprises four case managers that meet with young people in an informal and flexible manner that respects the confidentiality of the individual.

A recent review by Torgerson, See, Low, Wright and Gorard (2007) looking at intervention strategies for promoting participation in school and training for 16+ year olds from ethnic minorities, found a number of high-quality US studies which showed some evidence of positive effects in the school setting for interventions which included:

- monetary incentives for academic achievement
- systematic of monitoring with a student guidance counsellor
- worked based / vocational learning and academic learning – linked to certificates

- individualised teaching and curricula

In the non school setting, the same review found there was evidence of positive effects for interventions such as:

- mentoring of students
- social support including case management.

A well-researched intervention is the HILA program in Israel which targets school drop-outs and offers them alternative options to complete their education or re-enter the school system. The intervention includes monitoring of those students who go back into the system and offers basic skills training for those who do not reach matriculation certificate level (Kahan-Strawczynski, 2003).

The ALAS (Achievement for Latinos through Academic Success) program assigns a counsellor to the young person who monitors attendance, behaviour and academic performance. Counselling involves co-ordination, advocacy and problem solving skills for the student, their family especially within the school environment (What Works Clearinghouse, 2006c).

Tyler and Lofstrom (2009) in their recent review of drop-out prevention programs comment that while there is a small research base “close mentoring and monitoring of students appear to be critical components of successful programs” (Tyler and Lofstrom, 2009, p. 77). They highlighted three successful programs. These were: Check & Connect, Career Academies and Talent Development High Schools (TDHS). Two of these have already been included in this review, while the third TDHS will be briefly described. TDHS represents a high school reform approach which targets student attendance, behaviour and achievement, as well as drop-out prevention. “The model, developed at Johns Hopkins University, calls for schools to reorganise into small learning communities that feature a curriculum designed to prepare all students for high-level English and math courses, along with measures to increase family and community involvement in the school” (Tyler and Lofstrom, 2009, p. 91).

Several other promising interventions are noteworthy. These include the ‘Possible selves intervention to enhance school involvement’ (Oyserman, Terry and Bybee, 2002), ‘Empowerment groups for academic success’ (Bemak, Chi-Ying Chung and Siroskey-Sabdo, 2005), ‘A truancy intervention pilot project (DeSocio, VanCura, Nelson, Hewitt, Kitzman and Cole (2007) and ‘The effective learning program’ (Nowicki, Duke, Sisney, Stricker and Tyler, 2004).

Drop-out prevention advice for School Principals is provided in an article by Ramirez and Carpenter (2008). They include: personal relationships with teachers, family support and direct communication with the student, as well as early intervention and retrieval programs.

In the United States, National Dropout Prevention Center / Network is another source of useful information on research and evaluation on drop-out prevention. It list hundreds of local model programs see <http://www.dropoutprevention.org/ndpcdefault.htm>.

3.5.4 Discussion

The importance of school retention is highlighted by the recent Foundation for Young Australians report “A third of early school leavers are only marginally attached to the labour force in their seventh post-school year, and one in 20 have been in that position for most of the time since leaving school” (Foundation for Young Australians, 2008, p. vi).

The literature identified that school retention is a multidimensional issue that needs to address a range of contributing factors. The recent report by Lamb and Rice (2008) provides an important framework for understanding this issue. It identifies a range of potential interventions, some of which have been included in this catalogue. Rice and Lamb (2008) have also produced a guide to

help schools implement strategies to increase school retention including case examples from Victorian schools.

The School Retention Action Plan (SRAP) work of the Social Inclusion Board in South Australia (<http://www.socialinclusion.sa.gov.au/page.php?id=79>) represents a comprehensive framework and identifies initiatives aimed at promoting school engagement and student retention. It includes the Innovative Community Action Network (ICAN) (<http://www.ican.sa.edu.au/>; <http://www.socialinclusion.sa.gov.au/page.php?id=31>) which brings together young people, their families, as well as community, business and government stakeholders to find local solutions to school retention issues.

A recent SRAP publication includes a number of strategies for increasing engagement and promoting student retention in South Australian schools. These are: monitoring engagement, inclusive schooling, young person-centred learning and joined-up services. It notes that the key is to focus on the relationships between educators and young people (Social Inclusion Board, 2007).

The overview of government activities in South Australia designed to promote school to work transition is provided at the following web-site <http://www.decs.sa.gov.au/learningandwork/pages/default/>.

The Queensland Government has developed a five step model to address chronic absenteeism, school refusal and truancy (see <http://education.qld.gov.au/student-services/behaviour/docs/guidelines-chronic-absenteeism.doc>). The model includes the following steps:

- develop a school attendance policy
- record and follow up student absences
- monitor student non-attendance and patterns of non-attendance
- develop a positive school culture
- collaborate with other agencies.

A number of “carrot and stick” approaches were also found. Two approaches in the United States are the Abolish Chronic Truancy (ACT) Now and the Office of Juvenile Justice and Delinquency Prevention’s (OJJDP’s) Truancy Reduction Demonstration Program (TRDP). These projects include the involvement of the justice system in terms of notification of truancy offences for young people and educational neglect for parents. These projects also address the underlying causes of truancy and involve community participation (Baker, Sigmon and Nugent, 2001). A similar Australian experimental project involving police and school collaboration with community approaches can be found in the Wagga Wagga juvenile cautioning project (O’Connell, 1992).

In terms of structural changes, the NSW Department of Education and Training monitors the rate of suspension and expulsions across the state (NSW Department of Education and Training, 2007). The department has established a number of regional suspension centres to help referred students address the causes of their poor behaviour, as well as conflict resolution and literacy skills (NSW Department of Education and Training, 2007).

The Australian Federal and State governments have introduced a National Partnership on Youth Attainment and Transitions (<http://www.deewr.gov.au/youth/YouthAttainmentandTransitions/Pages/Home.aspx>) to increase the participation of young people in education and training. One aim is to have 90 per cent of young people in Australia obtaining a Year 12 or equivalent qualification by 2015. It involves initiatives in the areas of educational pathway development and mentoring, case management for students at risk, community and business linkages with schools, and career development information (e.g. Job Guide, see <http://www.jobguide.deewr.gov.au/>). In Victoria, many of these

initiatives will be carried out through the existing Local Learning and Employment Network (LLENS) (<http://www.education.vic.gov.au/about/directions/nationalpartnerships/youth.htm>).

Finally, it should be noted that this review should be read in conjunction with the related indicator on the proportion of early school leavers who are unemployed six months after leaving school.

3.5.5 References

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Table 8 Year 10-12 apparent retention rate: recommended strategies

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(19.1) Check & Connect	1	No	Yes	Yes	LOW SES CALD
(19.2) Career Academies	1	No	Yes	Yes	LOW SES CALD
(19.3) Maryland's Tomorrow Program	2	Yes	Yes	Yes	LOW SES CALD
(19.4) STAIRS program	5	No	No	Yes	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 (e.g., pre and post-testing, post-testing only, or qualitative methods) or historical comparison group (e.g., normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (e.g., 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 (e.g. 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 trialled with people in disadvantaged communities, Indigenous people and/or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

3.5.6 Updated catalogue entries

Recommended strategy 19.1: Year 10 - 12 apparent retention rate	
Name of intervention	Check & Connect
Organisation	Institute on Community Integration, University of Minnesota, Minneapolis, MN.
Brief literature review	<p>Check & Connect is well grounded in the concept areas of student engagement and drop-out, resiliency, social competence and home, school and community partnerships (Sinclair, et al. 2005). It contains several core elements: routine monitoring of school engagement; individualised counselling (basic and intensive); relationship building; academic motivation; following students from school to school; family out-reach; cognitive-behavioural problem solving; and promoting active participation with school events (Sinclair, et al. 2005).</p> <p>Two important principles are contained in this intervention. First the intervention understands that withdrawal and disengagement from school is a process rather than a specific event. Second the intervention focuses on amenable factors like school suspension policies, student attendance patterns and access to services, rather than on factors that are very hard for schools to change (like poverty, language spoken at home and disability).</p>
How and why does this intervention work?	The Check & Connect intervention has been evaluated by the program developers in the United States (see the What Works Clearinghouse, 2006a). In the most recent published study, 144 Year 9 students with emotional or behavioural disabilities were randomly assigned to an intervention or a control group (82% of the sample was male, 67% were from African American backgrounds, and 70% were eligible to receive to be involved in free school lunch program). After 4 or 5 years of follow-up, the intervention group had a lower drop-out rate, better school attendance, remained in school despite family mobility, were more likely to be engaged in schooling or training (at year 5), and more likely to have a post-school transition plan. Effective sizes for these outcomes were in the large to moderate range, according to Cohen's criteria.
On what population does this intervention work best?	Check & Connect has been shown to be effective in students with and without disability, across school grades and in urban communities (see Sinclair, et al. 1998; Sinclair, et al. 2005; What Works Clearinghouse, 2006a). The program has also been trialled with young people identified as regular truants, and with children in the early years of primary school identified as 'at risk' of behavioural problems or poor literacy.
Where will this intervention work best?	The intervention works best in supportive schools and communities in urban settings which can contain diverse language and economic groups. Evaluation research has been carried out in the United States.
What is required to implement this intervention?	Program monitoring staff are required who examine indicators of school attendance and provide mentoring, advocacy and case management. Monitors monitor student attendance on a daily or weekly basis. They make contact with students on average of one hour per week, all year round. They have a caseload of 25 – 44 students (Sinclair, et al. 2005).
Resources and contact information	<p>http://ici.umn.edu/checkandconnect/default.html</p> <p>A manual on the Check & Connect intervention is available from: http://ici.umn.edu/checkandconnect/publications/default.html#manual</p>
References	<p>Sinclair, et al. (1998)</p> <p>Sinclair, et al. (2005)</p> <p>What Works Clearinghouse (2006a)</p>

Recommended strategy 19.2: Year 10-12 apparent retention rate	
Name of intervention	Career Academies
Organisation	Career Academy Support Network, Graduate School of Education, University of California at Berkeley, Berkeley, CA.
Brief literature review	This intervention seek to re-engage students at risk of dropping out by providing more applied learning experiences and promoting higher goals for further education and employment (Kemple and Willner, 2008). Career Academies have three core elements: small learning communities within schools to create a supportive learning environment; combining academic and technical courses around a career theme (e.g. health care, finance, technology, communications and government) to enrich learning; and establishing partnerships with local employers to provide work based learning and awareness (Kemple and Willner, 2008). Career Academies come from a range of educational backgrounds.
How and why does this intervention work?	<p>Career Academies have been implemented in approximately 2500 high schools in the United States and they have been evaluated by the MDRC group since 1993, producing eight major reports using a random assignment research design (Kemple and Willner, 2008).</p> <p>For students at high risk of dropping out, Career Academies increased school attendance, improved school progression to Year 12 and obtained more credit points toward graduation. In the most recent study, 1428 students (41% were males, 50% Hispanic background, 30% African American background), across nine high schools were followed up eight years after Years 11 and 12. Those who were assigned to Career Academies, and those who wanted to attend but were not accepted by a lottery system (i.e. random selection) had no major differences in school completion and post secondary education or school attainment, though both groups were higher than the national average. These non-significant findings also applied when students at high risk of drop-out (approximately 25% of the total sample) were examined. The major finding of this study was improved employment outcomes (including earnings and time in employment) for Career Academy members, especially for young men. This significant finding also applied to students who were at high risk of drop-out.</p>
On what population does this intervention work best?	The intervention works for schools catering for a diverse population and with students at risk of dropping out (Kemple and Willner, 2008).
Where will this intervention work best?	Career Academies have been evaluated in low income urban communities in the United States, containing large proportions of students from African-American and Hispanic backgrounds. Most of the research for this intervention has been conducted in the United States.
What is required to implement this intervention?	Supportive school and education systems in partnership, with local employers.
Resources and contact information	<p>Career Academy Support Network http://casn.berkeley.edu/</p> <p>National Career Academy Coalition http://www.ncacinc.com/</p>
References	<p>Kemple and Snipes (2000) Kemple and Willner (2008) What Works Clearinghouse (2006b)</p>

Recommended strategy 19.3: Year 10-12 apparent retention rate	
Name of intervention	The Maryland's Tomorrow Program
Organisation	Maryland State Department of Education
Brief literature review	The 'Maryland's Tomorrow Program', (known as the 'FUTURES Program' in Baltimore City) is a state wide program operating in 75 high schools across Maryland. The program aims to increase the rate of successful high school completion by enrolling 9th grade students identified as being 'at risk' of not completing school in a five year comprehensive program comprising five components: 'basic skills enhancement', 'work experience', 'motivation and leadership development', 'student support' and 'transition services'. Students participate in the program from the summer prior to entering high school to the year following high school graduation. Each student is assigned an 'advocate' for the duration of their time in the program whose role it is to encourage attendance, assist with problem resolution and explore personal goals.
How and why does this intervention work?	<p>The Maryland's Tomorrow Program was evaluated for ninth graders in the 1988/89 and 1989/90 cohort years with a comparison group consisting of students who were eligible for the program but that did not receive it. The drop-out rate for participants was about half that of non-participants. An evaluation of the FUTURES Program in 1999/2000 reported a 5.12% drop-out rate compared with the total Baltimore City Public School System drop-out rate of 8.14%.</p> <p>An evaluation by the Institute for Policy Studies, Johns Hopkins University tracked students throughout high school from the largest 27 schools from the 88/89, 89/90 and 90/91 cohorts and compared academic achievement and dropout outcomes with a comparison group of students from within the same schools. The evaluation showed program participants had higher graduation rates and lower dropout rates in more than half of the 27 schools.</p>
On what population does this intervention work best?	The program is aimed at high school students 'at risk' of not completing of high school. Students are eligible for the program if they meet criteria based on mathematics and reading skill levels, previous grade retention and attendance rates. FUTURES Program participants are typically 41% caucasian, 54% African American and 4% other and are 58% male and 42% female.
Where will this intervention work best?	The Maryland's Tomorrow Programs is a State wide program that can be effective for any student groups at risk of not completing high school.
What is required to implement this intervention?	The program is most effective when it involves a collaborative effort between the education and employment sectors and local business communities.
Resources and contact information	<p>Location - Baltimore County Public Schools: http://www.bcps.org/offices/alted/mtp/</p> <p>Further information on this program can be found at: http://www.ncwd-youth.info/node/342</p>
References	Lever, et al. (2004)

Recommended strategy 19.4: Year 10-12 apparent retention rate	
Name of intervention	STAIRS, Case Management Program
Organisation	ACT Full Services School Unit
Brief literature review	This intervention has operated on a small scale in the Australian Capital Territory (ACT) since 1999. It comprises an intensive case management service aimed at improving school completion rates for at risk 15 – 18 year olds. Since commencing, the Program has provided case management for over 200 young people. A particular strength of the program is its ability to offer a detailed knowledge of available educational options to individuals. Where individuals do not complete high school, program staff may provide ongoing case management and support services. Enrolment into the program occurs through referral from individual schools or by word of mouth.
How and why does this intervention work?	The principle objective of the program is to assist at risk students through integration into mainstream schooling structures. Services are provided on an informal basis and are provided in a flexible manner. No formal evaluation of the intervention has been identified. This program is considered to represent promising practice that will require ongoing development and formal evaluation over time.
On what population does this intervention work best?	The program is aimed at 15 - 18 year olds at risk of not completing high school. The intervention also aims to assist agencies, schools and families in supporting the needs of young people.
Where will this intervention work best?	The intervention works best in supportive schools and communities for students at risk of not completing high school.
What is required to implement this intervention?	A supportive school environment.
Resources and contact information	Reference: http://www.dest.gov.au/NR/rdonlyres/BEB5F5FB-11FC-4390-86ED-6714EC682E62/1533/bestpractice.pdf
References	Strategic Partners in association with the Centre for Youth Affairs and Development (2001)

3.6 Teen pregnancy rate

For this update, the literature search re-examined outlined in the first version of this narrative review. An additional focus was on new citations based on the previously identified review articles and recommended and named interventions. Searching of relevant databases was conducted using the search term 'pregnancy' (limited by publication years = 2008 to present, and age group).

3.6.1 Background

Nationally, teenage mothers account for 4.8% of all births (Jordan, et al. circa 2005). Victoria has the lowest proportion of teenage births of all Australian states, at 3.1%, although this varies across the state and is as high as 6% in some rural areas and up to 22% among Indigenous women (Jordan, et al. circa 2005).

The fertility rate of Australian teenagers is relatively high: this country ranked 16th among 24 OECD countries on UNICEF's teenage birth 'league table'. With a birth rate of 18.0 per 1000 women aged 15 to 19, Australia was similar to Canada, Greece, and Poland, but considerably lower than the United States (which has the highest teen birth rate in the developed world, at 46.0/1000), the United Kingdom and New Zealand (UNICEF, 2007).

It is difficult to estimate teenage pregnancy rates in Australia as there is no requirement for mandatory reporting of abortion nationally or in any state, with the exception of South Australia. In 2008, 885 South Australian teenagers (aged 19 years or younger) gave birth, and a further 964 had abortions (Chan, et al. 2009). These data indicate that teen pregnancy rates could be at least twice birth rates. This is supported by estimates derived from Australian Institute of Health and Welfare data, which suggest that Australia's rate of teenage pregnancy is around 36.2/1000 women aged 15-19 years (Shine SA, 2010).

A series of national surveys of secondary students in Australia show that adolescents are becoming sexually active earlier, and there are high rates of risky behaviour (Smith, et al. 2003; Agius, et al. 2006). In 2002, a quarter of Year 10 students and more than half of the Year 12 students surveyed had had sex. Of these sexually active adolescents, only 65.8% of Year 10s reported that they always used a condom, and this fell to 51.8% in Year 12, although the older group may be using the contraceptive pill at higher rates. Six percent of the sample reported having been pregnant (Smith, et al. 2003).

Early motherhood is associated with considerable disadvantage, both for the young woman and her child, increasing her risk of poverty, poor physical and mental health, exposure to domestic violence, crime and substance abuse, low educational attainment and social exclusion (Jordan, et al. circa 2005). Children of teenage mothers are more likely to grow up without fathers, to be the victims of abuse or neglect, and eventually to become teenage parents themselves (UNICEF, 2001).

Reducing teenage births offers an opportunity to reduce the likelihood of poverty, and of its perpetuation from one generation to the next (UNICEF, 2001, p. 2).

3.6.2 The evidence base

Policy approaches to reducing teenage pregnancy vary widely, depending on the prevailing value system (UNICEF, 2001). Much prevention and evaluation research in this area has been conducted in the United States, where policy is dominated by a religious viewpoint that sex and childbearing before marriage are primarily moral issues. This means that many of the school-based programs developed in that country emphasise abstinence from premarital sex rather than providing comprehensive information about sexuality and sexual health. The evidence for the effectiveness of such programs is mixed. A number of reviews have concluded that 'abstinence-only' interventions are, on the whole, ineffective (Kirby and Laris, 2009; Underhill, et al. 2009a; Santelli, et al. 2006; Trenholm, et al. 2008; US Government Accountability Office, 2008; but see

also Manlove, et al. 2004), whereas some positive outcomes have been found for ‘abstinence-plus’ interventions (Underhill, et al. 2009b). In any case, such interventions are inconsistent with Australian social policy which approaches the problem from the perspective of improving health and reducing disadvantage. In Victoria, the purpose of universal school-based sexuality education is to:

build on knowledge, skills, and behaviours, thus enabling young people to make responsible and safe choices (DEECD, 2007).

In one large national study in the US, adolescents who received comprehensive sex education in school were significantly less likely to report teen pregnancy and marginally less likely to have had sex than those who had received no formal sex education, while abstinence-only education had no effect on either measure (Kohler, et al. 2008). Overall, however, the evidence for sex education in schools is mixed: some reviewers have concluded it has no effect on age of initiating sexual intercourse, teen pregnancy or use of birth control (DiCenso, et al. 2002; Sabia, 2006). Other reviewers (Oringanje, et al. 2009; McKay, et al. 2001; Kirby, 2002a, 2002b; Manlove, et al. 2004; Bennett and Assefi, 2005) have identified effective programs, some of which are described below.

School-based programs that provide knowledge and seek to change attitudes and behaviour are, however, only part of the solution (Jordan, et al. circa 2005). Teen pregnancy rates are strongly linked to inequality in society and those most at risk are adolescents who dislike school, underachieve and have low life expectations (Fergusson and Woodward, 2000; Bonnell, et al. 2003; Harden, et al. 2006; Fletcher, et al. 2008). Broad-based, multi-component youth development programs are designed to address these social determinants of teenage pregnancy along with a host of common risk and protective factors for other problem behaviours and outcomes among young people. Such programs are well supported by evidence (Kirby, 2002b; Harden, et al. 2006) but can be expensive and difficult to replicate (e.g. Wiggins, et al. 2008).

The influence of parents on adolescents’ behaviour has been acknowledged in the design of another group of interventions (Aspy, et al. 2007; Sieverding, et al. 2005; Meschke, et al. 2002). These approaches focus on improving communication and strengthening family relationships. Some promising strategies are emerging, but many of these studies do not include measures of safe sex behaviour, contraceptive use or pregnancy outcomes.

Another approach that would appear to be relevant and potentially cost-effective is individual counselling in a primary health care setting (e.g. see Danielson, et al. 1990, below). There is, however, a lack of studies providing high-quality evidence in this area (Moos, et al. 2003).

It should be noted that there is some difficulty in recommending specific interventions in this area. As stated by Oringanje, et al. (2009), results from their recent Cochrane review “suggest that the concurrent use of interventions such as education, skill-building and contraception promotion reduces the risk of unintended pregnancy in adolescents but offers little evidence about the effect of each of these interventions offered alone. Overall, the evidence remains inconclusive, and could not be the basis for recommending the use or discontinuation of any of these interventions where they are already in use” (Oringanje, et al. 2009, p. 17).

3.6.3 Selection of interventions

There is an abundance of school-based sex education programs that aim to prevent teenage pregnancy. An expert review panel for the Program Archive on Sexuality, Health and Adolescence identified 56 programs they classified as ‘effective’ (Card, et al. 2007). Our review narrowed the field by focusing on studies with strong research designs and reported longer-term outcomes for teenage pregnancy or contraceptive use.

Safer Choices is a well-documented school-based sex education program that incorporates information on AIDS/STD prevention information, parent involvement and links with community health services. Although it is an American program, it takes a harm minimisation approach. The program is taught in 20, 45-minute lessons delivered in two blocks or levels: 10 in the first year,

and 10 in the following year, starting in 9th grade (US). Staff training events are held in preparation. A randomised, controlled trial demonstrated that the program had statistically and clinically significant effects on students' contraceptive use and safe sex practices 31 months after baseline (Basen-Engquist, et al. 2001; Coyle, et al. 2001, 2006).

The SHARE program was piloted with more than 14,000 adolescents aged 11-15 years in 15 secondary schools in South Australia over three years from 2003. Like Safer Choices, SHARE has broader aims beyond teenage pregnancy prevention, namely promoting the sexual health, safety and wellbeing of young people. This 'whole-school' program supports positive changes to the school ethos and involves parents and the community. The curriculum involves 15 one-hour lessons delivered to students in years 8, 9 and 10 (ages 11-15) by teachers who receive specific training (Shine SA, circa 2006). It was developed by Shine SA, based on extensive consultation, research and a review of the literature on effective comprehensive sex education in schools (Dyson, et al. 2003).

The pilot program was independently evaluated (Dyson and Fox, 2006), although this did not include behavioural outcome measures. A qualitative evaluation examined course content and implementation and concluded that the SHARE program was

an exemplary model of a comprehensive sexual health and relationships program. It is a thoroughly researched, theoretically rigorous, comprehensive and 'usable' set of materials and guides (Johnson, 2006, p. 33).

This program has been included in the catalogue as a promising strategy that is particularly relevant to the Australian context. In order for it to be disseminated and used more widely, further evaluation (preferably measuring outcomes such as contraceptive use) is strongly recommended.

The Teen Outreach Program uses a 'service learning' approach to enhance teenagers' social development and connections with school and the community. This school-based program incorporates a minimum of 20 hours' community service activities annually, supervised by trained staff. Weekly classroom discussions are wide-ranging, and sexuality education forms only a small part of the curriculum. Instead, classroom sessions are designed to maximise the learning opportunities from the volunteer experiences and address participants' social and personal development needs. This intervention significantly reduced pregnancy rates among participants (4.2%) compared with a control group (9.8%), after controlling for demographic factors and other existing differences between the groups. The program also had large positive impacts on school failure and suspension (Allen et al. 1997). Results from another study give further support for the overall efficacy of the Teen Outreach program, and indicate that "the program appeared most effective for those students at greatest initial risk of the problem behaviors being targeted" (Allen and Philliber, 2001, p. 637).

Another 'service learning' program that has also been well evaluated is Reach For Health (O'Donnell, et al. 1999, 2002). Two years after the program, participants were less likely than controls to report sexual initiation and recent sex. Contraceptive use and pregnancy outcomes were not reported. Other service learning and youth development programs recommended by reviewers include the Seattle Social Development Project and Quantum Opportunities Program (see Harden, et al. 2006, for a summary).

The strategy with the strongest evidence in terms of demonstrated reductions in teen pregnancy rates is the Children's Aid Society (CAS) Carrera Program (Philliber, et al. 2001; Philliber, et al. 2002). CAS-Carrera is an intensive and sustained intervention for at-risk youth aged 13-15 years. It runs 5-6 times per week over three years as an after-school program and incorporates seven activities, one of which is family life and sex education. The goal is to develop genuine, long-term relationships with program staff, treat participants as if they have potential and provide tailored, integrated health, educational and social services to them and their families. A randomised, controlled trial at 12 sites in seven American cities found that after three years in the program, female participants had less than half the risk of teenage pregnancy than girls in the control group

(Philliber, et al. 2001). They were more than twice as likely as controls to have used a condom and a hormonal contraceptive method at last intercourse (Philliber, et al. 2002).

A recent replication of this model in the United Kingdom did not achieve positive results, however. The Young People's Development Programme was holistic and intensive, and included education (literacy, numeracy, IT and vocational skills), training and employment opportunities, life skills, mentoring, volunteering, health education, arts, sports and advice on access to services. Young women who took part had poorer outcomes than controls relating to teen pregnancy, truancy and school exclusion, expectation of teen parenthood and sexual activity (Wiggins, et al. 2008). The evaluators recommended that youth development programs may be better offered separately to females and males. Also, it is important to ensure that the program does not bring participants into contact with 'a more risky group of friends' (Wiggins, et al. 2008, p. vi). They offered suggestions on how this could be avoided: work with different age groups, or with broad groups defined by general social disadvantage (as CAS-Carrera does) rather than defined by specific risks, or work with pre-existing friendship groups.

A very different, yet effective, approach was taken in an innovative study of reproductive health counselling for young men (Danielson, et al. 1990). This strategy was designed to increase knowledge, provide personalised, directive advice, reduce coercive behaviours (which have been shown to influence early initiation of intercourse and unprotected sex) and make participants more comfortable in discussing sexual and contraceptive topics with their partners.

The counselling intervention was provided individually to almost 1200 adolescent males aged 15-18 years, during a one-hour medical appointment at the participant's usual medical clinic. Each participant sat alone in a private room to view a half-hour audiovisual presentation, which included explicit photographs and information on reproductive anatomy, fertility, hernia, testicular self-examination, STDs, contraception, couple communication and access to health services. This was followed by a consultation focusing on contraception and guided by the participant's own interests and questions. Those who received the consultation were more likely than controls to report that their last sexual intercourse was protected by the pill and that their main method of contraception in the previous year was the pill. Effects were strongest among those not sexually active at the time of the baseline survey (Danielson, et al. 1990). A similarly personalised, primary care-based approach for teenage girls at 'high risk' of pregnancy succeeded in persuading many participants to use contraception and postpone motherhood for six months or more (Cowley, et al. 2002).

3.6.4 Discussion

A 'whole-school approach' to sexuality education has been advocated by recent Australian reviewers (Dyson, et al. 2003; Jordan, et al. circa 2005; Dyson, et al., 2008). This is defined (Mitchell, et al. 2000, cited in Dyson, et al. 2008) as going beyond a formal curriculum to include consultation and interaction with parents and the school community, access to community resources, student involvement and changes to school policy and guidelines. There is evidence that this approach has been implemented internationally, although there appear to be no formal evaluations (Dyson, et al. 2008).

Nevertheless, a whole-school approach harmonises with recommendations by reviewers who have identified elements of successful prevention programs (e.g. Gourlay, 1996 and Ollis, 1996, both cited in Dyson, et al. 2003; Kirby, 2001, cited in Manlove, et al. 2004). Below is a summary of the key factors (for a full list, see Dyson, et al. 2003):

- Acknowledging young people as sexual beings
- Addressing and catering for diversity
- Using developmentally based curricula that are appropriate and inclusive
- Identifying and addressing educators' training needs
- Involving parents and communities

In their review of sexual risk-reduction interventions for adolescents, Robin and colleagues (2004) noted that successful programs focused on building specific skills that reduced particular risk behaviours. Broad, multi-component youth development strategies also have much to offer, however. In particular, programs that build life expectations and connection with school have the potential to reach those most at risk of teenage parenthood (Fletcher, et al. 2008).

Many studies have demonstrated that sex education in schools does not, as feared by some conservative elements in society, lead to increased sexual behaviour among high school students (Kirby, 2002b). However, these attitudes represent a potential barrier to successful implementation of evidence-based programs (see Johnson, 2006, for an Australian example).

Finally, it should be noted that another indicator included in this Catalogue of Evidence (Age of initiation of sexual intercourse in young people) is of relevance to this topic area.

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Table 9 *Teenage pregnancy rates: recommended strategies*

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(20.1) Reproductive health counselling for young men	1	No	No	Yes	UNIVERSAL
(20.2) Teen Outreach Program (TOP)	1	Yes	Yes	Yes	UNIVERSAL
(20.3) Children's Aid Society Carrera Program (CAS-Carrera)	1	Yes	Yes	Yes	LOW SES CALD
(20.4) Sexual Health and Relationships Education (SHARE)	4	No	Yes	Yes	UNIVERSAL
(20.5) Safer Choices	1	Yes	Yes	Yes	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 (e.g., pre and post-testing, post-testing only, or qualitative methods) or historical comparison group (e.g., normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (e.g., 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 (e.g. 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 trialled with people in disadvantaged communities, Indigenous people and/or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

3.6.6 Updated catalogue entries

Recommended strategy 20.1: Teenage pregnancy rate	
Name of intervention	Reproductive health counselling for young men
Organisation	Kaiser Permanente Center for Health Research, Oregon
Brief literature review	Interviewing / counselling was delivered individually in a health setting, combining a personal health consultation with a half-hour audiovisual presentation. Adolescent males aged 15-18 years were recruited through a Health Maintenance Organisation, with parental permission. The intervention took place during a one-hour medical appointment at the participant's usual medical clinic. The practitioner provided a brief introduction, then left the participant alone in a private room to view the half-hour audiovisual presentation, which included explicit photographs and information on reproductive anatomy, fertility, hernia, testicular self-examination, STDs, contraception, couple communication and access to health services. This was followed by a consultation focusing on contraception and guided by the participant's own interests and questions, with the goal of increasing the participant's comfort level regarding discussion of sexual and contraceptive topics.
How and why does this intervention work?	The evaluation used a randomised, controlled design with 12-month follow-up. The intervention reduced 'sexual impatience' among participants (this was a composite measure of dissatisfaction with being a virgin, which was found to be strongly related to intentions to have unprotected sex). Those who received the consultation were more likely than controls to report that their last sexual intercourse was protected by the pill and that their main method of contraception in the previous year was the pill. Participants also had better knowledge of fertility and prevention of STDs and were more likely to practise testicular self-examination.
On what population does this intervention work best?	This was a universal intervention targeting male adolescents aged 15-18 years. The trial population consisted of 1195 young men in three US states. The intervention worked best with those who were not sexually active at the time of the baseline survey.
Where will this intervention work best?	Primary health care setting such as a community health centre.
What is required to implement this intervention?	The intervention was delivered by nurse practitioners, nurses or physicians' assistants who had received specific training. It requires a culturally appropriate audiovisual presentation (this intervention adapted materials from two programs made by the University of Minnesota, "Young Men's Reproductive Health" and "Young Men's Sexual Responsibility") and computer or DVD on which to play it in a private setting.
Resources and contact information	Contact details provided in the journal article are no longer current (see http://www.kpchr.org/public/default.aspx). However, the methods are described in full in the article referenced below.
References	Danielson, et al. (1990)

Recommended strategy 20.2: Teenage pregnancy rate	
Name of intervention	Teen Outreach Program (TOP)
Organisation	The Wyman Center, Missouri
Brief literature review	TOP is a school-based service learning program incorporating community service and classroom instruction, which does not focus specifically on sexuality education but addresses more general developmental needs of participants. The program is designed to involve adolescents in volunteer activities supervised by trained staff and often working with staff and volunteers of local community organisations such as hospitals or nursing homes. Activities may include working as a nursing aide or peer tutoring. A minimum of 20 hours' volunteer experience is provided over a year, although participants in the trial actually received 45 hours on average. Weekly classroom discussions also take place, with the aim of maximising the learning opportunities from the volunteer experiences. Material specifically about sexuality forms only a small part of the curriculum. Instead, the program aims to give adolescents a forum in which thoughts and feelings can be safely discussed and they can understand and evaluate their future life options. The structured community service provides an opportunity to establish skills and autonomy and to be viewed in a positive role.
How and why does this intervention work?	Evaluation design was a randomised controlled trial with outcomes measured after 12 months. Rates of pregnancy were significantly lower in the intervention group (4.2%) than the control group (9.8%) at follow-up, after controlling for demographic factors and other existing differences between the groups. The program also had large positive impacts on school failure and suspension. Costs of the program were estimated (in 1997) at US\$500-US\$700 per student when delivered to classes of 18-25 students, including costs for a facilitator and site co-ordinator.
On what population does this intervention work best?	TOP can be run as a universal youth development strategy or as a more targeted intervention (see below). It is designed for young people aged 12-17 years. The trial population consisted of 695 high school students (342 intervention and 353 control group) at 25 randomly chosen sites in the US.
Where will this intervention work best?	The program is designed for high schools and can be implemented in various ways: during class time, either as an elective or integrated with core subjects; as an after-school voluntary program; or as a component of enrichment programs such as social clubs, recreation, mentoring and tutoring initiatives, or other after-school activities.
What is required to implement this intervention?	In the US, facilitators attend a 2 ½ day training course before delivering TOP. Curriculum materials are available commercially and include a guide to evaluating TOP. The program's publisher offers technical support in setting up and running the program.
Resources and contact information	Wyman Teen Outreach Program 600 Kiwanis Drive, Eureka, Missouri 63025, USA. Email: info@wymanTOP.org Website: http://www.wymancenter.org/wyman_top.php
References	Allen, et al. (1997) Allen and Philliber (2001)

Recommended strategy 20.3: Teenage pregnancy rate

Name of intervention	Children's Aid Society Carrera Program (CAS-Carrera)
Organisation	Children's Aid Society, United States
Brief literature review	This is a long-term intensive holistic program incorporating: family life and sex education; individual academic assessment and tutoring; a work-related intervention; artistic and sporting activities; mental health care; comprehensive health care. Young people join the program in early teens (13-15 years). CAS-Carrera is run as an after-school program five days a week during the school year and there are occasional meetings, trips and help with employment during holidays. Services are tailored and integrated. Program staff build relationships with the participating youth and their families.
How and why does this intervention work?	A randomised, controlled trial at 12 sites in seven American cities found that after three years in the program, female participants had less than half the risk of teenage pregnancy than girls in the control group (Philliber, et al. 2001). They were more than twice as likely as controls to have used a condom and a hormonal contraceptive method at last intercourse (Philliber, et al. 2002). In addition, young people in the program were more likely to have work experience and to receive medical care. There were no significant program impacts on males' sexual behaviour outcomes and young men most at risk – those who had initiated sexual intercourse before enrolment – were least likely to attend regularly.
On what population does this intervention work best?	CAS-Carrera targets adolescents at risk of teenage pregnancy and other poor health and social outcomes (although organisers refer to them as 'at promise'). The trial population was about 600 adolescents attending six agencies in New York City, plus 100 young people at each of six other sites in different US cities. Most were from minority ethnic groups and all were socially disadvantaged, with about half from single-parent homes and high rates of substance use, illness, parental incarceration and domestic violence in their families. About half lived in families with no working adult and/or reliant on public assistance.
Where will this intervention work best?	The original program was run through youth agencies, boys and girls clubs and multi-service agencies. Participants were recruited through schools, letterbox fliers, contacting families already on agency lists and recruiting teens involved in youth activities at the participating agencies.
What is required to implement this intervention?	Part-time staff are required to run the program activities, with a full-time coordinator and a full-time community organiser who handles logistics and maintains continuous contact with participants and their families. This person needs to have good rapport with community members. The program requires coordination with health and mental health services.
Resources and contact information	Children's Aid Society http://www.childrensaidsociety.org
References	Philliber, et al. (2001) Philliber, et al. (2002)

Recommended strategy 20.4: Teenage pregnancy rate	
Name of intervention	Sexual Health and Relationships Education (SHARE)
Organisation	SHine SA
Brief literature review	SHARE is not specifically a teen pregnancy prevention program but has broader aims for high school students, their parents and families, teachers and the school environment or ethos. Its goal was to improve the sexual health, safety and wellbeing of young people. The curriculum involved 15 one-hour lessons delivered to students in years 8, 9 and 10 (ages 11-15). Parent information evenings were held in schools, and student health and wellbeing teams set up including representatives from parents, teachers, students and local community agencies.
How and why does this intervention work?	The SHARE model was based on extensive consultation, research and review of the literature on effective comprehensive sex education in schools. Two independent evaluations were conducted of the pilot program (2003-2005). Dyson and Fox (2006) surveyed students in three SHARE and three control schools in 2003 and 2005. Due to very small numbers of completed surveys from control schools, these data were not used. Instead the evaluators compared student responses in 2003, before the SHARE program, to responses from a (different) group of students who had received two or three years' SHARE training. After the program, students had improved understanding of safe sex behaviours but there was no change in their confidence about talking to prospective partners about using condoms or obtaining condoms (these were at high levels before and after). Impacts on safe-sex behaviours were not measured. A qualitative evaluation by Johnson (2006) examined course content and implementation but not behavioural outcomes for young people. This study concluded that the SHARE program was "an exemplary model of a comprehensive sexual health and relationships program. It is a thoroughly researched, theoretically rigorous, comprehensive and 'usable' set of materials and guides ..." (p. 33).
On what population does this intervention work best?	This is a universal program for high school students. It is particularly relevant to the Australian context. The trial population consisted of more than 14,000 adolescents aged 11-15 years in 15 metropolitan and regional secondary schools in South Australia.
Where will this intervention work best?	High schools.
What is required to implement this intervention?	Teachers who delivered the SHARE curriculum received 15 hours of training. Program coordinators from SHine SA provided support to participating schools. Materials include a teacher activity manual, and parent and student booklets.
Resources and contact information	General enquiries Tel: (08) 8300 5300 Email: info@shinesa.org.au http://www.shinesa.org.au
References	Dyson and Fox (2006) Johnson (2006) Shine SA (circa 2006)

Recommended strategy 20.5: Teenage pregnancy rate	
Name of intervention	Safer Choices
Organisation	ETR Associates, California.
Brief literature review	Safer Choices consists of school-based sex education with AIDS/STD prevention information plus parent involvement and community health links. Although American in origin, this is not an abstinence-only program. It is taught in 20, 45-minute lessons delivered in two blocks or levels: 10 in the first year, and 10 in the following year, starting in 9th grade (US). Other components of the program are a School Health Promotion Council involving teachers, parents, students, administrators and community representatives; a peer team that hosts school-wide activities; parent education via newsletters, homework and parent events; and links between schools and community services.
How and why does this intervention work?	A randomised controlled trial was conducted with 31-month follow-up (79% retention rate). Sexually experienced students in intervention schools reported less intercourse without condoms in the past three months than those in control schools (ratio of 0.63) and fewer partners with whom they had unprotected sex (ratio 0.73). Intervention group students were 1.68 times more likely than comparison students to use condoms, and 1.76 times more likely to use an effective pregnancy prevention method such as the pill, pill plus condoms, or condoms alone. An economic evaluation found a return of US\$2.65 in medical and social cost savings for every dollar spent on the program (Wang et al., 2000).
On what population does this intervention work best?	This is a universal program for younger adolescents. The trial population was 3869 students attending 20 high schools in California and Texas.
Where will this intervention work best?	High schools
What is required to implement this intervention?	In the US, training events are held for teachers who will deliver Safer Choices. Program materials include curricula, workbooks, Peer Leader Training Guide, implementation manual and activity kit. They are available commercially (2008 cost is US\$179 for the whole program).
Resources and contact information	http://programservices.etr.org/index.cfm?fuseaction=projects.summary&ProjectID=13 Dr Karin Coyle ETR Associates Email: karinc@etr.org
References	Wang, et al. (2000) Basen-Engquist, et al. (2001) Coyle, et al. (2001) Coyle, et al. (2006)

4 Updated reviews and catalogue entries: child and adolescent indicators

4.1 Hospitalisation rate for asthma

New database searches were conducted for the asthma indicator using Scopus, which indexes journals included in MEDLINE, PsycINFO and CINAHL (among others). Search terms for used were: asthma AND child\$ AND intervention, limited to 2009-2010. Additional literature searches were also conducted using the same search terms on known practice literature web-sites. These sites included: the California Evidence-Based Clearinghouse for Child Welfare; the Promising Practices Network; Campbell Collaboration; Australian Council for Education Research; Australian Institute of Family Studies; and the Victorian Department of Department of Education and Early Childhood Development.

4.1.1 Background

Asthma is a chronic disease of the bronchial (the air passages leading to and from the lungs) that is characterised by recurrent attacks of breathlessness and wheezing. During an 'asthma attack', the lining of the bronchial tubes swell causing the airways to narrow and the flow of air to and from the lungs to decrease (WHO, 2008). Asthma is associated with poorer physical and mental health, sleep disturbances, reduced physical activity levels, school and work absenteeism and high rates of hospitalisations (Australian Bureau of Statistics, 2006; Poulos, et al. 2005).

The precise causes of asthma are unknown, but are likely to involve genetic factors combined with environmental exposure to inhaled substances and particles that provoke allergic reactions or irritate the airways. Other risk factors for asthma include age, sex, diet and lifestyle (e.g. smoking) (Australian Bureau of Statistics, 2006).

Asthma is a common health problem among Australian children. Approximately 10% of Australians report asthma as a long term health condition; asthma is particularly common in children aged 0 to 14 years (Australian Bureau of Statistics, 2006), and in Indigenous populations where the prevalence is 16%.

In 2004-2005 there were 37,461 hospitalisations for asthma, half of which were for children (Australian Bureau of Statistics, 2006; Watson, Turk and Rabe, 2007). Therefore, asthma hospitalisations represent a major problem in Australia, and also pose a considerable economic burden. Identifying effective and practical strategies for decreasing the rate of asthma hospitalisations will be important in minimising the impact of asthma and improving the health and wellbeing of Australian children.

4.1.2 The evidence base

A number of strategies and interventions that aim to reduce the hospitalisation rate for asthma in children have been developed and trialled. The majority of these strategies aim to reduce the hospitalisation rates for asthma by educating children and adults about asthma symptoms and effective management strategies.

Since asthma is so prevalent in children, schools have logically become targets in which to conduct asthma education interventions. The school setting plays an important role in the asthma health promotion spectrum that ranges from identifying students with asthma, supervising medication, managing cases and educating and teaching appropriate management skills to students, parents and school personnel (Bruzzeese, et al. 2009). Broadly speaking, strategies targeted at students tend to have a focus on self management of asthma whilst strategies targeted at school personnel and parents have a focus more on the general principles of asthma management.

The academic literature relating to asthma education targeted at school children is enormous. It reveals a plethora of strategies and interventions that have been developed and trialled. The majority of these strategies aim to reduce hospitalisation rates for asthma by educating children about asthma symptoms and effective management strategies. Most of the studies evaluating these programs have been evaluated using randomised controlled trials (RCTs) or quasi-experimental designs; hence the evidence supporting these strategies is strong. Furthermore, these strategies have been trialled in a number of diverse populations, including disadvantaged children, CALD populations and children from families with a low socioeconomic status (Williams, Marosszeky, et al. 2008).

The delivery method for most school-based programs is dominated by group workshops for the students with asthma, which reach the most children with the least effort. However, recent successful efforts have included computerized games, web-based programs, peer education, and the inclusion of 1-on-1 sessions to allow tailoring of educational messages (Bruzzese, Evans, et al. 2009).

As indicated, the majority of interventions that aim to tackle hospitalisation rates for children with asthma have been school-based. However, a great deal of research work has also been undertaken in the community. The current focus of asthma education in the community has moved away from the 'informer transfer' programmes towards approaches that promote self-management education. The concept of self management education is seen as balancing information and skills acquisition with problem solving skills, with the aim of controlling the effect of the disease on the patient's health status and function. The evidence suggests that this focus has been shown to improve several important asthma outcomes in children and adolescents including adherence, lung function and emergency department use (Shah, Roydhouse, et al. 2008).

Home based interventions are also reported in the literature. Many studies have shown that educating families in the home about asthma can offer additional benefits not seen with education outside the home (Bryant-Stephens, 2008). Home based interventions can include environmental education to reduce exposure to aeroallergens. Such interventions have been demonstrated to reduce inpatient hospitalisations and emergency department visits and to reduce some asthma symptoms (Bryan-Stevens, 2009).

The literature also highlights that despite an apparent overall improvement in asthma management there are continued disparities in outcomes for CALD, Indigenous and low-SES populations (Li and Guttman 2009). Although race, ethnicity, and SES are often closely linked they do not necessarily contribute the same risks for asthma prevalence, morbidity, and mortality. In view of this there is evidence to support culturally based interventions such as providing culturally competent environments and engaging in discussions on common beliefs and practices related to asthma (Li and Guttman, 2009).

4.1.3 Selection of interventions

A specific example of a school-based asthma education program developed for Australian children is 'Asthma Friendly Schools' (Henry, et al. 2006; Sawyer, et al. 2006). This is a national initiative targeted towards all primary and secondary school children to improve the health outcomes of children with asthma. The aim of this program is to involve the whole school community in the management of asthma by improving management strategies and increasing awareness. For example, the program provides education kits for staff, students and parents, asthma-specific first aid kits and information posters. The program also provides recommendations for minimising asthma triggers in the school environment.

Schools are encouraged to register with this program and are classed as 'Asthma Friendly' if they successfully increase asthma awareness and develop a safe, healthy and supportive school environment for students with asthma. In 2008, 84% of Australian schools were registered in the AFS program and 36% were recognised as Asthma Friendly.

The Asthma Friendly Schools Program has been comprehensively evaluated, however at the time of writing the results are not publically available.

The Community Asthma Prevention Program based in the Children's Hospital of Philadelphia offers free asthma education, home visits and training to school personnel and primary care providers. This comprehensive program has been delivered since 1997. The home visiting component of this program features trained individuals visiting the homes of children at risk of asthma. The purpose of these visits is to remove environmental triggers for asthma in the home by controlling pests, supplying hypoallergenic pillows and bedding. The program also has an education component, whereby children and their parents are educated on how to manage asthma. Evaluation results of the home visiting component of this program featuring 153 asthmatic children revealed a 47% reduction in hospital admissions over a two year period (Bryant-Stephens, 2008).

Community-based programs have also been developed to reduce asthma hospitalisations in under-privileged children who would not otherwise have access to primary health care. The Harlem Children's Zone Project in the US, is a specific example of a community-based program. This program involves a community health team comprised of community workers, nurses and physicians, providing medical, educational, environmental, social and legal services for eligible children. This program was trialled on 314 children with asthma over an 18 month period and reduced the proportion of ED and unscheduled physician visits from 35% to 8%.

Several studies have also examined the impact of physician education programs on asthma hospitalisations in children. For example, Clark, et al. (2008) examined a physician education program targeted towards increasing physician communication skills and asthma knowledge. The program consisted of two group seminars for physicians (approximately 2.5 hours each). At two-years follow up there was a significant reduction in inpatient admissions and ED presentations.

The Easy Breathing Program is a specific physician education program that aims to increase physician adherence to national guidelines for asthma treatment and management (US National Asthma Education and Prevention Program for Anti-Inflammatory Use) (Cloutier, et al. 2002, 2005, 2008). The program consists of seminars where physicians are provided with information on guidelines for treating and managing asthma as well as more effective ways to communicate with parents and their children. This program was trialled in a number of medical centres and practices in the US, and the outcomes were measured in 3748 children. The Easy Breathing Program increased the proportion of physicians adhering to asthma guidelines from 38% to 96%, and led to a 35% reduction in hospitalisations and a 27% reduction in ED visits.

Several other types of programs have also been trialled. For example, Ng, et al. (2006) examined the effect of a hospital-based education program on children who had been hospitalised following an asthma attack. Compared to baseline, this program led to a 44 – 47% reduction in subsequent hospitalisations. School clinics that provide primary health care for school-aged children on asthma hospitalisations have also been examined. These programs involve a mobile health centre regularly visiting schools to provide primary health care to school aged children. These programs have been effective in reduction of hospitalisations by up to 71% (Guo, et al. 2005; Liao, et al. 2006; Patel, et al. 2007), but are expensive compared to the interventions described above.

Finally, a Didgeridoo Playing Program piloted in the Northern Territory represents a unique intervention targeting the poor asthma outcomes for Indigenous Australians. As part of the program, Indigenous boys were taught how to play the didgeridoo whilst girls were given singing lessons over a 6 month period. Daily peak respiratory flow records were kept and participants had health checks before, during and after the study. Evaluation of the program revealed that there was a definite improvement in participants' respiratory function (Eley, 2010).

4.1.4 Discussion

The literature reviewed above indicates that a number of different types of interventions are effective in reducing asthma hospitalisations in children. The most effective interventions have

been those involving a strong education component, where the aim is to improve the awareness of children and their families about asthma in general and provide effective strategies for managing asthma.

Based on the evidence reviewed above, the following four interventions have been included in this catalogue:

- Asthma Friendly Schools
- Community Asthma Prevention Program
- The Easy Breathing Program
- Didgeridoo Playing Program

School-based interventions appear to be the most effective in reducing hospitalisations for asthma. Asthma Friendly Schools is an Australian Government initiative that aims to promote asthma education and reduce environmental triggers for asthma. Although the effect of this program on asthma hospitalisations has not yet been examined, similar school based interventions are effective. Furthermore, this program has the potential to have a large impact on asthma hospitalisations given that 84% of Australian schools are registered with this program.

The Community Asthma Prevention Program and the Easy Breathing Program are also included in this catalogue as there is solid evidence supporting the effectiveness of both strategies. The Didgeridoo Playing Program is also recommended as it represents a culturally appropriate program targeting Indigenous Australians for whom asthma prevalence is highest. Whilst there are no data to support a reduction in hospitalisation rates for asthma, the Didgeridoo Playing Program is included as it is innovative and the evaluation results to the pilot are encouraging.

Importantly, all of the interventions included in this catalogue are practical, have a relatively low cost and have been trialled on diverse populations including CALD, Indigenous and children from families with a low socioeconomic status.

4.1.5 References

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Table 10 Hospitalisation rates for asthma: recommended strategies

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(24.1) Asthma Friendly Schools	5	No	Yes	Yes	UNIVERSAL
(24.2) Community Asthma Prevention Program	3	Yes	Yes	Yes	LOW SES CALD
(24.3) The Easy Breathing Program	3	Yes	Yes	Yes	LOW SES CALD
(24.4) Didgeridoo Playing Program	5	No	Yes	Yes	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 (e.g., pre and post-testing, post-testing only, or qualitative methods) or historical comparison group (e.g., normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (e.g., 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 (e.g. 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 trialled with people in disadvantaged communities, Indigenous people and/or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

4.1.6 Updated catalogue entries

Recommended strategy 24.1: Hospitalisation rate for asthma	
Name of intervention	Asthma Friendly Schools
Organisation	Asthma Foundations of Australia
Brief literature review	This is a specific example of a school-based program that has been developed for Australian schools. The aim of this program is to involve the whole school community in the management of asthma by improving management strategies and increasing awareness. For example, the program provides education kits for staff, students and parents, asthma specific first aid kits and information posters. The program also provides recommendations for minimising asthma triggers in the school environment
How and why does this intervention work?	The effect of this program on asthma hospitalisations has not yet been examined. However, similar school based programs have been shown to be effective. Furthermore, given that 84% of Australian schools are registered with this program, there is potential for this program to have a considerable impact on asthma hospitalisations in Australia.
On what population does this intervention work best?	This program is targeted towards all primary and secondary school children in Australia. It is not yet clear whether this program is more effective in specific populations.
Where will this intervention work best?	At present, this is unclear.
What is required to implement this intervention?	A 'Principal Package', which includes information and resources, and teaching materials. This is available by contacting Asthma Friendly Schools via phone or email (see below).
Resources and contact information	Phone (03) 9326 7088 Email schools@asthma.org.au
References	http://asthmafriendlyschools.org.au/home/index.php Henry, et al. (2006); Sawyer (2006)

Recommended strategy 24.2: Hospitalisation rate for asthma	
Name of intervention	Community Asthma Prevention Program
Organisation	The Children's Hospital of Philadelphia
Brief literature review	Bryant-Stephens, et al. (2008) trialled a home-based program developed to reduce asthma hospitalisations. The program involved home-visits by trained individuals that educated children and their families on asthma symptoms and management strategies. The trained home visitors also aimed to reduce the amount of environmental triggers for asthma in the home by controlling pests, and supplying hypoallergenic pillows and bed sheets.
How and why does this intervention work?	The home visiting component of this program has been shown to be effective in reducing asthma hospitalisations by 43 – 47% over a two year period. The program is effective because it reduces environmental factors that cause or exacerbate asthma symptoms and also educates families on how to manage asthma.
On what population does this intervention work best?	This intervention has been shown to be effective in disadvantaged children in an urban setting.
Where will this intervention work best?	Communities where there is a higher incidence of asthma.
What is required to implement this intervention?	Trained home visitors, educational material, equipment and home supplies (e.g. hypoallergenic pillows and bedding).
Resources and contact information	Tyra Bryant-Stephens Email: stephenst@email.chop.edu
References	Bryant-Stephens, et al. (2008) http://www.chop.edu/service/community-asthma-prevention-program-capp/home.html

Recommended strategy 24.3: Hospitalisation rate for asthma	
Name of intervention	The Easy Breathing [®] Program.
Organisation	Connecticut Children's Medical Center.
Brief literature review	The Easy Breathing Program is a series of seminars for physicians that aim to increase physician adherence to national guidelines for asthma treatment and management (US National Asthma Education and Prevention Program for Anti-Inflammatory use). The seminars also aim to facilitate communication between the physician and patient.
How and why does this intervention work?	The Easy Breathing Program is effective in improving physician adherence to national guidelines on the use of medication to manage asthma and other effective strategies. The program also improves physician communication with the patient. As a consequence, the Easy Breathing Program has been shown to reduce asthma hospitalisations by 35% and ED presentations by 27%.
On what population does this intervention work best?	This program has been shown to be effective in reducing asthma hospitalisations in a range of populations including CALD children and those from low socio-economic backgrounds.
Where will this intervention work best?	Community and health care settings.
What is required to implement this intervention?	Trained staff to organise and deliver seminars.
Resources and contact information	Michelle M. Cloutier Professor of Pediatrics University of Connecticut Health Center Website: http://www.uchc.edu/ Email: mclouti@cmckids.org
References	Cloutier, et al. (2005) Cloutier, et al. (2008)

Recommended strategy 24.4: Hospitalisation rate for asthma	
Name of intervention	Didgeridoo Playing Program
Organisation	The Centre for Rural and Remote Area Health, University of Southern Queensland
Brief literature review	One-hour didgeridoo school-based lessons were held weekly for 26 weeks. Male students were each given a didgeridoo made by an Aboriginal craftsman. An Aboriginal didgeridoo player taught traditional didgeridoo sounds and melodies and the art of circular breathing. Females received an mp3 player containing backing tracks and voice exercises. All students received information about asthma and its management from Indigenous Health Workers and from culturally appropriate brochures, pamphlets and posters provided by the Asthma Foundation of Northern Territory.
How and why does this intervention work?	Wind instruments have long been advocated in the management of asthma. Participants in this program reported an improvement in their respiratory function. The students enjoyed the program and also recognised an improvement in their overall health. The socialising and cultural awareness aspects were also reported as being important benefits of the program.
On what population does this intervention work best?	Indigenous Australians, however similar culturally appropriate activities could have applications far beyond Indigenous communities in Australia.
Where will this intervention work best?	This is a school-based intervention.
What is required to implement this intervention?	Didgeridoo lessons require the skills of a trained professional. Indigenous Health Workers to provide education and culturally appropriate educational material are also required.
Resources and contact information	Dr Robert Eley The Centre for Rural and Remote Area Health The University of Southern Queensland West Street Toowoomba Qld 4350 Email: elry@usq.edu.au
References	http://www.healthinonet.ecu.edu.au/health-resources/programs-projects?pid=739 http://www.usq.edu.au/crrah/research/indigenous/indigenousasthma Eley and Gorman (2010)

4.2 Low birth weight

New database searches were conducted for the low birth weight indicator using Scopus, which indexes journals included in MEDLINE, PsycINFO and CINAHL (among others). Search terms used were: low birth weight or preterm AND program OR prevention OR service OR evaluation OR intervention limited to 2009-2010, evaluation OR trial. Additional literature searches were also conducted using the same search terms on known practice literature web-sites. These sites included: the California Evidence-Based Clearinghouse for Child Welfare; the Promising Practices Network; Campbell Collaboration; Australian Council for Education Research; Australian Institute of Family Studies; and the Victorian Department of Department of Education and Early Childhood Development.

4.2.1 Background

Birth weight is an indicator of the general health of infants and is a determinant of an infant's survival, health, development and wellbeing. It also has a long-term impact on health outcomes in adult life. Due to the wide ranging influence of low birth weight on a range of health outcomes for children, this indicator is widely used within suites of indicators of children's health.

The World Health Organization (WHO) defines low birth weight under the following categories:

- Low birth weight – infants weighing less than 2500 grams at birth;
- Very low birth weight – infants weighing less than 1500 grams at birth; and
- Extremely low birth weight – infants weighing less than 1000 grams at birth (Adams, 1990 cited in UNCF and WHO, 2004).

Low birth weight is either the result of a preterm birth (before 37 weeks gestation) or restricted fetal growth, which are independent indicators of antenatal health. Preterm birth is the main cause of death, morbidity and disability and the shorter the gestation, the smaller the baby and the higher the risk of adverse outcomes. Mortality can vary 100 fold across the range of birth weight and rises with decreasing weight (UNCF and WHO, 2004).

In Australia in 2005 6.4% of babies born had low birth weight (Laws, et al. 2007). In Indigenous populations, in 2004, the percentage of live born babies with low birth weight was more than double that of non-Indigenous populations (Laws, et al. 2006). In 2001-2004 the rate of increase in low birth weight babies was also greater among babies born to Indigenous mothers (from 11% to 12%) than for babies born to non-Indigenous mothers (from 2.5% to 2.6%) (AIHW: Leeds, et al. 2007). There is also evidence that the proportion of babies with less favourable outcomes, such as preterm and low birth weight, decreases with socioeconomic advantage (Laws, et al. 2007).

Low birth weight babies have a greater risk of long-term poor health and mortality and may require a longer period of hospitalisation after birth. They are also more likely to develop significant disabilities (Leeson, et al. 2001, Mick, et al. 2002). Low birth weight is associated with an increased risk of death in the first year of life and long-term disability and disease (Barker, 1994). Restricted fetal growth resulting in low birth weight is associated with poor growth in childhood and a higher incidence of some adult diseases such as Type 2 diabetes, hypertension and cardiovascular disease (UNCF and WHO, 2004). Very low birth weight has also been associated with poor school achievement which may persist into early adulthood (Hack, et al. 2002).

Risk factors associated with low birth weight include age of the mother, multiple pregnancies, low socio-economic status, maternal education, smoking and antenatal care (McCormick, 1985). In 2003, the proportion of live-born low birth weight babies of mothers who smoked was 10.6%, compared to mothers who did not smoke (5.1%) and the odds of preterm birth was 60% higher in babies of mothers who smoked than in babies of mothers who did not smoke (Laws, et al. 2006). Other factors contributing to low birth weight include size of parents, mother's nutritional status, alcohol intake, illness during pregnancy and domestic or other kinds of abuse during pregnancy (Horta, et al. 1997, Kramer and Kakuma, 2004, Murphy, et al. 2001).

Antenatal care and good nutrition, control of infections, and reduction of substance abuse during the antenatal period can positively influence birth weight.

4.2.2 The evidence base

A large number of programs and strategies have been developed to address the problems associated with low birth weight and preterm birth. There has been little success in addressing preterm birth as the risk factors are still not well understood. There is, however, good evidence for the kind of strategies and programs that reduce the rate of low birth weight babies.

A recent Cochrane review highlighted that there is little evidence on the effects of pre-pregnancy health promotion and much more research is needed in this area (Whitworth, 2009). There is a similar lack of evidence for clinic-based health promotion interventions aimed at pregnant women. For example, pregnant mothers who smoke provide clinicians with a potential opportunity to counsel them to quit smoking, and provide referrals for cessation services. However, given the relatively modest effectiveness of clinic-based health promotion interventions (Lumley, 2004) providers may feel ineffective in helping women quit and, therefore, may not be motivated to provide cessation counselling.

However, encouraging providers to refer women to evidence-based interventions, such as telephone-based counselling, may be a good alternative strategy to increase the use of such services among pregnant smokers (Tong, et al. 2008). In fact, a recent review of telephone support services for women during pregnancy and the early postpartum period found that they may assist in preventing smoking relapse, play a role in preventing low birth weight, increase breastfeeding duration and exclusivity, and decrease postpartum depressive symptomatology (Dennis and Kingston, 2008).

Maternal age, and in particular adolescence during pregnancy, is a risk factor for preterm and low birth weight. Specific attempts to improve pregnancy outcomes in pregnant adolescents may include public health early-intervention programs, school-based programs, a teenage clinic care model and a group care model (Moeller, et al. 2007).

A recent review of school-based health clinics (Strunk, 2008) found that they were effective in improving teenage pregnancy and parenting outcomes. In particular Strunk (2008) found evidence that supported the school-based clinic as a means of lowering the incidence of low birth weight babies born to teenage mothers (Barnet, et al. 2003; Meadows, et al. 2000; Raatikainen, 2005). Barnet and colleagues (2003) reported that school-based comprehensive care for pregnant adolescents was associated with significantly reduced odds of low birth weight. Screening and advice on consistent condom use may have played a role in improving birth outcomes by changing behaviours and subsequently reducing genital infections (Barnet, et al. 2003).

There is also good evidence for group care models that involve placing young mothers in a group with others with similar characteristics and similar stage in pregnancy for most of their prenatal care instead of in individual prenatal care appointments (Rising, et al. 1998 and 2004). Ickovics and colleagues (2003) found that babies of mothers in group care were heavier than those whose mothers were in individual prenatal care ($p < 0.01$) particularly those born preterm ($p < 0.05$). Baldwin and colleagues (2004) found that adolescents involved in group based prenatal care had a 50% lower rate of preterm and low birth weight birth than comparison groups. Compared to traditional prenatal care models for adolescents, group based prenatal care have also been shown to significantly improve knowledge about pregnancy and have higher rates of breastfeeding as well as meet the need for socialising and peer support (Baldwin, 2006, Grady and Bloom, 2004, Moeller, et al. 2007).

Family case management was developed to reduce barriers to prenatal care and infant healthcare utilisation for low-income women (Silva, et al. 2006). Family case management can benefit traditional prenatal care medical visits and can include care coordination, case management, risk assessment, nutritional counselling, health education, and home visiting. Evaluation of family case

management showed that it did reduce low birth weight deliveries, however, risk factors such as smoking, previous low birth weight delivery and socioeconomic disadvantage were still more important in reducing low birth weight than simply increasing time spent with a case manager or the number of home visits (Silva, et al. 2006).

Extensive evaluation of home visiting in the US (Olds, et al. 2004) reported that women who were home visited both prenatally and during the child's infancy had fewer low birth weight babies (2.8% vs 7.7%). The greatest benefit of the home visiting program was felt for women who had fewer psychological resources at registration (Olds, et al. 2004).

A review of home visiting for women with drug and alcohol problems (Doggett, et al. 2005) found there was insufficient evidence to say if the health of mother or baby was improved although there was evidence that home visiting increased the mother's engagement with drug treatment services. Donovan, et al. (2007) reported that intensive home visiting reduced the risk of infant death but did not have any effect on the rate of preterm birth. An Australian multi-component intervention delivered at home before and after birth did not find a beneficial outcome in relation to birth weight (Lumley and Donohue, 2006).

Programs involving dietary advice may only have a limited impact on low birth weight (Kramer and Kukuma, 2003). Ramakrishnan (2004) argues that strategies that focus on food intake may be expensive and difficult to manage. The balanced supplementation of protein and energy during pregnancy can provide improvements in low birth weight and promote equity in outcomes and benefits are greater for women who are undernourished (Kramer and Kukuma, 2003). There is also strong evidence for the effectiveness of iron supplements (Ramakrishnan, 2004). More recently though a trial by Gupta, et al. (2007) found that, compared with iron and folic acid supplementation, the administration of multi-micronutrients to undernourished pregnant women may reduce the incidence of low birth weight and early neonatal morbidity.

4.2.3 Selection of interventions

In 1989 the US Public Health Service Expert Panel on Prenatal Care published a report "Caring For Our Future: The Content of Prenatal Care" that encouraged the strengthening of the education content available to pregnant women and their families and established a policy platform for the development of improved prenatal programs such as CenteringPregnancy (Carlson and Lowe, 2006). CenteringPregnancy (CP) is a model of prenatal care that emphasises risk assessment, education, and support within a group setting. Created by a nurse midwife and encompassing a midwifery focus on women's health, the CenteringPregnancy program allows more than 20 hours of contact time throughout pregnancy and early postpartum. The CP program includes ten 90-minute group sessions that begin when mothers are 12-16 weeks pregnant and end with an early postpartum meeting. Women learn self-care skills, take part in a guided self-assessment process and participate in discussion groups on topics from a curriculum but with emphasis on subjects relevant to the group.

CP was developed and trialled in the United States. Initial evaluation of CP found that women in the CP group had less emergency room visits ($p=0.001$) and 96% of participants preferred the group setting for prenatal care (Rising, 1998). A later study found that women involved in a CP group, when compared to normal care, had fewer low birth weight births, although the difference was not statistically significant, and that of those women who had preterm births, babies of women in the CP program had a gestational age 2 weeks longer than those in normal care (34.8 weeks as opposed to 32.6 weeks, $p<0.001$; Ickovics, et al. 2003). In another trial of the program (Grady and Bloom, 2004) it was reported that the CP group had a lower rate of preterm delivery (10.5%) compared to control groups (25.7% and 23.8%), as well as a lower rate of LBW infants (8.9% vs 22.9% and 18.3%).

The University of Technology Sydney (UTS) piloted the CP program in the South Eastern Sydney and Illawarra Health Service between 2005 and 2008. A recent study into the experiences of midwives involved with the pilot revealed that it is an appropriate model of care for the Australian

midwifery context particularly if organisational support and recruitment strategies and access to appropriate facilities are addressed (Teate, 2010).

Nurse-Family Partnership® is an evidence-based, nurse home visiting program that improves the health, well-being and self-sufficiency of low-income, first-time parents and their children. Mothers who are at risk are first enrolled at 20 to 28 weeks into their first pregnancy. Nurse home visits are aimed at improving prenatal, maternal, and early childhood health and well-being. Nurses focus on therapeutic relationships with the family and improving family functioning in areas of health, home and neighbourhood environment, family and friend support, parental roles, and major life events. The program is provided from one to three years after the birth of the child according to need.

The NFP program is based on the work done by Professor David Olds and his colleagues over a thirty year period. The findings of the original trial of the project conducted in Elmira, New York, in 1977 were very encouraging and as a result further trials of the program were conducted in Memphis, Tennessee, in 1987 and in Denver, Colorado, in 1994. Trial results found that during pregnancy mothers registered in the program smoked less, had better nutrition, attended more classes and had more support (Olds, et al. 2004; Olds, et al. 2007). Improved birth outcomes were also reported for women who had participated in the program, including reductions in preterm and low birth weight newborns. Olds, et al. (2004) found that, two years after the program, women who were visited, compared with control subjects were less likely to have had subsequent miscarriages (6.6% vs 12.3%) and fewer low birth weight newborns (2.2% vs 7.7%). Olds, et al. (2007) also reported that in women who had been nurse-home visited there was a non-significant trend towards fewer subsequent low birth weight newborns (0.18 vs 0.27; incidence ratio (IR): 0.66; $p = 0.73$).

Olds, et al. (1997) reported that low-income, unmarried mothers from the original trial of the program in 1997, who were followed up over 15 years, had fewer subsequent pregnancies, less use of welfare, lower incidence of child abuse and neglect, and less criminal behaviour. Investment in the program was estimated to be recovered before the child turned four years old, however, benefits only exceeded costs where the mother was low income and unmarried (Olds, et al. 1997).

Results from these trials have been used to develop a highly structured program that has been shown to be both effective and cost effective. Washington State Institute for Public Policy conducted a cost effectiveness study in which they reported that there was a US\$2.88 return for every dollar spent with a net benefit of US\$17,180 per family served (Aos, et al. 2004). RAND Corporation also conducted a cost effectiveness study of the program and estimated that there was a US\$5.70 return for every dollar spent or a US\$34,148 net benefit for every family served (Karoly, et al. 2005).

The Mums & Babies program is operated by the Townsville Aboriginal and Islander Health Service (TAIHS). This program was established in 2000 in response to barriers experienced by Aboriginal and Islander women attempting to access mainstream child and maternal health care (Atkinson, 2001). A forum was held in 1999 with maternal and child health services from both the Indigenous and mainstream communities. Forum conclusions were that:

- A team approach was needed for Indigenous mothers and infants
- Existing services needed to be improved and better co-ordinated
- Transport and education needed to be improved (Atkinson, 2001).

Designed to increase the utilisation of antenatal services of indigenous women in the Townsville area of North Queensland, the service initially included a morning clinic for pregnant women and young mothers, staffed by two female doctors, two health workers, a child care worker and a driver.

Evaluation of the program is ongoing but the program had 40 clients per month when it opened in 2000 and this rose to 500 per month in 2001. The proportion of women having fewer than four antenatal visits (inadequate care) has fallen from 65% to 25% and the proportion of teenagers attending the clinic for care has increased from 15% to 20% (Eades, 2004). There has been a reduction in the number of low birth weight babies from 16% to 11.7 per cent; mean birth weights have increased by 170 grams; and perinatal deaths have fallen from 58 per thousand to 22 per thousand (ANTaR, accessed 13 November 08). Atkinson (2001) stated that prior to the introduction of the program the perinatal death per thousand for Aboriginal people prior to the program was 56.8, it is now 18.

Also worthy of mention is The Strong Women, Strong Babies, Strong Culture Program (SWSBSC). This is a comprehensive program established in the Northern Territory in 1992 aimed at increasing infant birth weights by earlier attendances to antenatal clinical and improved maternal weight status. It is a comprehensive program covering clinical management, health promotion, social support and cultural revival. 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, 2005). Further information can be found in the indicator, 'Increased attendance at maternal and child health', at <http://www.education.vic.gov.au/healthwellbeing/childyouth/catalogue/sections/mchservices-ind1.htm>.

The Illinois Family Case Management (IFCM) Program, a Medicaid program created in 1996, targets low-income women and reduces barriers to prenatal care and infant healthcare utilization. IFCM was a continuation of an earlier initiative called "Healthy Moms/Healthy Kids" that operated from 1993 to 1996. Keeton, et al. (2004) conducted a retrospective cohort study of the effects of the prenatal care component of the IFCM program. Results showed that women participating in the IFCM program were significantly less likely to give birth to low and very low birth weight babies (odds ratios: VLBW OR = 0.86 – 95% CI 0.75,0.99 ; LBW OR = 0.83 – 95% CI 0.79,0.89) (Keeton, et al. 2004).

Further evaluation indicated that mothers who had three face to face visits had fewer low birth weight babies compared to those who had one or two face to face visits (6.36% versus 8.19% and 7.69% respectively) and with each additional hour spent with a case manager the risk of low birth weight dropped by 11% (Silva, et al. 2006). However, the authors then used a model adjusted for possible bias and found there was no significant effect of increasing case management hours on reducing low birth weight. There were still strong independent effects of smoking, preterm birth, race and age on LBW deliveries. Overall there was a lower rate of low birth weight deliveries among IFCM clients compared to the overall 5-year (1998-2002) County average (7.4% vs 8.2%) (Silva, et al. 2006). The intervention successfully decreased the rate of LBW in a disadvantaged population, however, increasing face-to-face hours should not be undertaken without addressing program quality or individual clients' circumstances and risk factors.

4.2.4 Discussion

The interventions chosen for this indicator include programs for which there have been positive outcomes in relation to reducing the rate of low birth weight births. Although two of these programs, Nurse-Family Partnership and Illinois Family Case Management, are not specifically aimed at reducing low birth weight they effectively address protective and risk factors that impact on the rate of low birth weight births.

These programs address a wide range of social and individual factors to improve the circumstances of women at risk of giving birth to a low birth weight baby. The two other programs, CenteringPregnancy and Mums & Babies, were developed to increase access to and quality of prenatal care. The CenteringPregnancy represents a departure from traditional style prenatal care with good results for birth outcomes, particularly for teenage mothers. The Mums & Babies program is an example of a promising program for Aboriginal and Torres Strait Islander mothers that works by improving access to prenatal care for this often hard to reach population.

While all but the Mums & Babies program were developed in the US they were assessed as being applicable to the Australian context as they aim to improve risk factors evident in Australia in settings similar to those that currently exist in the Australian maternal and child health care context.

The search for programs that reduce the rate of low birth weight births was extensive but not exhaustive. The interventions chosen for this indicator have a range of evidence for their effectiveness, however, where possible, interventions that have been rigorously evaluated were chosen.

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Table 11 Low birth weight: recommended strategies

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(25.1) Centering Pregnancy	2	Yes	Yes	Yes	LOW SES CALD
(25.2) Nurse-Family Partnership Program	1	Yes	Yes	Yes	LOW SES CALD
(25.3) Illinois Family Case Management Program	2	Yes	Yes	Yes	LOW SES CALD
(25.4) Mums and Babies	4	No	No	Yes	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 (e.g., pre and post-testing, post-testing only, or qualitative methods) or historical comparison group (e.g., normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (e.g., 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 (e.g. 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 trialled with people in disadvantaged communities, Indigenous people and/or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

4.2.6 Updated catalogue entries

Recommended strategy 25.1: Low birth weight	
Name of intervention	CenteringPregnancy
Organisation	Centering Healthcare Institute (USA)
Brief literature review	The CenteringPregnancy (CP) program was trialled in the US where a number of outcomes in relation to reduced rates of low birth weight and preterm delivery were observed (Rising, 1998; Ickovics, et al. 2003; Grady, et al. 2004). University of Technology Sydney (UTS) is currently trialled the CP program in the South Eastern Sydney and Illawarra Health Service between 2005 and 2008.
How and why does this intervention work?	CenteringPregnancy is an innovative model of prenatal care that emphasizes risk assessment, education, and support within a group setting. Created by a nurse midwife and encompassing a midwifery focus on women's health, the CenteringPregnancy program allows more than 20 hours of contact time throughout pregnancy and early postpartum. The CP program includes ten 90-minute group sessions that begin when mothers are 12-16 weeks pregnant and end with an early postpartum meeting. Women learn self-care skills, take part in a guided self-assessment process and participate in discussion groups on topics from a curriculum but with emphasis on subjects relevant to the group.
On what population does this intervention work best?	The program was originally trialled with 111 ethnically diverse and socioeconomically disadvantaged women who ranged in aged from teens to 30s (Rising, 1998). Subsequent trials included a cohort of 453 women matched for race/ethnicity, age and parity (Ickovics, et al. 2003) as well as a trial with 124 adolescents who gave birth in 2003 after completing the program compared to teens from the same institute who gave birth in 2001 and 1998. These trials indicated that the program is effective for a broad range of participants including teenage girls and adult women, women and girls from diverse cultural backgrounds, women and girls affected by socioeconomic disadvantage and first time mothers as well as those who have previously given birth.
Where will this intervention work best?	This program will work best in a community health setting that provides prenatal care and has facilities for groups of up to 12 women.
What is required to implement this intervention?	Registration with the Centering Health Institute (CHI) must be gained before starting the CP program. All CP providers are required to attend an introduction and implementation workshop.
Resources and contact information	Contact Alison Teate to join CHI-Australia. Email: Alison.Teate-1@uts.edu.au Websites: http://www.centeringpregnancy.com/ http://www.nmh.uts.edu.au/cmcfh/research/centering_pregnancy.html
References	Moeller, et al. (2007); Carlson, et al. (2006); Grady, et al. (2004); Rising, et al. (2004); Rising (1998).

Recommended strategy 25.2: Low birth weight	
Name of intervention	Nurse-Family Partnership Program (formerly Elmira pre-natal and early infancy project)
Organisation	Nurse-Family Partnership
Brief literature review	The Nurse-Family Partnership Program is a pre and post natal home visiting program aimed at reducing child abuse and neglect but that has also shown positive prenatal outcomes, including reduction in low birth weight babies and preterm births. Originally trialled as the Elmira pre-natal and early infancy project in 1977 in Elmira, New York, the program has undergone rigorous and long term evaluation. Two subsequent large trials of the program were conducted in Memphis in 1987 and in Denver in 1994. During pregnancy program mothers smoked less, had better nutrition, attended more classes and had more support (Olds, et al. 2004; Olds, et al. 2007). Improved birth outcomes were also reported for women who had participated in the program, including reductions in preterm and low birth weight newborns (Olds, et al. 2004; Olds, et al. 2007). 15 year follow-up of program participants from the Elmira trial (Olds, et al. 1997) found that mothers had fewer subsequent pregnancies, use of welfare, reports of child abuse and neglect and criminal behaviour on the part of low-income, unmarried mothers. Cost effectiveness studies have also found that the program provides a net benefit to society in comparison to funds spent on the Program (Aos, et al. 2004; Karoly, et al. 2005).
How and why does this intervention work?	The program is aimed at low income, first time mothers and their children from the prenatal period (prior to 25 weeks gestation) to 2 years. Home visits by nurses focused on providing parent education, enhancing social support from family and friends and linking the family with outside support services. Visits were weekly during the first month of enrolment. Visits were then fortnightly until birth, when the visits were again weekly for the first six weeks of the baby's life. Between the child ages of 2 to 21 months, visits were twice a month and between ages 21 to 24 months, visits were once a month. Home visits lasted between 75 and 90 minutes.
On what population does this intervention work best?	The program was developed for and successfully trialled with first time mothers who were from ethnically diverse and socioeconomically disadvantaged backgrounds. Trials conducted with a combined number of 2274 women reported that the most positive effects were for women who had few psychological resources and who were single, low-income mothers (Olds, et al. 1997).
Where will this intervention work best?	This is a community-based intervention that is effective in both rural and urban settings.
What is required to implement this intervention?	The main requirement is for registered nurses and a nurse supervisor. Nurses must be trained in the delivery of the program. Costs are involved with training however the main costs are in employing nurses. The program stipulates there should be one nurse per 25 families and one nurse supervisor per four nurses.
Resources and contact information	Nurse-Family Partnership National Service Office: 1900 Grant Street, Suite 400, Denver, CO 80203 Direct phone: 303-327-4240, Fax: 303-327-4260 Email: info@nursefamilypartnership.org Website: http://www.nursefamilypartnership.org/index.cfm?fuseaction=home
References	Olds, et al. (2004) Olds, et al. (1997) Olds, et al. (2007)

Recommended strategy 25.3: Low birth weight

Name of intervention	Illinois Family Case Management Program
Organisation	Bureau Maternal and Infant Health Illinois Department of Human Services
Brief literature review	The Illinois Family Case Management (IFCM) Program, a Medicaid program created in Illinois in 1996, targets low-income women and reduces barriers to prenatal care and infant healthcare utilization. IFCM continued an initiative called "Healthy Moms/Healthy Kids" that operated from 1993 to 1996. Keeton, et al. (2004) conducted a retrospective cohort study of the effects of the prenatal care component of the IFCM program. Results showed that women participating in the IFCM program were significantly less likely to give birth to low and very low birth weight babies (Keeton, et al. 2004). Another study by Silva, et al. (2006) in Winnebago County Illinois found that overall there was a lower rate of low birth weight deliveries among FCM clients compared to the overall 5-year (1998-2002) County average (7.4% vs 8.2%). These studies showed that the program is successful at decreasing the rate of low birth weight in a disadvantaged population. The study by Silva, et al. (2006) also indicated that the key to a successful program was the quality of the prenatal intervention and addressing individual circumstances and risk factors rather than providing more hours of face to face case management.
How and why does this intervention work?	The program provides traditional prenatal care medical visits and can include care coordination, case management, risk assessment, nutritional counselling, health education, and home visiting. On entering the program a woman's needs are assessed, including health, social, environmental and educational needs as well as access barriers. A care plan is developed with the client focussing on the woman's highest needs. The client is referred to appropriate services during the pregnancy and for between one and three years after the birth. Emphasis is on helping the woman develop healthy behaviours during pregnancy and skills in seeking out needed resources.
On what population does this intervention work best?	The target population for the FCM intervention is low-income women, typically woman in their early 20s with a high school education, who may not have a car, lacks a familial emotional and financial support system, and are often stressed by daily realities that increase the likelihood of negative birth outcomes.
Where will this intervention work best?	This intervention can be provided in health centres and community-based organisations and either government or non-government agencies.
What is required to implement this intervention?	Dedicated staff to provide ongoing case management.
Resources and contact information	The program is administered by: Bureau Maternal and Infant Health, Illinois Department of Human Services Ph: 217-524-3319. http://www.hfs.illinois.gov/providerprograms/family.html http://www.dhs.state.il.us/page.aspx?item=31893 http://www.dhs.state.il.us/page.aspx?item=30517
References	Silva, et al. (2006) Keeton, et al. (2004)

Recommended strategy 25.4: Low birth weight	
Name of intervention	Mums and Babies
Organisation	Townsville Aboriginal and Islander Health Service (TIAHS)
Brief literature review	The Mums and Babies program is operated by the Townsville Aboriginal and Islander Health Service (TAIHS). This program was established in 2000 in response to barriers experienced by Aboriginal and Islander women attempting to access mainstream child and maternal health care. Since its beginning, and with additional funding, the Mums & Babies program has achieved significant improvements in baby and infant health, with the infant death rate being cut by more than half for the last period of pregnancy and the first eight weeks after birth (TAIHS data). The proportion of women having fewer than four antenatal visits (inadequate care) has fallen from 65% to 25% (Eades, 2004). There has been a reduction in low birth weight babies from 16 per cent to 11.7 per cent; mean birth weights have increased by 170 grams; and perinatal deaths have fallen from 58 per thousand to 22 per thousand (ANTaR, 2010). Atkinson (2001) stated that prior to the introduction of the program the perinatal death per thousand for Aboriginal people prior to the program was 56.8, it is now 18.
How and why does this intervention work?	The Mums and Babies project was designed to increase the utilisation of antenatal services of Indigenous women in the Townsville area of North Queensland. The service initially included a morning clinic for pregnant women and young mothers, initially staffed by two female doctors, two health workers, a child care worker and a driver. Evaluation of the program is ongoing but the program had 40 clients per month when it opened in 2000 and this rose to 500 per month in 2001.
On what population does this intervention work best?	This intervention was designed for Aboriginal and Torres Strait Islander women and their families in North Queensland. Some cultural adaptation may be required for Indigenous populations in other regions.
Where will this intervention work best?	This program works best in an Aboriginal and Torres Strait Islander health care setting.
What is required to implement this intervention?	Indigenous health staff (health workers, midwife, doctors and an outreach health worker). Culturally appropriate educational and informational material. Supervised childcare and transport services
Resources and contact information	Townsville Aboriginal and Islander Health Service 57-59 Gordon Street Townsville, Queensland, 4814 Phone: 07) 4759 4000 Fax: 07) 4759 4055 Website: http://www.tgpn.com.au/taihs.shtml
References	Atkinson (2001) Eades (2004).

4.3 Proportion of children with emotional or behavioural difficulties

For this update, the literature search re-examined the search outlined in the first version of this narrative review. An additional focus was on new citations based on the previously identified review articles and recommended and named interventions. As per the methods outlined in the introduction of this report, the search databases included: Cochrane, MEDLINE, PsycINFO, ERIC, and A+ Education. Key search terms included: anxiety, depression, conduct disorder, as well as emotional and behavioural difficulties (publication years = 2008 to present). Additional literature searches were also conducted on known practice literature web-sites. These sites included: the California Evidence-Based Clearinghouse for Child Welfare; the Promising Practices Network; Campbell Collaboration; Australian Council for Education Research; Australian Institute of Family Studies; and the Victorian Department of Department of Education and Early Childhood Development.

4.3.1 Background

According to Sawyer and colleagues (2000), in their work on the National Mental Health Survey for Children and Adolescents, approximately 14% of all children aged 4 - 12 years (male and female) have either an internalising (e.g. anxiety or depression) or externalising (e.g. conduct disorders) mental health problem. This figure was based on parental ratings on the Child Behaviour Checklist producing scores in the clinical range. Clinical services can not provide direct care to such a large number of children because there is a limited supply of trained clinicians. So in order to cope, governments and communities need alternative approaches to the prevention of mental health problems (Sawyer, et al. 2000).

The public expenditure costs in health, schools and the justice system for children with a conduct disorder in the United States have been estimated at about AU\$105,000 per child (Foster, et al. 2005). In this study, the children were followed up over a seven year period to the end of high school. This figure again represents another call for preventative action, especially when one examines the finding that those with elevated symptoms, but not at a clinical level, for conduct disorder did not cost as much.

The risk and protective factors for the development of conduct disorders have been identified (Webster-Stratton, et al. 2008, p. 473) as:

- teacher classroom management skills and classroom environment
- teacher-parent involvement
- child school readiness (social competence, emotional self-regulation, absence of behaviour problems)
- poverty

The first three factors can be targeted by school, parent and child interventions. Conroy and Brown (2004) also highlight the importance of environmental risk factors like poverty, domestic violence, parental drug use, child maltreatment and the development of emotional and behavioural problems in children.

4.3.2 The evidence base

Looking from the perspective of research publications and outputs (as opposed to real-world clinical impacts), the evidence-based practice movement has arguably had the most impact in the area of psychological interventions for adults and children. Kazdin (2005) conservatively estimated that there are over 550 documented psychotherapy treatments for children and adolescents. He identified the treatments with the most evidence, namely:

- for anxiety and phobias: cognitive behavioural therapy, modelling, reinforced practice, systematic desensitisation

- for depression: cognitive behaviour therapy, coping with depression course and interpersonal psychotherapy for adolescents
- for oppositional and conduct disorders: anger control therapy, multi-systemic therapy, parent management training and problem solving training.

To cope with this wealth of information this review has set a few boundaries. It has targeted children (0 to 8 years old) with some extension to the pre-adolescent period (8 – 12 years). It has searched specifically for interventions which focus on the prevention of the disorders occurring in adolescence and young adulthood (both externalising and internalising), including the reduction of risk factors, symptoms and enhanced coping strategies. The interventions selected are prevention programs delivered by professionals or teachers (as parental interventions have been covered in the indicators on parental social support and re-notification to child protection). Excluded from this review were:

- School-wide behaviour management programs (or techniques) like Check in / Check Out (CICO) (Todd, et al. 2008), Behavior Education Program (BEP), Academic and Behavioural Competencies (ABC) Program (Pelham, et al. 2005), Positive Behaviour Support (PBS) program (Cheney, et al. 2004), Cooperative Learning (Sutherland, et al. 2000), the Good Behavioural Game (van Lier, et al. 2004)
- Programs delivered over the internet (e.g. MoodGYM, Calear, et al. 2009 or <http://www.climateschools.tv/>, Andrews and Wilkinson, 2002)
- Components of programs (e.g. the Keeping Your Cool workbook) (Nelson, et al. 2006)
- Pharmacological treatments (e.g. Ritalin)
- Violence prevention programs (e.g. Multisite Violence Prevention Project, 2004)
- Crime prevention programs (e.g. the SNAP Under 12 Outreach Project, Augimeri, et al. 2007)
- Community awareness, teacher awareness and parental information programs (like KIDSMatter and HEADSPACE)
- Programs addressing substance use disorders (these are covered in indicators on tobacco, alcohol and illicit drugs) and other illnesses like Attention Deficit Hyperactivity Disorder.

Programs for children from disadvantaged communities that involve an element of organisational or system change (e.g. teachers undertaking home visits, like in the Perry Preschool Project) or providing educational and family support services in the one place (e.g. the Chicago Child-Parent Centers, see Promising Practices Network website for further details) have also been excluded.

Much work has been done in this prevention area and recent reviews include: Kumpfer and Alvarado (2003), Merry, et al. (2004), Bauer and Webster-Stratton (2006), Larun, et al. (2006), Merry and Spence (2007), Spence and Shortt (2007), Waddell, et al. (2007), Neil and Christensen (2007), Merry (2007), Piquero, et al. (2008), Neil and Christensen (2009), Bayer, et al. (2009), Calear and Christensen (2010). A paper by the Department of Education in Western Australia also neatly sets out a policy and curriculum framework for prevention in schools (Western Australia Department of Education, 2001).

Bayer, et al. (2009) reviewed the evidence base for a number of preventative interventions for behavioural and emotional problems, and discuss their applicability in the Australian context. They also note that there are relatively few preventative interventions for emotional problems for children (less than 8 years) when compared to interventions for behaviour problems.

Three key points emerge that have an impact on the selection of interventions.

1. As yet there is no outcome evaluation data for large scale schools mental health programs like MindMatters, NSW School-Link, The Best of Coping and beyondblue schools conducted in Australia (Neil and Christensen, 2007);

2. Programs designed multiple disorders (internalising and externalising) like the Help Starts Here program have limited evidence of effectiveness (Waddell, et al. 2007)
3. Work is proceeding on applying interventions that promote toddler mental health in Australia, see the news report (<http://www.abc.net.au/news/stories/2008/09/30/2377710.htm>).

The selection of four interventions for the catalogue was based on those published programs with strong outcome evaluation evidence and those that target individual preventable conditions (like depression, anxiety and conduct disorder).

There are many programs in this area and additional sources of evidence as well as descriptions of interventions can be found at the following websites: The Office of Juvenile Justice and Delinquency Prevention's (OJJDP) Model Programs Guide (MPG) (see http://www.dsgonline.com/mpg2.5/mpg_index.htm); the National Registry of Evidence-based Programs and Practices (NREPP) – apart of Substance Abuse and Mental Health Services Administration (SAMHSA) (see <http://nrepp.samhsa.gov/>); and Child Trends (<http://www.childtrends.org/Links/>).

4.3.3 Selection of interventions

Based on our search of the evidence the following interventions were recommended:

- FRIENDS / FRIENDS for Life (Barrett, et al. 2006)
- Fast Track (includes PATHS) (Conduct Problems Prevention Research Group, 2007)
- Penn Resiliency Program (Gillham, et al. 2007)
- PALS (Cooper, et al. 2003)

They represent a cross-section of interventions targeting individual and preventable conditions (depression, anxiety and conduct disorder). Some of these interventions have been developed and tested in Australia. Some interventions are also school based or early childhood care / pre-school based.

FRIENDS / FRIENDS for Life is a manualised, prevention and treatment program for anxiety symptoms in children and adolescents (10 - 12 or 15 -16 years) which can be conducted in schools. It is a cognitive-behavioural program which teaches children and adolescents strategies to deal with anxiety and challenging situations in a group format (1 hour for 10 weeks). It includes booster sessions and parent sessions conducted at the school. The program is conducted by trained classroom teachers. A new version of the FRIENDS program, known as Fun FRIENDS, is currently being developed and evaluated for preschool children aged four to six years (see Barrett, Antichich and Spencer, 2007).

Fast Track is a multi-component, prevention program for conduct disorders in children and adolescents (5 to 15 years). The first component is a teacher-led program called PATHS which is developmentally-based curriculum looking at skills in emotional literacy (targeting first graders). This step includes weekly teacher consultation about classroom management. Five additional components are then utilised for those children identified as high risk for conduct disorders. These include: Parent training, Family home visiting, Child social skill training, Child tutoring in reading; Peer partnering in the classroom. The PATHS curriculum is developmentally-based looking at skills in emotional literacy, positive peer relations, and problem-solving. The curriculum is highly developed with 131 lessons and can be taught three times per week for a minimum of 20-30 minutes per day for a five year period. A costing study on this program has also been completed (see Foster, et al. 2006). Slough and McMahon (2008) describe the development of the Fast Track program and its developmental model, as well as summarising intervention outcomes to date and implications for clinical practice.

The Penn Resiliency Program (PRP) is a school based program which targets the prevention of depressive symptoms and the promotion of optimism for children and adolescents. It teaches cognitive-behavioural and social problem-solving skills. Students learn to detect inaccurate thoughts, to evaluate the accuracy of those thoughts, and to challenge negative beliefs by considering alternative interpretations. Students learn techniques for assertiveness, negotiation, decision-making, social problem-solving, and relaxation. Skills are taught through role plays, short stories, or cartoons. Students then discuss the situations and undertake weekly homework assignments in applying the skills learned. Group leaders require supervision and training. Reivich and Gillham (2010) outline the development and theoretical basis of the PRP. Gladstone and Beardslee (2009) also comment that the PRP is one of the world's most evaluated interventions.

A version of the Penn Resilience Program used in Australia is known as Optimistic Kids (see http://mhws.agca.com.au/mmpipi_detail.php?id=54). Adaption of the PRP specially targeting depression prevention in adolescent girls is currently being developed (see <http://clinicaltrials.gov/ct2/show/NCT00641940>). The new intervention is known as Girls in Transition (GT).

Challen, et al. (2009) provide preliminary evidence on the UK Resilience Programme which involves a large implementation of the PRP involving approximately 2000 students across 22 secondary schools. There were 15 pupils per workshop class which lasted one hour. 18 hours of workshops were timetabled weekly for half a year or fortnightly for a full school year. Workshop facilitators received 8-10 days training and supervision support. Using a matched control design, preliminary results suggest that the programme made an impact on students' depression and anxiety symptom scores. The UK Programme will also be evaluated qualitatively.

PALS (Playing and Learning to Socialise) is a school based, social skills program. Young children (3 – 6 years old) in small groups learn lessons on greeting, sharing and turn-taking, and the self-management of feelings. The program training uses story telling and puppets, video and role playing, plus using songs with actions. The program is combined with parental and teacher training. A recent local evaluation of the PALS program was conducted in Murwillumbah in NSW (<http://www.aifs.gov.au/cafca/resources/localevaluations/index.html>) (Newell and Graham, 2009), as part of the Communities for Children project a part of the Stronger Families and Communities Strategy (SFCS) 2004 - 2009. They found significant differences on a scale examining emotional and conduct difficulties, hyperactivity / inattention and pro-social behaviour rated by early childhood workers before and after the program (n=193). Information on parent and early childhood worker satisfaction and the implementation of the program is also provided. Early childhood workers found the program helpful in improving parent-child relationships and family functioning, as well as helping their own understanding and meeting the needs of families and children, and improving their relationship with children. They also reported that they were now confident to implement the PALS program independently (see pages 51, 58, 60, and 62, Newell and Graham, 2009).

PALS and FRIENDS/FRIENDS for Life were both designed and developed in Australia, while training in the Penn Resiliency Program is currently being promoted by Geelong Grammar in Victoria (see <http://www.ggs.vic.edu.au/Positive-Education/Overview.aspx>).

Parental training is another type of program that can help prevent children developing behavioural and emotional difficulties. Parent programs with high-quality evidence include: The Incredible Years (Reid, et al. 2001, Webster-Stratton, et al. 2008), Triple P Parenting programs (Sanders, 2008); as well as programs like Early Head Start (Beeber, et al. 2004 and Forness, et al. 2000) which include parenting education with home visiting and linking in with community services and supports. These types of programs are described in the catalogue for the indicators "re-notifications to child protection" and "the proportion of parents who report high levels of social support".

In terms of parent training programs, Dretzke, et al. (2009) has recently reviewed the literature on parenting programs for children with conduct problems finding that they are an effective treatment approach, although assessing the relative effectiveness of individual programs requires further research. A recent Cochrane Review has been published on group-based, parent training programs for children 0 - 4 years with emotional and behavioural problems (see Barlow, et al. 2010). The authors also found some support for the use of these types of program to improve the emotional and behaviour adjustment of children. Barlow, et al. (2010) called for further research to examine the long term effects of such programs, as well as how they worked as preventative measures.

Other suitable programs with high-quality evidence include: First Steps to Success (Beard and Sugai, 2004), Johns Hopkins (Ialongo, et al. 2001), and Coping with Stress (Clarke, et al. 1995; 2001).

First Step to Success targets kindergarten children at risk or exhibiting aggressive and anti-social behaviours. It is a multi-component intervention - including universal screening for at risk children, a school-based intervention and skills building for parents. The social skills program is based on a daily rewards system for moderated behaviour. One child per classroom receives the intervention. It is run by a trained professional who hands over the training to the teacher. In the parental component of the program the trained professional meets with the parents once a week for six weeks (sessions last 45 minutes). The lessons include parent-child games and activities and help parents improve a child's school adjustment and performance (see <http://www.childtrends.org/lifecourse/programs/FirstStepToSuccess.htm> and <http://cecp.air.org/resources/success/firststep.asp> for further details).

Johns Hopkins is a program for the prevention of Conduct Disorder targeting first graders (see Ialongo, et al. 2001). It consists of two parts: a class-room centred intervention and a family-school partnership intervention. The class-room intervention includes: curriculum enhancements; enhance behaviour management practices; and back-up strategies for children not performing adequately. These include new materials: a new maths curriculum; a weekly classroom meeting; and use of the Good Behaviour Game. The family-school partnership intervention includes: training for teachers in parent-teacher communication; weekly homework assignments; parental workshops. The intervention uses some video materials from the Incredible Years program (see <http://www.edprevcenter.org/html/center.html> for further details).

Another program targeting depression for adolescents (13 to 18 years of age) is Coping with Stress. This intervention is a cognitive behavioural program for small groups (6 - 10 participants) conducted by trained therapists. The program targets overly negative thoughts using cognitive restructuring techniques and uses cartoons, roles plays and group discussions (see <http://www.kpchr.org/public/acwd/acwd.html#materials> for further details).

Other recommended programs with good evidence that could also be considered as contenders for the catalogue include: child social skills programs like I Can Problem Solve (see the Blueprints for Violence Prevention website for further details), (Social Decision Making / Problem Solving (see the Promising Practices Network website for further details); parent training programs - like Community Parenting Education (COPE) (Cunningham, et al. 1995) and Parents as Teachers (PAT) (see <http://www.parentsasteachers.org/site/pp.asp?c=ekIRLcMZJxE&b=272091>); as well as multi-component programs (parent training and child social skills) - like Linking Interests of Families and Teachers (LIFT) (Eddy, et al. 2003), Seattle Social Development Project (see the Promising Practices Network website for further details), Early Impact for pre-schoolers (Larmar, et al. 2007), ParentCorps (Caldwell, et al. 2005) (also includes community supports) and the Resourceful Adolescent Program (RAP) (see <http://www.hlth.gut.edu.au/psyc/rap/>) for adolescents (12 – 16 years). An Indigenous program, the Ngaripirriga'ajirri early intervention program, for developing children's social skills and parent management training has been evaluated in the Tiwi Islands (see <http://www.healthinonet.ecu.edu.au/health-resources/programs-projects?pid=151>).

The Queensland Department of Education and Training has a web-page on selecting commercially available Social and Emotional Learning (SEL) programs for schools (<http://education.qld.gov.au/student-services/protection/sel/index.html>). This website highlights the work of the Collaborative for Academic, Social and Emotional Learning (CASEL) (<http://www.casel.org/>) which has produced a guide to SEL and rating system for selecting programs (Collaborative for Academic, Social and Emotional Learning, 2003). According to the Collaborative, social and emotional learning involves five competencies: self-awareness, social awareness, self-management, relationship skills and responsible decision making. Their program rating system involves the following aspects: coverage of the five SEL competencies, materials required, implementation and location details, evidence of effectiveness, and use in national programs. The rating system identified 22 which were “especially effective and comprehensive in their SEL coverage, their documented impacts, and the staff development they provide” (CASEL, 2003, p. 3). One recommended program was PATHS.

The Promising Practices Network is also an important source of research information on recognised intervention programs in the areas of behaviour and serious conduct problems, mental health (anxiety and mood disorders) for children and adolescents (see for example: http://www.promisingpractices.net/programs_topic_list.asp?topicid=15).

Fast Track, Friends for Life, and the Penn Resiliency Program have also been reviewed at the Canadian Best Practices Portal (CBPP) for health related programs in the community (see <http://cbpp-pcpe.phac-aspc.gc.ca/intervention/search-eng.html>).

For school psychologists, the recent book by Mayer, Lochman and Van Acker (2009) *Cognitive-behavioral interventions for emotional and behavioral disorders: School-based practice* is an important resource providing state of the art information on anxiety and depression interventions that can be used in schools.

Fishful Thinking.com is an optimism and resilience website for parents, teachers and children (<http://www.fishfulthinking.com/>).

4.3.4 Discussion

Owing to the strong research base, the interventions discussed here represent best evidence for the prevention of emotional and behaviour difficulties. They cover a range of symptoms and/or psychological illnesses (depression, anxiety, and conduct disorder) and target young children and adolescents at school.

However, a few caveats are required. First, while we know that these interventions work for individuals, their effect at a community level is unknown. We need to look at the impact of these interventions on whole communities and compare communities using large-scale community effectiveness trials using community randomised trials, or time-series analysis with pre- and post-intervention measures and external controls (see Andrews and Wilkinson, 2002 for further details).

Second, some reviews state that while there is some encouraging work, depression prevention interventions, like the Penn Resiliency and Coping with Stress programs, need more research evidence and that their universal application is premature (see Merry, et al. 2004, Merry, 2007, Merry and Spence, 2007, Spence and Shortt, 2007). Recent reviews into the prevention of depression (Gladstone and Beardslee, 2009) for children and adolescents, and disruptive behaviours in young children (Petitclerc and Tremblay, 2009) suggest that selective and indicated interventions seem to be more effective than universal programs (MacMillan, 2009). They report that most studies focus on a reduction of symptoms and only a few studies look at the prevention of actual disorders (MacMillan, 2009). Calear and Christensen (2010) in their recent review found some universal programs for depression prevention to be effective and suggest that they need to be further researched rather than devalued. In the area of anxiety prevention, Neil and Christensen (2009) review found larger effect sizes for universal programs when compared to selective and indicated programs.

Third, another valid approach to this area, which is different from the prevention approach, is early intervention for reducing psychiatric disability. Here the EPPIC program in Victoria is the model of this type of work (see <http://www.eppic.org.au/about-us>).

Four, as Ollendick, et al. (2006) (p.509) rightly point out, the proper implementation of a large-scale program is not guaranteed “simply because a manual is present”. Further research work is required in regard to the dissemination, implementation and generalisability of large-scale program interventions.

Finally, this review focused on interventions for all groups (i.e. universal) or selected groups (i.e. population defined). It did not include interventions for high risk young people with demonstrated conditions (i.e. indicated groups) like children with parents with mental health problems, children with physical disabilities, children of divorced parents, low-birth weight children, children exposed to trauma, young people with substance abuse problems and young people in foster care. It also did not look at related areas like violence, aggression or bullying prevention programs, anti-gang involvement programs, suicide prevention programs, or children with Attention Deficit Hyperactivity Disorder (ADHD) or learning disabilities. These large and well-developed topic areas require separate evaluations of the evidence.

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Table 12 Proportion of children with emotional or behavioural difficulties: recommended strategies

	Supporting evidence	Replication	Documentation	Theoretical basis	Cultural reach
(26.1) Friends/ Friends for Life	1	Yes	Yes	Yes	CALD
(26.2) FAST Track (includes PATHS)	1 (PATHS)	Yes (PATHS)	Yes	Yes	UNIVERSAL
(26.3) Penn Resiliency Program	1	Yes	Yes	Yes	CALD LOW SES
(26.4) PALS (Playing and Learning to Socialise)	3	Yes	Yes	Yes	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 (e.g., pre and post-testing, post-testing only, or qualitative methods) or historical comparison group (e.g., normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (e.g., 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 (e.g. 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 trialled with people in disadvantaged communities, Indigenous people and/or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

4.3.6 Updated catalogue entries

Recommended strategy 26.1: Proportion of children with emotional or behavioural difficulties	
Name of intervention	FRIENDS / FRIENDS for Life
Organisation	Australian Academic Press
Brief literature review	The FRIENDS program is a manualised CBT program teaching children strategies to deal with anxiety and challenging situations in a group format. It runs for 1 hour over 10 weeks and includes booster sessions and parent sessions conducted at the school. The program is conducted by trained classroom teachers. It also includes work-books, manuals, CDs and information for parents (from website). The program promotes self development, problem-solving, resilience, self-esteem, self-expression and positive relationships.
How and why does this intervention work?	<p>Neil and Christensen (2007) report that the FRIENDS Program has been evaluated with five school based RCTs. It is a universal intervention that can be used for school based prevention or treatment. "In simple terms, this research says that up to 80% of children showing signs of an anxiety disorder no longer display that disorder after completing the program. This effect has been confirmed at up to 6 years post treatment" (from FRIENDS web-site) (see Barrett, et al. 2001a). The program has also been used in clinical settings.</p> <p>One key study is by Lowry-Webster, et al. (2001, 2003) which randomised 594, 10 to 13 year olds on a class by class basis, across seven schools in Brisbane. Those in the FRIENDS group reported fewer anxiety symptoms than the comparison group at post-test. At 12 months follow-up, 85% of children with anxiety symptoms identified before the program were diagnosis free. This is compared to 31% of the children in the control group. This finding generally held for the follow-ups at 24 and 36 months as well (see Barrett, et al. 2006).</p> <p>The research using the FRIENDS program suggests: (1) that earlier application with 9 - 10 year olds seems to have better preventive effects (Barrett, et al. 2005); (2) equivalent outcomes for program groups psychologist led or teacher led groups (Barrett and Turner, 2001); (3) greater effects when the program is targeting symptom reduction for at risk children rather than for the prevention of the development of a clinical disorder (Waddell, et al. 2007); (4) positive effects when the program is combined with parent training (Bernstein, et al. 2005); (5) high levels of satisfaction with the program as well as high levels of home completion (Barrett, et al. 2001b).</p> <p>The FRIENDS program has been used in large scale school trials across NSW, WA and QLD and internationally in English speaking countries – US, UK and Canada. It has been adapted for CALD and indigenous groups (see website for details).</p> <p>Recently, the Friends program has been utilised in the UK in small scale, pre- and post-treatment studies without a comparison group (Liddle and Macmillan, 2010; Stallard, 2010). Rose, Miller and Martinez (2009) in Canada have examined the Friends program in a small scale, pre- and post-treatment study (n = 52) with a comparison group (i.e. another intact class). This study which did not use randomisation found mixed results as both groups or classes self-reported lower anxiety scores at post-treatment.</p>
On what population does this intervention work best?	This is a universal, cognitive-behavioural intervention aimed at the prevention, early intervention and treatment of anxiety. Target group: children and adolescents 10 - 12 years or 15 - 16 years (from manual)
Where will this intervention work best?	Classroom based / Curriculum provided
What is required to implement this intervention?	Teacher Training

Resources and contact information	http://www.friendsinfo.net/index.html http://www.pathwayshrc.com.au/ c/o Australian Academic Press, 32 Jeays Street, Bowen Hills QLD 4006
References	Barrett and Turner (2001); Barrett, et al. (2001a); Barrett, et al. (2001b); Lowry-Webster, et al. (2001); Lowry-Webster, et al. (2003); Barrett, et al. (2005); Bernstein, et al. (2005); Barrett, et al. (2006); Waddell, et al. (2007) (Systematic Review); Neil and Christensen (2007) (Systematic Review); Rose, Miller and Martinez (2009); Liddle and Macmillan (2010); Stallard (2010).

Recommended strategy 26.2: Proportion of children with emotional or behavioural difficulties	
Name of intervention	Fast Track (includes PATHS)
Organisation	Fast Track
Brief literature review	This prevention program looks at classroom, school, and family risk factors, including communication between parents and schools. The first step is a teacher-led program called PATHS (Promoting Alternative Thinking Strategies) which is a developmentally-based curriculum looking at skills in emotional literacy (targeting first graders). This step includes weekly teacher consultation about classroom management. Five additional components are then utilised for high risk students. These include: Parent training groups - positive family-school relationships and behaviour management skills (use of praise, time-out, and self-restraint); Family home visiting to train and support parents; Child social skill training groups; Child tutoring in reading; Peer partnering in the classroom. (The adolescent phase of the program places less emphasis on group work and more on individual work, especially in the area of high school academic transition and family supports) (from website).
How and why does this intervention work?	<p>Matched high risk kindergarten schools in the United States were assigned to Fast Track intervention services or a control condition. Over 9000 children (across four sites) were screened for aggressive behaviours and the top 10% of children were invited into the study (n = 891). Three years after 1st grade the intervention services group was less likely to exhibit serious conduct behaviours (diagnostic criteria), producing a 10% difference between groups. This was supported by parent and teacher reports of their behaviour (Conduct Problems Prevention Research Group, 1999, 2002). These effects continue to grade 6 and 9 (see Conduct Problems Prevention Research Group, 2007). Numerous other studies have been conducted identifying risk factors and predictors (e.g. poor family attachment) of FAST track outcomes (see websites).</p> <p>The PATHS curriculum is developmentally-based looking at social skills in emotional literacy, positive peer relations, and problem-solving. The curriculum can be taught three times per week for a minimum of 20-30 minutes per day. The program provides teachers with lessons plans, materials, instructions, information handouts to parents, and homework assignments (131 lessons in 6 volumes to be conducted over 5 years) (from the Blueprints website). There have been three controlled studies with randomized control groups: 1 with normal children, 1 with special education-classified children, and 1 with deaf/hearing-impaired children. All groups have shown improvements in understanding and responding to the education lessons and materials. There is also some evidence of cognitive gains. Teachers have also noted decreases internalizing (all children) and externalising behaviours (for special education children) one year post intervention (from the PATHS website). In a recent randomised trial conducted over a 9 month period pre-school children in the PATHS classrooms were rated by their parents and teachers as more socially competent than their peers (Domitrovich, et al. 2007).</p>
On what population does this intervention work best?	FAST Track is a comprehensive program (including PATHS) which aims to prevent conduct disorder. Target group: children and adolescents 5 - 15 years (PATHS 5 - 10 years)
Where will this intervention work best?	Classroom based / Curriculum provided
What is required to implement this intervention?	Teacher Training and for the FAST Track program - assistance / support from trained former teachers, counsellors and assistants to help run the parental and other groups (e.g. tutoring sessions).
Resources and contact information	<p>FAST Track: Box 90539, Durham, NC 27708-0539 USA</p> <p>http://www.fasttrackproject.org/</p> <p>http://www.findyouthinfo.gov/programdetails.aspx?pid=327</p> <p>PATHS:</p> <p>http://www.colorado.edu/cspv/blueprints/modelprograms/PATHS.html</p>

	http://www.prevention.psu.edu/projects/PATHSFindings.html http://pathstraining.com/index.html
References	Conduct Problems Prevention Research Group (1999); Conduct Problems Prevention Research Group (2002); Conduct Problems Prevention Research Group (2007); Domitrovich, et al. (2007); Waddell, et al. (2007) (Systematic Review)

Recommended strategy 26.3: Proportion of children with emotional or behavioural difficulties

Name of intervention	Penn Resiliency Program
Organisation	Positive Psychology Center at the University of Pennsylvania (Dr. Martin Seligman – Director)
Brief literature review	The Penn Resiliency Program (PRP) is based on cognitive behavioural theory. Students learn to detect inaccurate thoughts, to evaluate the accuracy of those thoughts, and to challenge negative beliefs by considering alternative interpretations. Students learn techniques for assertiveness, negotiation, decision-making, social problem-solving, and relaxation. The program takes the form of 12 (90-minute) lessons or 18 - 24 (60-minute) lessons. Skills are taught through role plays, short stories, or cartoons. Students then discuss the situations and undertake weekly homework assignments in applying the skills learned. Group leaders require supervision and training (from program website).
How and why does this intervention work?	<p>According to the program's web-site, it has been evaluated in at least 13 controlled studies with more than 2,000 children and adolescents between the ages of 8 and 15. Most used RCTs and some were conducted by independent researchers. Taken together, these suggest that the program prevents symptoms of depression and anxiety. The programs effects also have been found to last 2 or more years post intervention (see for example a recent study by Cutuli, et al. (2006) into adolescents with conduct problems).</p> <p>The prevention program has been shown to have positive benefits for some CALD and low income groups (see Yu and Seligman, 2002 and Cardemil, et al. 2007). The program is currently underway at Geelong Grammar in Victoria: http://www.ggs.vic.edu.au/Positive-Education/Overview.aspx</p> <p>It should be noted that some recent papers (like Gillham, et al. 2007) have found some inconsistent results when the Penn program has been generalised or implemented in other schools or multiple school settings. This includes some studies conducted in Australia. This recent work highlights the need for the “development of effective dissemination strategies” in prevention research (Gillham, et al. 2007).</p> <p>Brunwasser, et al. (2009) in their meta-analysis of studies evaluating PRP on depressive symptoms found that adolescents who participated in the program had fewer depressive symptoms than those receiving no treatment. This lasted for up to 12 months post treatment, though the effect size was small. Brunwasser, et al. (2009) call for further research into the PRP using active control conditions and longer follow-up periods. They also seek an examination of the practical significance or meaningfulness of any psychological changes brought about by the program.</p> <p>Challen, et al. (2009) from the London School of Economics provide preliminary evidence on the UK Resilience Programme which involves a large implementation of the PRP involving approximately 2000 students across 22 secondary schools.</p>
On what population does this intervention work best?	This is a cognitive-behavioural and social problem-solving skills / optimism program aimed at reducing depressive symptoms. Target group: children and adolescents 8 - 15 years.
Where will this intervention work best?	Classroom based
What is required to implement this intervention?	Teacher training
Resources and contact information	http://www.ppc.sas.upenn.edu/prpsum.htm
References	Yu and Seligman (2002); Cutuli, et al. (2006); Gillham, et al. (2007); Cardemil, et al. (2007); Waddell, et al. (2007) (Systematic Review); Challen, et al. (2009); Brunwasser, et al. (2009).

Recommended strategy 26.4: Proportion of children with emotional or behavioural difficulties	
Name of intervention	PALS (Playing and Learning to Socialise) program
Organisation	c/o Inscript Publishing Pty Ltd Australia www.inscript.com.au
Brief literature review	The intervention consists of 10 weekly small-group sessions (20 - 30 minutes per week). Social skills training includes lessons on greeting, sharing and turn-taking; as well as self-management training (dealing with stressful situations and managing angry feelings) using story telling and puppets, video and role playing, plus using songs with actions. The program is combined with parental and teacher training (class activities and information sheets) (from Cooper, et al. 2003).
How and why does this intervention work?	<p>The main study by Cooper, et al. (2003) was conducted across 13 child care centres. Compared with wait-list controls (n=38), the intervention group (n=39) showed decreases in the intensity and severity of problem behaviours on a pre and post outcome measure (teacher rated).</p> <p>The PALS program has been implemented in rural areas with pre and post testing of children's social skills and behaviours (parental rating) (see Hourihan and Hoban, 2004). The study by Cooper, et al. (2003) has been replicated in the United Kingdom by James and Mellor (2007) and has reported similar results. The UK program has been extended to 26 local authorities and 41 schools (see http://www.c4eo.org.uk/themes/earlyyears/vlpdetails.aspx?lpeid=94).</p> <p>A recent local evaluation of the PALS program was conducted in Murwillumbah in NSW (http://www.aifs.gov.au/cafca/resources/localevaluations/index.html) (Newell and Graham, 2009). It provides useful data on the program in terms of early childhood worker satisfaction, implementation and sustainability issues and children's behaviour scores.</p>
On what population does this intervention work best?	This is a social skills program which is designed to reduce problem behaviours. Target group: children 3 - 6 years.
Where will this intervention work best?	Classroom based.
What is required to implement this intervention?	Teacher training.
Resources and contact information	http://www.palsprogram.com.au/
References	Cooper, et al. (2003); Hourihan and Hoban (2004); James and Mellor (2007); Newell and Graham (2009).

4.4 Proportion of families who are food insecure

New database searches were conducted for the food insecurity indicator using Scopus, which indexes journals included in MEDLINE, PsycINFO and CINAHL (among others). Search terms used were: food insecurity AND child\$ AND intervention, limited to 2009-2010. Additional literature searches were also conducted using the same search terms on known practice literature web-sites. These sites included: the California Evidence-Based Clearinghouse for Child Welfare; the Promising Practices Network; Campbell Collaboration; Australian Council for Education Research; Australian Institute of Family Studies; and the Victorian Department of Department of Education and Early Childhood Development.

4.4.1 Background

Food insecurity is defined as being “unable to consistently access an adequate amount of food to live active and healthy lives, or have the assured ability to acquire acceptable foods in socially acceptable ways” (SIGNAL, 2001, p. 40). It may be chronic, temporary or cyclic, and is caused by poverty and/or lack of physical access to food. Contributing factors include social isolation, illness, frailness or disability.

Data from the 1995 National Nutrition Survey indicates that concerns about this issue are greatest among people aged 25-44 years, with dependent children and no employment in the household (SIGNAL, 2001). At that time 4.6% of people over 16 years of age said that at some time in the past year they had run out of food and could not afford to buy more (VicHealth, 2003). More recent figures from Victoria (VicHealth, 2007) confirm this level of prevalence, while figures from NSW (Population Health Division, 2004) and SA (Kenny, Booth, Taylor and Dal Grande, no date) are slightly higher (6.1% and 7.5% respectively). In 2006, almost 6% of Victorian children lived in households where food insecurity had been experienced in the past year (VicHealth, 2007). Findings from the South Australian Monitoring and Surveillance System indicate that food insecurity is more likely in households with children than in those without (Kenny, et al. no date).

The affordability of basic foods can lead to decreased food security. From July 2007 to June 2008 the Consumer Price Index in Australia rose by 4.5%, the largest annual change since 1995, excluding the change associated with the introduction of the GST in 2001 (Foley, 2009). This problem is more prevalent among Aboriginal and Torres Strait Islander people, who spend on average a larger proportion of their incomes on food (SIGNAL, 2001). Between 2004 and 2005 24% of Indigenous Australians aged 15 years and over reported that they ran out of food in the last 12 months, compared to 5% of non-Indigenous Australians (Browne, 2009).

Another vulnerable group is humanitarian entrants to Australia (i.e. refugees), many of whom have a range of difficulties including language and literacy, lack of familiarity with local produce and where to buy it, lack of knowledge and skills in food preparation and storage due to years of living in refugee camps, and inadequate income (CEH, 2008). The averages cited above mask the fact that food insecurity is concentrated in certain areas. For example, a recent study in three socially disadvantaged areas of Sydney found that more than one in five households experienced food insecurity (Nolan, et al. 2006).

Children in food-insecure households are at increased risk of a range of adverse health, growth and developmental outcomes (Cook and Frank, 2008). Infants and toddlers (aged 0-36 months) appear especially vulnerable, as do adolescent girls. Food insecurity is associated with higher rates of low-birthweight births and maternal depression, less initiation and duration of breastfeeding, greater likelihood of iron deficiency anemia and only fair / poor health status, and lower weight and height for age among preschoolers. School-aged children in food-insecure households have an increased risk of iron deficiency, chronic and acute illness, anxiety, depression and academic and social difficulties (Cook and Frank, 2008).

The impacts of food insecurity extend into adult lives. Women who grew up in a poor household have a higher risk of overweight and obesity in adulthood. Qualitative data from a longitudinal

study indicate that these women may be 'super-motivated' to avoid food insecurity, and their experiences may also affect their food preferences (Olson, Bove and Miller, 2007). Furthermore, poor nutrition contributes directly to observed inequalities in health outcomes for people in low socio-economic status households and neighbourhoods (Robertson, Brunner and Sheiham, 2006, 2006; Cook and Frank, 2008; Rand Corporation, 2008).

4.4.2 The evidence base

Food security is a relatively new concept in developed countries and has only recently become a focus for policy and practice. As a result, there is considerable uncertainty about the best way to tackle this problem (Rychetnik, Webb, Story and Katz, 2003). Five years ago, the authors of an options paper for NSW Health concluded that "an evidence-based menu of options for interventions to improve food security would be premature and ... too limited to be useful as a tool for innovative strategic development" (Rychetnik et al., 2003, p. 7). Instead they produced a description of the available interventions and strongly recommended that those who chose to implement such interventions should conduct evaluation research to add to the evidence base.

One promising broad strategy for improving access to food is the integration of nutrition and food security services into health, welfare and food assistance programs targeting the most disadvantaged. This would involve assessment, advice on options, referral and follow-up, as well as advocacy for clients to overcome any difficulties in using services. Such a system could involve general practitioners and other primary health care providers, nutrition and dietetics services, social and welfare agencies, disability and aged care services, the social security system, food aid and school meals programs, local community development projects (such as transport to shops, food delivery and nutrition education) and employment programs (Rychetnik, et al. 2003).

At that time, few of the available interventions had been evaluated rigorously and there were no evidence-based reviews (Rychetnik, et al. 2003). Since then, a Cochrane Collaboration review of school-based child feeding programs has been published (Kristjansson, et al. 2007). Nevertheless, there is a lack of good evidence on what works to address food insecurity in developed countries, and the interventions discussed below represent promising, rather than strictly evidence-based, approaches.

4.4.3 Selection of recommended strategies

Perhaps the most obvious way to address the educational and behavioural consequences of food insecurity, if not their causes, is to provide meals for hungry children while they are at school.

In Australia, child feeding programs have traditionally taken the form of school breakfasts (rather than lunches, which are the more common model in some countries, such as the United Kingdom). School breakfast programs have existed in Australia since the late 1970s (Engels and Boys, 2008). For the past decade they have been funded on an ad hoc basis by local and national non-government organisations (NGOs), donations from business, and fundraising activities. A study of breakfast programs in Victoria found that in most cases the school contacts an NGO and completes a formal application for funding (Engels and Boys, 2008). The NGO funds the program, at least initially, and provides advice on setting up and running it and on a suitable menu. After a time, schools are expected to become more self-sufficient, raising their own funds to support the program. In general, these are targeted rather than universal programs; participating children are usually identified by the classroom teacher, although some refer themselves.

The 'Good Start Breakfast Club' is offered nationally by the Australian Red Cross, and there are also local initiatives run at a state or school level. In their review for the Government of South Australia, Kennett and Smith (2005) noted that breakfast programs were organised and run in a wide variety of ways in different parts of the country, apparently in response to the perceived needs of participating schools. There has been an increasing focus on meeting nutritional needs of children, compared with earlier programs that aimed mainly to alleviate hunger. These reviewers set out a set of minimum requirements for breakfast programs, including: kitchen

facilities, space for students to sit at tables, appliances for storing and cooking food, cutlery and crockery, and a system for dealing with issues of cleaning and hygiene, such as who is responsible for the dishes and emptying bins. They advised that 'self-serve' arrangements appeared to be the least labour-intensive and may encourage students to become self-reliant (Kennett and Smith, 2005).

Two recent evaluations of the 'Good Start Breakfast Club' have been reported. The first, conducted at six pilot sites in NSW, addressed the central question of whether the clubs were achieving their aim of providing "a healthy breakfast to children in need" (Miller and Yeatman, 2008, p. 2). At one of the sites, children's average nutrient intake was measured by collecting data on the total food consumed in a month divided by the number of meals or students attending during that month. As a result of this process, the volunteers running the site decided to switch to wholemeal bread and monitor children's use of honey (which had been excessive). A national evaluation conducted by the Australian Red Cross in 2007 reported on teachers' perceptions of the benefits of the breakfast clubs to their pupils but did not include objective measures of changes in nutritional behaviours, school achievement or similar outcomes (Australian Red Cross, 2007, cited in Miller and Yeatman, 2008). It appears, therefore, that specific evidence for the effectiveness of school breakfast clubs is preliminary at this stage.

Nevertheless, there is evidence that school-based child feeding programs in general can be effective. A recent Cochrane Collaboration systematic review concluded that such programs have small but positive impacts on children (Kristjansson, et al. 2007). These include improvements in weight, height (for younger children only), attendance, maths performance and behaviour. The greatest benefits are seen among those most in need. Conclusions were based on evidence from two randomised controlled trials, six controlled before-after studies and two interrupted time series studies in developed countries.

Two alternative child feeding models which are widely used in the United States are the Kids Café (Tapper-Gardzina and Cotugna, 2003) and the Food for Kids program (Rodgers and Milewska, 2007). Kids Café is the most extensive child feeding program in the US, with more than 1700 sites in operation. They provide snacks and meals to children aged 6 to 18 years, along with mentoring and educational activities. Kids Cafés operate as after-school programs, and are run in collaboration with existing community groups such as churches, YMCA and children's clubs. In the Food for Kids program, backpacks full of pre-prepared foods are given to school children, either daily or weekly on a Friday, so that they can put together their own meals in the evenings and weekends in the absence of a parent. Food items include cereal, long-life milk, baked beans, tinned soup, crackers and dried fruits. Some fresh fruit and vegetables are also distributed but this is limited by availability and shelf life. Items are supplied by local food banks. Objective measures (scores on state benchmark exams) demonstrated that, at a school level, participation in the Arkansas Food For Kids program was associated with significantly greater achievement in maths and literacy tests for eighth grade pupils (Rodgers and Milewska, 2007). Based on this concept, the Backpack Program was rolled out nationally in July 2006 by the charity Feeding America and currently serves around 70,000 children annually (see: <http://feedingamerica.org/our-network/network-programs/backpack-program.aspx> for details).

Education in food selection and resource management for low-income families can reduce the risk of food insecurity (Dollahite, Olson and Scott-Pierce, 2003). Studies in Australia and the United States have shown that adults in food-insecure households express a strong interest in learning how to create healthy and economical family meals (Hoisington, Shulz and Butkus, 2002; Nolan, Williams, Rikard-Bell and Mohsin, 2006).

There is evidence that those who are poor and food insecure are less likely to consume fruit, vegetables or salads (Tingay, et al. 2003; Rand Corporation, 2008). This situation arises because highly nutritious foods tend to be relatively expensive, whereas foods containing large amounts of starches, fats, sugar and salt are cheap, filling and palatable. Economic modelling demonstrates that reducing expenditure on food results in high-fat, energy-dense diets similar in composition to those actually consumed by low-income groups. Nutritionally valuable foods such as lean meat,

fish, fresh vegetables and fruit tend to be more expensive and are squeezed out of the diet as the budget is reduced (Burns, 2004; Drewnowski and Specter, 2004; Robertson, Brunner and Sheiham, 2006).

A tool for monitoring the cost of nutritious foods in Victoria was created using demographic and food purchasing data to define a 'healthy food basket' of 44 foods. The basket is designed to meet 85% of nutritional requirements and 95% of energy needs for each individual in the household, and quantities were modified to suit four family types, including a single mother with two children. Similar healthy food baskets have been developed in other Australian states, territories and regions (Palermo and Wilson, 2007).

Food Cent\$ is an education program that was developed by the Department of Health, Western Australia, and is being implemented in several states by the Australian Red Cross. It is innovative, in that it links spending on food directly to the components of a healthy diet. Local volunteers are trained to deliver the program, which includes a session on preparing cheap and healthy meals, one on budgeting, and a field trip to a supermarket to demonstrate the use of the KiloCent\$ Counter to calculate the cost per kilogram of various foods. The program was originally run in a disadvantaged area during a period of recession, and 612 people were involved in the before-after evaluation, which found positive changes in (self-reported) eating and spending on food (Foley and Pollard, 1998). Food Cent\$ has also been used with mothers who have a mental illness. A small-scale, qualitative and quantitative evaluation tentatively concluded that the program had positive impacts on diet and spending patterns (Bassett, Lloyd and King, 2003).

Food For All is currently running in eight local council areas in Victoria, with funding support from VicHealth. This program involves community development activities which aim to increase access to food and understanding of healthy eating in disadvantaged areas. Specific strategies vary from site to site, but may include: community gardens; subsidised meals; a 'welcome kit' for newly arrived refugees and others highlighting local food outlets and instructions on how to identify, buy and prepare fruit and vegetables; nutrition classes delivered by peer educators; advocacy and policy development; growers' markets; and a mobile market stall delivering fresh foods at schools and public housing estates (Pryor, 2008).

Some Food For All projects have been independently evaluated. For example, an evaluation of the Yarra and Maribyrnong projects by Deakin University School of Health Sciences found these projects were well supported and sustainable (VicHealth, 2003). Similar conclusions were reached following an evaluation of the Braystone and Café Meals projects by RMIT University (Elsworth and Astbury, 2005). For example, the Braystone Project included weekly mobile market stall visits to two high-rise public housing estates, which succeeded in making fruit and vegetables available at affordable prices, and also created opportunities for social interaction and further community development activities. Also successful was a strategy for selling fruit and vegetables at local schools, raising students' awareness of healthy eating and improving their access to good foods for breakfast or lunch. The mobile market stall and shop were staffed by clients of WestNet, a community organisation providing a day facility for people with intellectual disabilities. Thus the project also provided meaningful, supervised work experience for the clients who took part.

Another approach that seeks to empower participants and address some of the causes of food insecurity is the Early Childhood Education and Assistance Program (ECEAP), listed by the Promising Practices Network as 'promising' (Rand Corporation, 2004). This is a holistic program for preschoolers and their parents. Health and nutrition screening is one of four program components (the others are education, parent involvement and family support) all aimed at identifying and addressing problems that hinder the learning and development of children from disadvantaged and impoverished backgrounds. The program is delivered (free of charge) in a preschool setting by school districts, childcare providers, non-profit organisations and tribal (Indigenous) organisations. At least one complete meal is provided for the children each day in the classroom, and children and their parents receive nutrition education.

Two evaluation reports are cited by the Promising Practices Network, but this reviewer has been unable to obtain the original documents. The evaluation consisted of a 12-year longitudinal study with a treatment group of 1358 children and a comparison group of 322 children who were eligible for the program but did not take part. By the ninth year, 57% of participants were now above the poverty line, a tenfold increase from 5% at baseline. Over the same period, the proportion above the poverty line in the comparison group increased 44% (from 47% to 68%). Some caution is needed in interpreting these results due to large pre-existing differences between the groups and high attrition (only 55% of the treatment group and 65% of the comparison group were still in the study at 12 years). The program's 20th Anniversary Report, published in 2006, cites a number of benefits of high-quality preschool programs in general, but does not provide specific outcomes data for ECEAP. More than 118,000 children and families, most of whom are living on incomes less than 80% of the US poverty line, have been served by ECEAP since 1986 (Children's Services Unit, 2006).

4.4.4 Discussion

Food insecurity has been, until recently, an invisible problem in Australia (VicHealth, 2003). Even now, although governments and non-government organisations have mobilised to act on this problem, there is a lack of research and quality evaluation to inform policy and practice. It is interesting that a recent project in which children were interviewed and asked about their experiences of poverty apparently did not address the issue of whether the participating children had reliable and regular access to nutritious meals (ARACY Collaborative Team, no date).

While local initiatives by non-government and government organisations can help individuals and families in the short term, policies on nutrition and food supply are also needed at higher levels of government (Robertson, et al., 2006). Local action can help address the cultural and personal determinants of food insecurity, such as knowledge, preferences and household practices, but food choice and nutrition are also determined by availability and access. In the UK, a review of national strategies for household food security recommended a coordinated approach covering agriculture, environment, health, social welfare, education, employment and the economy.

Decision makers need to consider local needs and priorities when selecting or designing interventions to enhance food security in their regions. Their choices should be informed by knowledge about: the prevalence of food insecurity among at-risk population groups; the areas in which food supply is inadequate and the reasons for this; and identification of which groups have difficulty acquiring food, and why (Rychetnik, et al. 2003). They should also ensure their interventions are rigorously evaluated and the findings published, to build an evidence base.

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Table 13 Proportion of families who are food insecure: recommended strategies

	Supporting evidence	Replication	Documen-tation	Theoretical basis	Cultural reach
(27.1) School breakfasts	1	Yes	No	Yes	LOW SES INDIGENOUS CALD
(27.2) Food Cent\$	5	Yes	Yes	Yes	LOW SES
(27.3) Food for All	4	Yes	No	Yes	LOW SES INDIGENOUS CALD
(27.4) ECEAP	3	No	Yes	Yes	LOW SES 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 (e.g., pre and post-testing, post-testing only, or qualitative methods) or historical comparison group (e.g., normative data).
5. Emerging practice – evaluated without an independent assessment of outcomes (e.g., 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 (e.g. 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 trialled with people in disadvantaged communities, Indigenous people and/or people from culturally and linguistically diverse backgrounds? (LOW SES/INDIGENOUS/CALD)

4.4.6 Updated catalogue entries

Recommended strategy 27.1: Proportion of families who are food insecure	
Name of intervention	School breakfasts
Organisation	Various, mainly non-government organisations
Brief literature review	This intervention directly addresses children's hunger and associated behavioural and learning problems by providing a reliable source for one nutritious meal each school day. School breakfast programs have existed in Australia since the late 1970s but lost government funding in 1996. Since then they have been funded by local and national charities, donations from business, and fundraising. Non-government organisations (NGO) such as Save Our Children, Salvation Army and Australian Red Cross provide substantial support.
How and why does this intervention work?	A recent Cochrane Collaboration systematic review (Kristjansson, et al. 2007) concluded that school-based feeding programs have small but positive impacts on children in developed countries. These include improvements in weight, height (for younger children only), attendance, maths performance and behaviour. Specific benefits depend on program characteristics such as the nutritional content of the meals provided, baseline nutritional status (greatest benefits for the most deprived), learning conditions in the classrooms, timing of meal/snack (children may be less likely to attend early for breakfast compared with a later snack or lunch), substitution (participating children may be given less to eat at home, so that non-participating siblings can have more of the limited available food), age and compliance.
On what population does this intervention work best?	This can be run for school-aged children either as a universal program (reducing the stigma associated with receiving free meals) or targeted to those most in need. In the latter case, participating children are usually identified by the classroom teacher, although some refer themselves. In most cases they need the program because of poverty, but in some cases parents are working and do not have time to provide breakfast.
Where will this intervention work best?	Primary and secondary schools.
What is required to implement this intervention?	A study of breakfast programs in Victoria found that in most cases the school contacts an NGO and completes a formal application for funding. The NGO funds the program, at least initially, and provides advice on setting up and running it and on a suitable menu. After a time, schools are expected to become more self-sufficient, raising their own funds to support the program. Reviewers have recommended that nutrition programs be piloted to test palatability and identify specific nutritional needs in the target population.
Resources and contact information	http://www.foodbank.com.au/default.asp?id=1,48,13,93 http://www.redcross.org.au/ourservices_acrossaustralia_goodstartbreakfastclub.htm
References	Kennett and Smith (2005) Kristjansson, et al. (2007) Engels and Boys (2008) Miller and Yeatman (2008)

Recommended strategy 27.2: Proportion of families who are food insecure	
Name of intervention	Food Cent\$
Organisation	Department of Health, Western Australia
Brief literature review	Food Cent\$ is an education program designed to facilitate behaviour change by providing tools and knowledge to enable participants to create their own healthy eating plans. It also creates an infrastructure for delivery by training local volunteers to act as advisors within their own communities. The Food Cent\$ 10-plan encourages participants to spend the largest proportion of their food budget (six-tenths) on the 'eat most' foods from the Healthy Eating Pyramid, such as fruit, vegetables and cereal products. A smaller proportion (three-tenths) is spent on 'eat moderately foods' such as dairy, meat and eggs, and the remaining one-tenth on 'eat least' foods such as margarine, coffee, biscuits and snack foods. In this way, budgeting is directly linked to the components of a healthy diet, and people are still dealing with familiar foods rather than trying to substitute 'healthy' alternatives. The program also uses the Kilocent\$ counter to calculate costs per kilogram of different foods. Participants attend three sessions, addressing budgeting, cooking cheap and healthy meals, and a tour of the supermarket.
How and why does this intervention work?	Two trials have been conducted, both employing before-after designs with no comparison groups. Participants in the first trial completed a 'Diet Check' self-report at baseline and again six weeks after the budget session (43% response rate for both advisors and attenders). Information about spending changes was also collected. Of those who responded, 60% of advisors and 35% of session attenders said they had changed their diet, and 51% and 28% respectively had changed their spending. Paired tests using chi-square analysis found significant reductions in consumption of margarine, lollies and cakes. Dietary changes were maintained, four years after the end of the program. The second trial involved focus groups and examination of supermarket receipts before and after the program. It tentatively concluded that the program had a positive effect on spending patterns and diet.
On what population does this intervention work best?	This program was developed in Australia and originally run in a disadvantaged area. Most participants (83-91%) were female, and 14-19% were Aboriginal (percentages varied for different sessions). More recently, the program was trialled with six mothers of preschoolers who were taking part in a parenting program designed for parents with a mental illness.
Where will this intervention work best?	Areas of recognised disadvantage. An adapted and expanded version of Food Cent\$ is currently run by Red Cross Australia in WA, SA, Qld, NT and has been trialled in Victoria.
What is required to implement this intervention?	A venue with a kitchen for the advisor training, cooking and budget sessions and access to a local supermarket for the tour session. Advisors may be recruited from among community health nurses, Aboriginal health workers, school teachers and workers at church or employment agencies.
Resources and contact information	http://www.foodcentsprogram.com.au/ Shaun Hazeldine, Australian Red Cross, 02 9229 4204, shazeldine@redcross.org.au
References	Foley and Pollard (1998) Bassett, Lloyd and King (2003)

Recommended strategy 27.3: Proportion of families who are food insecure	
Name of intervention	Food for All
Organisation	VicHealth
Brief literature review	Community development activities which aim to increase access to food and understanding of healthy eating in disadvantaged areas. Specific strategies vary from site to site, but may include: community gardens; subsidised meals; a 'welcome kit' for newly arrived refugees and others highlighting local food outlets and instructions on how to identify, buy and prepare fruit and vegetables; nutrition classes delivered by peer educators; advocacy and policy development; growers' markets; a mobile market stall delivering fresh foods at schools and public housing estates. The program is supported centrally through regular meetings of projects, public forums, communications resources and awareness raising activities, and a web-based Food Security Network hosted by the Victorian Local Governance Association.
How and why does this intervention work?	Some Food For All demonstration projects have been independently evaluated. For example, an evaluation of the Yarra and Maribyrnong projects by Deakin University School of Health Sciences found these projects were well supported and sustainable. Similar conclusions were reached following an evaluation of the Braystone and Cafe Meals projects by RMIT University. There do not appear to be specific outcomes data available for children and young people.
On what population does this intervention work best?	Food For All is an Australian program which is implemented at the community level, rather than targeting individuals or families. It is currently running in eight local council areas in Victoria, with funding support from VicHealth. Although it does not specifically target children, impacts on them are likely, through parent nutrition education and improved access to fruit and vegetables.
Where will this intervention work best?	Areas of recognised disadvantage, where access to fresh food is limited. Eligibility for the demonstration projects was limited to local government regions in which more than 20% of the population lived in areas with low Socio-Economic Indexes for Areas (SEIFA) scores.
What is required to implement this intervention?	Food for All is implemented by local government areas in partnership with the Victorian Health Promotion Foundation and the Department of Human Services. To be successful, food security strategies need to be linked to other community and government activities (e.g. housing, urban planning, neighbourhood renewal) and built into policy frameworks. Specific requirements vary between sites according to the community development model and strategies chosen.
Resources and contact information	http://www.vichealth.vic.gov.au/en/Programs-and-Projects/Healthy-Eating/Food-for-All-Program.aspx
References	VicHealth (2003) Elsworth and Astbury (2005) Centre for Culture, Ethnicity and Health (2008) Various other undated VicHealth documents

Recommended strategy 27.4: Proportion of families who are food insecure	
Name of intervention	Early Childhood Education and Assistance Program (ECEAP)
Organisation	Washington State Department of Early Learning, United States
Brief literature review	This is a holistic program for preschoolers and their parents. Health and nutrition screening is one of four components (the others are education, parent involvement and family support) all aimed at identifying and addressing problems that hinder the learning and development of children from disadvantaged and impoverished backgrounds. The goal is to help parents become self-sufficient while preparing their children to succeed in school, thus breaking the poverty cycle. Children eat at least one complete meal in the classroom each day, providing one third of their daily nutritional requirements. Parents and children receive nutrition education, focusing on key messages about consuming fruit and vegetables and preparing healthy foods. Meal and snack times are used to encourage them to explore new foods, build self-help skills and cooperative behaviours. Children learn to make simple snacks..
How and why does this intervention work?	ECEAP was evaluated via a 12-year longitudinal study by the Northwest Regional Educational Laboratory. A total of 1358 children were in the initial treatment group, drawn from three consecutive years of the program, starting in 1988. The comparison group consisted of 322 children who were eligible but did not take part. By the ninth year, 57% of participants were now above the poverty line, a tenfold increase from 5% at baseline. Over the same period, the proportion above the poverty line in the comparison group increased 44% (from 47% to 68%). Some caution is needed in interpreting these results due to large pre-existing differences between groups and high attrition (only 55% of the treatment group and 65% of the comparison group were still in the study at 12 years). ECEAP is listed as 'promising' by the Promising Practices Network for the indicator 'children living above the poverty level'.
On what population does this intervention work best?	Children aged 3-5 years (priority is given to those aged 4 at enrolment) whose families are at or below 110% of the poverty line. Ten percent of places are available for children from 'over income' families who are at risk of school failure because of developmental delay or other reasons. The program has been running in Washington State, US, for more than 20 years. About half the participants are from CALD backgrounds.
Where will this intervention work best?	The program is delivered (free of charge) in a preschool setting, in partnership with local organisations. For example, links are built with local schools (to support transition to school), health providers (who visit ECEAP sites to perform health checks and provide services) and Indigenous organisations. Sites may also be established at community colleges that offer basic or continuing education for parents, and may have volunteers who work in ECEAP classrooms.
What is required to implement this intervention?	Program documents are available to download (see website below). ECEAP is supported by a state office. Places for eligible children were funded for 2008-09 at US\$6661 each.
Resources and contact information	http://www.del.wa.gov/publications/eceap/Default.aspx http://www.del.wa.gov/about/contact.aspx ECEAP_Admin@cted.wa.gov
References	Children's Services Unit, 2006; Statewide ECEAP Data 2007-08: http://www.del.wa.gov/publications/eceap/docs/ECEAP_Data_2007-08.pdf http://www.promisingpractices.net/program.asp?programid=96