



Australian Centre for  
Child Protection

# **IMPROVING SERVICE RESPONSES TO VULNERABLE FAMILIES DURING PREGNANCY AND INFANCY**

A REPORT TO THE AUSTRALIAN GOVERNMENT  
DEPARTMENT OF SOCIAL SERVICES

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## EXECUTIVE SUMMARY

The Third Action Plan of the National Framework for Protecting Australia's children (the Plan), endorsed by the Minister for Social Services and responsible state and territory Ministers in 2015, places strong emphasis on prevention and early intervention. At Action 1.2 of the Plan, governments state their intention 'to improve access to evidence based family support services especially for expectant, new and vulnerable parents where alcohol and other drug, mental health and domestic and family violence issues occur'. Particular emphasis is placed on the first 1000 days of a child's life. This report was commissioned by the Australian Government Department of Social Services (DSS) to identify effective strategies from the literature for working with these families and recommend how such strategies may be utilised in the Australian context.

In this report we provide a series of evidence summaries, developed from a rapid review of the literature, that identify a range of strategies (i.e., home visitation programs, behavioural, psychosocial and other programs, collaborative approaches, workforce development and screening and assessment processes) to address the needs of expectant parents, their babies and families in which young children may be exposed to violence and other forms of risk. Consultation with an expert panel and the Strategy 1 and Aboriginal and Torres Strait Islander Working Groups provides implications for development of these strategies in the Australian context.

The programs and strategies identified in the literature that reported some success in addressing the needs of vulnerable expectant and young families are presented in Table 1. A wide range of desired outcomes were targeted. Some success was reported in areas such as domestic violence, illicit drug use, parenting, child development, and service use. The common elements shared among programs and strategies with successful outcomes included: screening for specific risk factors; targeting adolescent mothers; individualised interventions; parenting interventions; child development interventions; use of program and service delivery manuals and protocols that have a clearly articulated program logic; fidelity monitoring; service referral/linkage; periodic assessments of family/child outcomes; trained qualified staff; regular supervision of staff; research informed curricula; performance indicators; and home visitors who reflect the ethnic and cultural background of families.

Among the essential elements of strategies specific to vulnerable Aboriginal expectant and young families identified in the literature were expert cultural guidance that included Elders from language groups local to the area; Aboriginal worker positions in a leadership role; intercultural partnerships and skill exchange; locally and culturally appropriate assessment tools; Aboriginal Family Partnership Workers and flexibility in the location of visits; a clear, documented two-way practice model; service delivery congruent with practice values and ethos; and intensive cultural orientation for new practitioners.

It is evident from the literature that vulnerable young and/or expectant families with multiple and complex needs require multipronged interventions that include all of the elements listed in Table 1.

Outcomes of interest for the individual programs and strategies and principal findings are summarised in greater detail in the sections that follow.

**Table 1.** Summary of program and service delivery elements that may contribute to successful outcomes

Strategy	Elements		Successful targeted outcome areas	
<b>Home visiting</b>	<ul style="list-style-type: none"> <li>• Specific strategies to address IPV</li> <li>• Delivered prenatally</li> <li>• High number of visits</li> <li>• Target family retention</li> <li>• Address specific issues</li> <li>• Parenting interventions</li> <li>• Child development interventions</li> <li>• Use of manuals and protocols that have a clearly articulated programme logic</li> <li>• Linking families with services matched to need</li> <li>• Regular supervision and support of home visitors</li> </ul>	<ul style="list-style-type: none"> <li>• Staff training</li> <li>• Minimum skill set matched to programme outcomes</li> <li>• Research informed curricula</li> <li>• Fidelity monitoring</li> <li>• Periodic assessments of family/child outcomes</li> <li>• Measurable child outcome performance indicators</li> <li>• Home visitors' reflect the ethnic and cultural background of families</li> <li>• Target adolescent mothers</li> </ul>	<ul style="list-style-type: none"> <li>• Partner violence</li> <li>• Child development and behaviour</li> <li>• Child physical abuse</li> <li>• Neglect</li> </ul>	<ul style="list-style-type: none"> <li>• Parenting</li> <li>• Maternal stress</li> <li>• Service use</li> <li>• Illicit drug use</li> </ul>
<b>Behavioural/ psychosocial programs</b>	<ul style="list-style-type: none"> <li>• Target a specific issue</li> <li>• Engage trained or qualified staff</li> <li>• Individualised or patient-centred counselling or therapy</li> <li>• Interactive program delivery</li> <li>• Risk assessment or screening for program eligibility</li> <li>• Delivered individually, group or community setting</li> </ul>	<ul style="list-style-type: none"> <li>• Program manual</li> <li>• Educational content</li> <li>• Referrals to other services and organisations</li> <li>• Delivered over a number of sessions</li> <li>• Run over the course of a month or more</li> <li>• Based on evidence from the literature</li> </ul>	<ul style="list-style-type: none"> <li>• Infant attachment security in high-risk families</li> <li>• IPV in the second or third trimester</li> <li>• Alcohol consumption</li> <li>• General and social self-efficacy</li> <li>• Parent-child relationship/ attachment</li> <li>• Parenting stress</li> <li>• Intergenerational family conflict</li> <li>• Family relationships</li> </ul>	<ul style="list-style-type: none"> <li>• Tangible social support</li> <li>• Maternal reflective functioning</li> <li>• Maternal caregiving behaviour</li> <li>• Infants remaining safely at home in the care of their parent/s</li> <li>• Development and maintenance of appropriate community connections</li> <li>• Housing, financial, and key relationship stability</li> </ul>
<b>Substance abuse programs</b>	<ul style="list-style-type: none"> <li>• Ongoing counselling</li> <li>• Individualised care plans</li> <li>• Risk assessment or screening</li> </ul>	<ul style="list-style-type: none"> <li>• Additional supports such as childcare or assistance contacting services</li> </ul>	<ul style="list-style-type: none"> <li>• Higher birth weights</li> <li>• Larger head circumferences;</li> <li>• Negative toxicology screens</li> </ul>	<ul style="list-style-type: none"> <li>• Prenatal visits</li> <li>• Premature birth</li> </ul>
<b>Domestic violence programs</b>	<ul style="list-style-type: none"> <li>• Focused on a specific issue</li> <li>• Trained or qualified staff</li> <li>• Therapeutic component</li> <li>• Delivered individually</li> </ul>	<ul style="list-style-type: none"> <li>• Risk assessment or screening</li> <li>• Individualised safety or care plans</li> <li>• Referrals to other services and organisations as required</li> </ul>	<ul style="list-style-type: none"> <li>• Domestic violence at any point during pregnancy and/or in the postnatal period</li> <li>• Reduced psychological abuse</li> <li>• Minor physical violence</li> <li>• Safety behaviours</li> </ul>	<ul style="list-style-type: none"> <li>• Assisted ventilation, low birth weight, and preterm delivery</li> <li>• Use of services</li> <li>• Maternal drug use early in pregnancy</li> <li>• Time in foster care</li> </ul>
<b>Collaborative approaches</b>	<ul style="list-style-type: none"> <li>• Ongoing case management</li> <li>• On-call or urgent care</li> <li>• Ongoing counselling</li> <li>• Referrals and community linkages</li> </ul>	<ul style="list-style-type: none"> <li>• Family or person-centred</li> <li>• Educational content</li> </ul>	<ul style="list-style-type: none"> <li>• Compliance rates with prenatal visits</li> <li>• Maternal and neonatal outcomes</li> </ul>	<ul style="list-style-type: none"> <li>• High discharge rates of infants in the care of their mothers</li> </ul>

**Table 1.** Summary of program and service delivery elements that may contribute to successful outcomes

Strategy	Elements		Successful targeted outcome areas
<b>Workforce development</b>	<ul style="list-style-type: none"> <li>Targeted a specific issue</li> <li>Participant toolkit, manual, workbook, practical resources</li> </ul>	<ul style="list-style-type: none"> <li>Evidence-based model or resources</li> <li>Interactive training</li> <li>Cultural component</li> </ul>	<ul style="list-style-type: none"> <li>Confidence in screening, intent to screen, and actual screening.</li> <li>Confidence and skills to manage women at risk for alcohol-exposed pregnancy.</li> <li>Documentation of possible physical child abuse identification and care for women with psychosocial issues (i.e. Domestic violence, past sexual abuse).</li> </ul>
<b>Aboriginal children and families</b>	<ul style="list-style-type: none"> <li>Expert cultural guidance that includes elders from language groups local to the area</li> <li>Aboriginal Maternal and Infant Care (AMIC) worker position in a leadership role; trained in antenatal, and postnatal care, as appropriate</li> <li>Intercultural partnerships and skill exchange</li> <li>Commitment to continuity of care and primary health care principles</li> <li>Management group for program support;</li> <li>Aboriginal Family Partnership Workers and flexibility in the location of visits</li> <li>Services matched to child and family needs;</li> <li>Staff develop trusting relationships and partnerships with family members</li> <li>Service provision includes a mix of practical, educational, and therapeutic supports for children and families</li> <li>Families participate in decision making and case planning</li> <li>Services delivered in a culturally competent and respectful manner</li> </ul>	<ul style="list-style-type: none"> <li>Comprehensive initial and ongoing assessments at the individual, family, and structural levels that are open-minded and non-judgemental</li> <li>Incorporation of parental goals and perspectives in interventions, case planning and goal</li> <li>Specific and well-communicated goals that instil positivity and commitment in parents</li> <li>Delivery of services within a case management framework</li> <li>Locally and culturally appropriate assessment tools</li> <li>Use of a wide range of assessments (targeted and specialist), referrals and other services</li> <li>Services have good working relationships at all levels with statutory agencies</li> <li>Adequate organisational support, low caseloads, and “hands-on” case work to allow enhanced service delivery</li> <li>Provision of a range of practical, educational, therapeutic, and advocacy supports</li> <li>A clear, documented two-way practice model</li> <li>Service delivery congruent with practice values and ethos</li> <li>Intensive cultural orientation for new practitioner</li> </ul>	<ul style="list-style-type: none"> <li>Maternal confidence and competence</li> <li>Mother-child attachment and interaction</li> <li>Confidence and ability to enact positive change</li> <li>Manage child behaviour and problems getting them to attend school regularly</li> <li>Leave violent relationships</li> <li>Ask for help</li> <li>Manage household budget and establish daily routines.</li> <li>Better family relationships and more communication within the family</li> <li>Getting the statutory agency “out of their life” and having children returned to their care.</li> </ul>

## PROGRAMS AND STRATEGIES

### HOME VISITATION PROGRAMS

There is some evidence to suggest that home visiting can enhance child health and developmental outcomes and may assist in the prevention of child maltreatment when the program has a clear logic and theory of change as articulated by Segal, Opie, & Dalziel (2012). There is also some evidence that when the objective is to reduce intimate partner violence (IPV), Home Visiting programs that include specific strategies to address IPV have been successful. Two programs focused specifically on interventions to prevent IPV (MOSAIC and Voorzong) and these showed a significant reduction in IPV in the short term. In addition, the success of a home visiting program may be increased when delivered prenatally, the dose of visits are high, adequate training and support are provided to paraprofessionals who deliver the program and family retention is targeted. Home visiting has had some success in addressing prenatal illicit drug use (Family Spirit; Segal et al., 2012). However, there is little evidence to date to suggest that home visiting programs are viable for mothers with alcohol problems. No single program has been shown to be successful in addressing all issues. A summary of the areas in which home visiting programs have been reported to have had some level of success is provided in Box 1.

#### Box 1. Areas in which home visiting programs have had some level of success

- |   |  |
|---|--|
| <ul style="list-style-type: none"><li>• Partner violence</li><li>• Child development and behaviour</li><li>• Child physical abuse</li><li>• Neglect</li></ul> | <ul style="list-style-type: none"><li>• Parenting</li><li>• Maternal stress</li><li>• Service use</li><li>• Illicit drug use</li></ul> |
|---|--|

Attention to certain program and service delivery components may contribute to successful Home visiting outcomes (see Box 2).

#### Box 2. Program and service delivery components of home visiting programs that may contribute to successful outcomes

- |  |   |
|--|---|
| <ul style="list-style-type: none"><li>• Specific strategies to address IPV</li><li>• Delivered prenatally</li><li>• High number of visits</li><li>• Target family retention</li><li>• Address specific issues</li><li>• Parenting interventions</li><li>• Child development interventions</li><li>• Use of manuals and protocols that have a clearly articulated programme logic</li><li>• Linking families with services matched to need</li><li>• Regular supervision and support of home visitors</li></ul> | <ul style="list-style-type: none"><li>• Staff training, minimum skill set matched to programme outcomes</li><li>• Research informed curricula</li><li>• Fidelity monitoring</li><li>• Periodic assessments of family/child outcomes</li><li>• Measurable child outcome performance indicators</li><li>• Home visitors' reflect the ethnic and cultural background of families</li><li>• Target adolescent mothers</li></ul> |
|--|---|

## BEHAVIOURAL/ PSYCHOSOCIAL PROGRAMS

Limited evidence exists for behavioural or psychosocial programs designed specifically for families during pregnancy or infancy ( $\leq 3$  years) at risk of violence or other forms of risk. Some support was found for behavioural and psychosocial programs reducing intimate partner violence during pregnancy and improving maternal mental health but these outcomes were not sustained. Promising support was found for reduced alcohol consumption during pregnancy but it is not known whether this was sustained postpartum or for any subsequent pregnancies. Only one program (FAST babies) specifically mentioned involving fathers and while a diverse range of outcomes were examined for each program, very few studies examined child-focused outcomes. A summary of the areas in which behavioural/psychosocial programs have had some level of success are outlined in Box 3.

### Box 3. Areas in which behavioural/psychosocial programs have had some level of success

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• Infant attachment security in high-risk families</li> <li>• IPV in the second or third trimester</li> <li>• Alcohol consumption</li> <li>• General and social self-efficacy</li> <li>• Parent-child relationship/attachment</li> <li>• Parenting stress</li> <li>• Intergenerational family conflict</li> <li>• Overall family relationships</li> </ul> | <ul style="list-style-type: none"> <li>• Tangible and total social support</li> <li>• Maternal reflective functioning</li> <li>• Maternal caregiving behaviour</li> <li>• Infants remaining safely at home in the care of their parent/s</li> <li>• Development and maintenance of appropriate community connections</li> <li>• Housing, financial, and key relationship stability</li> </ul> |
|--|---|

Attention to certain program and service delivery components may contribute to successful outcomes of behavioural/psychosocial programs (see Box 4).

### Box 4. Program and service delivery components of behavioural/psychosocial programs that may contribute to successful outcomes

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• Target a specific issue</li> <li>• Engage trained or qualified staff</li> <li>• Individualised or patient-centred counselling or therapy</li> <li>• Interactive program delivery</li> <li>• Risk assessment or screening for program eligibility</li> <li>• Delivered individually, group or community setting</li> </ul> | <ul style="list-style-type: none"> <li>• Program manual</li> <li>• Educational content</li> <li>• Referrals to other services and organisations</li> <li>• Incentive for participation such as money or travel vouchers</li> <li>• Delivered over a number of sessions</li> <li>• Run over the course of a month or more</li> <li>• Based on evidence from the literature</li> </ul> |
|--|--|

## OTHER PROGRAMS

### Substance abuse programs

Findings from a small number of studies of programs that integrate on-site pregnancy, parenting, or child-related services with substance use treatment within a single agency/treatment program reported that among mothers who attended integrated programs, infants who resided with their mothers had higher birth weights than those who lived separate from their mothers. It was also found that women in integrated programs, when compared with women who participated in non-integrated programs, attended more prenatal visits and their infants were less likely to be born prematurely. It is not known if these outcomes lead to reduced risk to children after birth. Further rigorous evaluations of comprehensive integrated programs that address the birth outcome and ongoing risk factors to infants of substance abusing women is needed. Areas in which substance abuse programs have had some success are provided in Box 5.

#### Box 5. Areas in which substance abuse programs have had some level of success

- Higher birth weights
- Larger head circumferences
- Negative toxicology screens
- Prenatal visits
- Premature birth

Attention to certain substance abuse program and service delivery components may contribute to successful outcomes (see Box 6).

#### Box 6. Program and service delivery components of substance abuse programs that may contribute to successful outcomes

- Ongoing counselling
- Individualised care plans
- Risk assessment or screening
- Additional supports such as childcare or assistance contacting services

### Domestic violence programs

A review of domestic violence programs concluded that it was not possible to identify any one intervention that worked better than any other due to the serious lack of consistency in reported outcomes, the limited number of outcomes reported, and the varied way in which outcomes were measured (Jahanfar, Howard, & Medley, 2014). None of the programs reviewed targeted male perpetrators of violence toward their pregnant partners. Areas in which domestic violence programs have had some success are provided in Box 7.

#### Box 7. Areas in which domestic violence programs have had some level of success

- Domestic violence at any point during pregnancy and/or in the postnatal period
- Psychological abuse
- Minor physical violence

Attention to certain program and service delivery components may contribute to successful domestic violence outcomes (see Box 8).

**Box 8.** Program and service delivery components of domestic violence programs that may contribute to successful outcomes

- |                               |   |
|-------------------------------|---|
| • Focused on a specific issue | • Risk assessment or screening                              |
| • Trained or qualified staff  | • Individualised safety or care plans                       |
| • Therapeutic component       | • Referrals to other services and organisations as required |
| • Delivered individually      |   |

**COLLABORATIVE APPROACHES**

All five studies reviewed reported that interventions using collaborative approaches resulted in positive outcomes for at-risk populations. Evaluations of both Early Start and T-CUP concluded that prenatal care integrated with substance abuse treatment can benefit newborns and their mothers. An evaluation of the Safe Mom, Safe Baby program reported that of the abused pregnant or newly delivered women who completed the SMSB program during the study period more than half progressed toward action and maintenance of violence-free relationships. Findings from an evaluation of Starting Early Starting Smart (SESS) indicated that SESS caregiver participants were 4.6 times more likely to receive parenting services, 2.1 times more likely to receive outpatient mental health treatment, and 1.8 times more likely to receive drug treatment, compared with comparison group participants (Morrow et al., 2010). However, the outcomes for parents and infants who participated in these services is not known.

Overall, findings show that collaborative approaches to interventions can result in positive outcomes for at-risk pregnant women and caregivers, and infants entering foster care; however, as a result of the limited number of studies included in this review, no strong conclusions about intervention effectiveness can be drawn. A summary of the areas in which collaborative approaches have been reported to have had some level of success is provided in Box 9.

**Box 9.** Areas in which collaborative approaches have had some level of success

- |  |  |
|--|--|
| • Compliance rates with prenatal visits                        | • Safety behaviours  |
| • Maternal and neonatal outcomes                               | • Use of services  |
| • High discharge rates of infants in the care of their mothers | • Placental abruption, preterm labour, and stillbirth          |
| • Maternal drug use early in pregnancy                         | • Assisted ventilation, low birth weight, and preterm delivery |
| • Time in foster care  |  |
| • Domestic violence  |  |

Attention to certain program and service delivery components may contribute to successful collaborative outcomes (see Box 10).

**Box 10.** Program and service delivery components of collaborative approaches that may contribute to successful outcomes

- |                           |                                    |
|---------------------------|------------------------------------|
| • Ongoing case management | • Referrals and community linkages |
| • On-call or urgent care  | • Family or person-centred         |
| • Ongoing counselling     | • Educational content              |

## WORKFORCE DEVELOPMENT

The evidence reviewed generally supports the effectiveness of educational interventions for health and social service providers in improving screening and confidence in working with high risk families. Areas in which workforce development programs have had some success are provided in Box 11.

<b>Box 11. Areas in which workforce development programs have had some level of success</b>	
<ul style="list-style-type: none"><li>• Confidence in screening, intent to screen, and actual screening</li><li>• Identification and care for women with psychosocial issues (e.g. domestic violence, past sexual abuse)</li></ul>	<ul style="list-style-type: none"><li>• Confidence and skills to manage women at risk for alcohol-exposed pregnancy</li><li>• Documentation of possible physical child abuse</li></ul>

Attention to certain program and service delivery components may contribute to successful workforce development outcomes (see Box 12).

<b>Box 12. Program and service delivery components of workforce development programs that may contribute to successful outcomes</b>	
<ul style="list-style-type: none"><li>• Targeted a specific issue</li><li>• Evidence-based model or resources</li><li>• Interactive training</li></ul>	<ul style="list-style-type: none"><li>• Cultural component</li><li>• Participant toolkit, manual, workbook, practical resources</li></ul>

## SCREENING AND ASSESSMENT

There is insufficient evidence of quality to determine if screening and assessment tools administered independently can be useful strategies for working with vulnerable families during pregnancy and infancy. There is some evidence to suggest that universal screening improves the identification of AOD in pregnancy. However, screening alone is likely to be ineffective in improving outcomes for families during pregnancy and infancy ( $\leq 3$  years) at risk of violence or other forms of risk without being followed by an evidence-based intervention.

## PROGRAMS FOR ABORIGINAL AND TORRES STRAIT ISLANDER CHILDREN AND FAMILIES

The working group highlighted the lack of research regarding specific programs and or outcomes for Australian Aboriginal families during pregnancy and infancy. This lack of research does not necessarily indicate a lack of promising strategies targeting vulnerable Aboriginal families. Following the Working Group consultation, the researchers examined a small number of programs specifically targeting Aboriginal families identified in the consultation, including: the Australian Nurse-Family Partnership Program (ANFPP; Ernst & Young, 2012); Intensive Family Support Services (IFSS; Tilbury, 2015); and Regional Family and Anangu Bibi Birthing Programs (RFBP/ABBP; Stamp et al., 2007; 2010).

Whilst all strategies have been subject to some level of evaluation, their research designs did not meet the criteria for inclusion in the rapid literature review. Positive outcomes that have been reported were in the following areas:

- Maternal confidence and competence
- Mother-child attachment and interaction
- Confidence and ability to enact positive change
- Managing child behaviour
- Leaving violent relationships
- Asking for help
- Management of the household budget and establishment of daily routines
- Better family relationships and more communication within the family
- Getting the statutory agency “out of their life” and having children returned to their care

## STRATEGY DEVELOPMENT

There was evidence to show that IPV may be reduced when targeted specifically through home visiting programs (MOSAIC, Voorzong) and through collaborative approaches (Safe Mom, Safe Baby program). However, it is important to note that no programs included fathers of infants or the family unit as a whole.

There is some evidence to suggest that home visiting programs are viable for mothers with illicit drug problems but not for those with alcohol problems, integrated substance abuse programs (Early Start, T-CUP) may reduce illicit drug use during pregnancy and behavioural programs may reduce alcohol use during pregnancy.

No single strategy was identified that was clearly successful in achieving all of its desired outcomes. One reason for this is that families with multiple and complex needs require a combination of strategies (e.g. home visiting, behavioural/psychosocial programs, substance abuse and domestic violence programs and workforce development) underpinned by collaborative service delivery.

This literature review has highlighted elements of programs and strategies that may potentially contribute to successful outcomes (see Table 1). Primary among them is that *successful programs target specific outcomes and include:*

- an explicit objective;
- a clear target population;
- a clear theory of change;
- program components implemented as intended; and
- a clear alignment between the preceding four elements

(Segal et al, 2012)

When considering existing or new interventions to address child maltreatment risk factors for expectant parents, their babies and families with very young children in the Australian context it will also be important to ensure that:

- Program outcome objectives are aligned to the specific pre- and post-natal needs of high risk families – the literature shows that these are two discrete points for intervention that require different strategies
- Issues associated with unborn child high risk birth alerts (i.e., use of high risk birth alerts as a surveillance and monitoring tool) and unborn child notifications (i.e., submission of an unborn

child notification to a child protection service viewed as the end of a practitioner's responsibility to the family; prioritising statutory responses to born children who may at risk of immediate harm above unborn child notifications; prenatal child protection interventions delivered by statutory agencies are voluntary and require the pregnant woman's consent)

- The multiple and complex needs associated with high and at-risk families are addressed in order to improve their outcomes.

It was highlighted by expert panel members that some strategies may exclude families who are most at risk as they do not have the resources to address their complex needs. The research summaries highlight that resource intensive approaches such as home visiting and collaborative approaches appear to be the most promising interventions among those reviewed to address the needs of at-risk pregnant women, women with young children and infants entering foster care. However, it is not clear if high risk families with complex needs were included in the evaluations of these programs. A recent review of the evidence for the effectiveness of multi-disciplinary child abuse teams in responding to child abuse found that physically and sexually abused children and their families were more likely to receive mental health and support services, be referred to medical services and that the teams were more likely to have higher rates of child protection substantiations (Herbert & Bromfield, 2017) than families receiving an unco-ordinated agency response. This research underpins the view that complex needs families require a multifaceted response that is collaborative rather than fragmented.

There are many programs currently in operation in Australia that have not been evaluated and therefore were not included in this research review. It may be that evaluation of these existing strategies would be more beneficial in determining what works for supporting and improving outcomes of families during pregnancy and infancy in preference to adding untested programs or intervention strategies into the child and family welfare setting.

There was very little information available in the research about engaging and retaining high risk families in programs. This is an important component of service delivery that requires focussed attention. Program attrition rates in the majority of studies examined were high.

Importantly, responses to address the complex lives of at risk families require interventions that are holistic and integrated, and that wrap around the family and address their needs in all of life's domains. This requires organisations working in different service sectors (e.g. mental health, education, and child and family) to effectively collaborate to provide integrated services. Such a model of service delivery will require funding models that facilitate this approach.

# 1 BACKGROUND

The Australian Centre for Child Protection was funded by the Australian Government Department of Social Services (DSS) to examine effective strategies for working with expectant parents, their babies, and families in which young children may be exposed to violence and other forms of risk.

This project was commissioned as part of the Third Three-year Action Plan of the National Framework for Protecting Australia's Children, specifically relating to action area 1.2 of Strategy 1 (focus: early intervention in the early years, particularly the first 1000 days of a child's life) which aims to "improve access to evidence based family support services, especially for expectant, new and vulnerable parents where alcohol and other drug, mental health, and domestic and family violence issues combine" (DSS, 2015, p 8). The aim of this project was to identify effective strategies from the literature for working with these families and recommend how such strategies may be utilised in the Australian context.

The project comprised four phases:

- 1) A rapid review of the literature and development of a series of evidence summaries;
- 2) Consultation with an expert panel;
- 3) Consultation with the Strategy 1 and Aboriginal and Torres Strait Islander Working Groups;  
and
- 4) Strategy development

The current report details the findings of all phases of this project, with the first section detailing the background to the project. The second section outlines the processes of each phase of the project as well as the literature search methodology. The third section comprises four evidence summaries focusing on programmatic responses, collaborative approaches, workforce development, and screening and assessment strategies. Following this, the fourth section details the context for interpreting the evidence summaries as identified through the expert panel consultation, and the fifth section outlines implications for strategy development in the Australian context.

## 2 METHODOLOGY

In phase 1, a rapid review of the literature was conducted to identify a range of strategies (e.g. workforce development, programmatic responses, collaborative approaches, and place-based responses) that can effectively address the needs of expectant parents, their babies and families in which young children may be exposed to violence and other forms of risk. Details of the literature search strategy are outlined below. The findings of this review are presented in the next section as a series of evidence summaries focusing on programmatic responses, collaborative approaches, workforce development, and screening and assessment strategies.

Following the development of the evidence summaries, the Australian Centre for Child Protection consulted with an expert panel (phase 2) comprising 14 members from a variety of backgrounds, including policy-makers, practitioners, and researchers with expertise in the fields of maternal and infant care, fathering, paediatrics, early childhood, child development, cultural expertise, family violence, mental health, and drug and alcohol misuse (see Appendix 1 for the list of expert panel members). The aim of this consultation was to contextualise the evidence summaries and strategies for the Australian policy and practice context. Information from this consultation was synthesised and incorporated into the evidence summaries in preparation for phase 3.

In phase 3, a teleconference was conducted with members of DSS and the Strategy 1 and Aboriginal and Torres Strait Islander Working Groups. The aim of this consultation was to gain the insights of the Working Groups regarding the enhanced evidence summaries and how the findings can be translated into policy.

In phase 4, further critical analysis of potential strategies to support work with vulnerable families in pregnancy and infancy, including families exposed to family violence was conducted. Aspects of the critical analysis included:

- Alignment with the National Framework objectives, best practice and service/policy intent;
- Implications for policy and practice reform in jurisdictions;
- Ability for replication and sustainability of strategies across contexts and jurisdictions; and
- Possible future directions including opportunities/options for service and policy enhancement or expansion of models.

The aim of this phase was to enhance the evidence summaries to fit within the Australian context and determine how these findings can be translated into policy.

### 2.1 LITERATURE SEARCH STRATEGY

This rapid literature review employed a systematic plus search strategy in which both peer-reviewed and grey (non-peer reviewed) literature were examined. The initial scope for the review was very broad and included both qualitative and quantitative research, evaluation projects and Churchill Fellowship reports. Initially, to be included in the review strategies had to:

- (a) have been the subject of evaluation or theory development; and
- (b) address the needs of expectant parents, their babies and families in which children may be exposed to violence and other forms of risk.

Studies were flagged as relevant if they included families with children under six years of age but not necessarily exclusively.

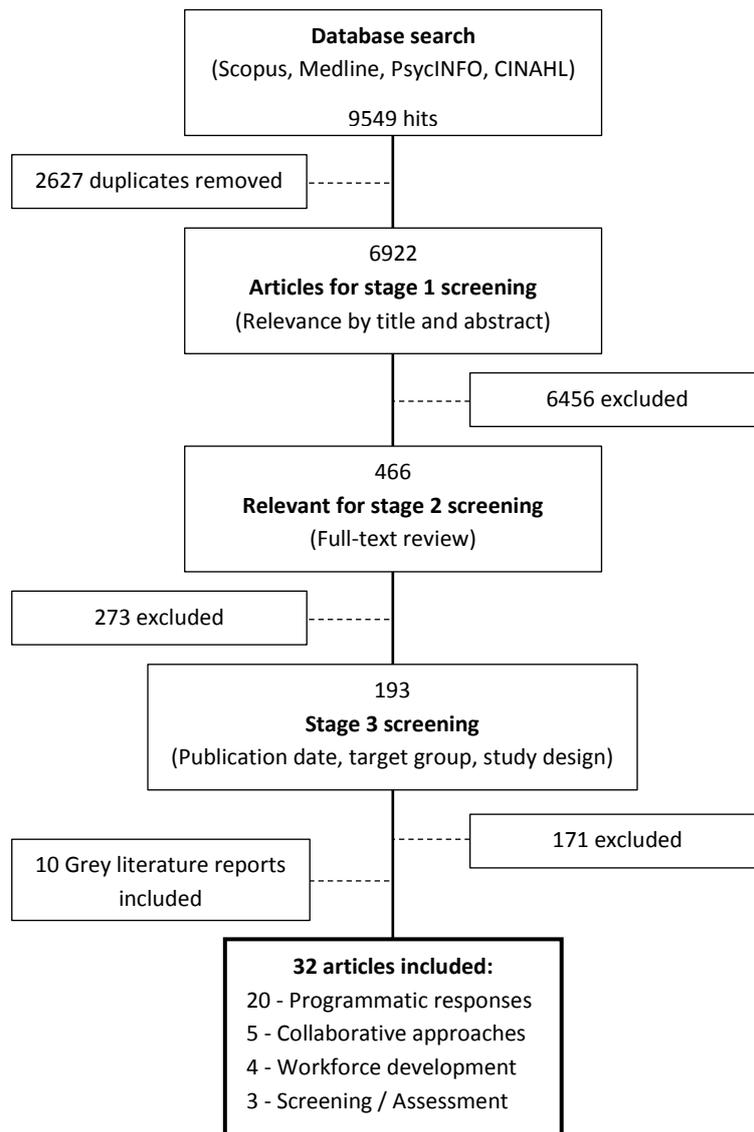
The following search terms were used: (prenatal OR antenatal OR unborn OR f\*etus OR pregnant OR expectant OR mother OR parent OR father OR toddler OR infant OR infancy OR young OR baby OR babies OR neonat\* OR child OR p\*ediatric) AND (vulnerable OR "at risk" OR "high risk") AND (violence OR "spous\* abuse" OR abuse OR neglect OR maltreatment OR harm OR substance OR alcohol OR trauma OR fasd OR "f\*etal alcohol spectrum disorder" OR homeless\* OR "mental illness" OR "mental health" OR oohc OR "out of home care") AND (training OR program\* OR response OR policy OR strategy OR intervention OR review) AND (evaluat\*).

Peer-reviewed literature was identified through title, abstract, key word, and descriptive searches of Scopus, Medline, PsycINFO, and CINAHL academic databases and grey literature was identified through target Google searches using key search terms from those listed above. The specific search format for each database is available on request. The database search yielded 9549 'hits' which were exported to Endnote before 2627 duplicates were removed. Screening for relevance by title and abstract identified 466 for inclusion in the full-text review. 273 articles were excluded in the full-text review, leaving 193 articles for inclusion. Due to time and resource restrictions, further inclusion criteria were developed and a third level of screening undertaken.

Studies had to have utilised one of the following research designs: randomised controlled trials (RCTs), randomised trials, non-randomised comparison studies, cohort studies, single-group pre-post-test evaluations, studies employing both qualitative and quantitative strategies with at least one of the previously mentioned designs; or be a systematic review or meta-analyses focusing on evaluations with these designs. These study designs were chosen for their methodological rigor which produces the best quality evidence.

Studies were excluded if they were published before 2006 based on the assumption that strategies developed over a decade ago are no longer relevant to the current child protection context. Systematic reviews and meta-analyses published after 2005 were included in this rapid review and these included studies published prior to 2006 (see Table A5, Appendix 3). Additionally, studies must have exclusively targeted families during pregnancy or with children up to the age of three (not a broader target group that includes this population). This age range was chosen as age three years is the common cut-off for defining infancy based on child developmental needs.

As a result of this third level of screening, an additional 171 articles were excluded with 22 remaining for inclusion. Ten reports identified through the grey literature search met the inclusion criteria and were included in the review. In all, 32 peer- and non-peer-reviewed studies were included in this review. These included systematic reviews, meta-analyses and individual studies. The rapid review methodology undertaken for this report determined that the primary studies included in the systematic reviews and meta-analyses were not sourced and reviewed as part of the review process. However, the primary studies of programs identified as having some success by the authors of the reviews were sourced and examined for program components that may have contributed to this success. This screening process is presented in *Figure 1* below. A summary of the included studies, the strategies evaluated, and the effect on parent and child outcomes can be found in Tables A1, A2, and A3 (Appendix 2).



**Figure 1.** Literature search screening process

## 3 EVIDENCE SUMMARIES

### 3.1 PROGRAMMATIC RESPONSES

#### 3.1.1 WHAT IS THE AIM OF THIS EVIDENCE SUMMARY?

This evidence summary consolidates the findings from 20 studies examining programmatic responses for working with vulnerable families identified in the literature review. These are reported below in sections according to the type of programmatic response: home visitation programs, programs focusing on behavioural or psychosocial needs, and two other programs addressing domestic violence and substance abuse. Key information about these studies, the strategies evaluated, and the effect on parent and child outcomes can be found in Tables A1 to A4 (Appendix 2).

#### 3.1.2 HOME VISITATION PROGRAMS

Four studies and seven reviews examining programmatic responses using home visitation to address the needs of vulnerable families were identified in the literature.

##### Strategy characteristics

All programs targeted high risk women, and most were delivered postpartum for families with children aged (0-3 years). Programs were delivered by professionals (e.g. nurses and social workers), paraprofessionals and lay people. There was great diversity in the intensity and length of program delivery. Most programs were delivered in the United States (US). Programs targeted a wide range of outcomes primarily associated with child health, development and safety, and parenting competence. Few targeted specific risk factors such as drug and alcohol abuse and domestic violence.

##### Study characteristics

Of the reviews identified, six used a systematic search strategy to identify and review home visiting programs and initiatives designed for high risk families that have been evaluated using either a randomised control, quasi-experimental with a control or comparison group, or pre and post program outcome evaluation design (Avellar & Supplee, 2013; Higgins, Bromfield, Richardson, & Higgins, 2006; Peacock, Konrad, Watson, Nickel, & Muhajarine, 2013; Prossman, Lo Fo Wong, van der Wouden, & Lagro-Janssen, 2015; Segal et al., 2012; Turnbull & Osborn, 2012). One review rigorously evaluated home visiting programs (McDonald, Moore, & Goldfeld, 2012) but it was not clear if a systematic search strategy was utilised. The aim of the review was to review effective programs to determine potential components of an Australian home visiting program and is therefore included in this summary.

Four studies examining previously reviewed programs or new programs published since the latest systematic review was undertaken were identified (Barlow et al., 2013; 2015a; Paradis, Sandler, Manly, & Valentine, 2013; Vaithianathan, Wilson, Maloney, & Baird, 2016).

##### Evidence of effectiveness

Three systematic reviews reported on the evidence for home visiting in relation to child outcomes. The common areas for intervention across the programs were parenting competence, child development and child maltreatment (addressed either explicitly or indirectly through parenting skills

and welfare involvement). Higgins et al. (2006) reviewed the results of 14 studies including four meta-analyses reported in the literature from 1990 onward. The programs included in the systematic review were: Community Child Health Nurse home visiting program for newborns (Australia); The Comprehensive Child Development Program (US); The Cottage Community Care Pilot Project (Australia); The Head Start program (US); Healthy Families America (US); The Healthy Start Program (US); The Home Instruction Program for Preschool Youngsters (US); The Nurse Home Visitation Program (US); Parents as Teachers (US); and the Teen Parents and Babies Program (US).

Avellar and Supplee (2013) reviewed the results of 12 home visiting programs targeting maltreatment published in the literature up until 2012. The review included 3 programs previously reviewed by Higgins et al. (2006) (Healthy Families America – Healthy Families Alaska and Healthy Families New York, The Home Instruction Program for Preschool Youngsters, Parents as Teachers) and an additional 9 programs that included ChildFIRST (US); Early Head Start (US); Early Intervention Program for Adolescent Mothers (US); Early Start (New Zealand); Family Check-Up (US); Healthy Steps (US); Nurse-Family Partnership (US); Oklahoma’s Community-Based Family Resource and Support Program (US); and Play and Learning Strategies for Infants (US). Details of the numbers of participants and the age range of eligible children were not provided in the review.

The reviewers of both studies found that while most of the evaluations reported some degree of effectiveness in reducing the incidence of child maltreatment, enhancing parenting knowledge and skills, improving child cognitive and social development, and increasing parent links to services, no one program was successful in achieving all of its goals. Further, in most cases there were a larger number of non-significant findings than there were significant ones. Few of the studies used Randomised Control Trial (RCT), the most reliable evidence of effectiveness, and the quality and relevance of the outcome measures varied widely across studies undermining the reliability of the evidence base. Overall the Home Visiting programs had most success in enhancing child health and developmental outcomes. While some programs may be effective in reducing risk factors for child maltreatment (e.g. by addressing poor family functioning) there is limited evidence to date that they assist in child maltreatment prevention (Higgins et al., 2006).

Segal et al. (2012) reviewed 52 home visiting interventions commencing during pregnancy or within six months of birth for the purpose of reducing the risk of child maltreatment or related outcome. The aim of this review was to apply a theory of change and program logic to assess whether or not a home visiting program would be effective in preventing child maltreatment. The studies reviewed were published between 1969 and 2009 and included randomized controlled trials (36) nonrandomised controlled studies (14) and cohort studies (2) evaluating programs delivered in United States (37), Australia (3), Canada (6), United Kingdom (2), New Zealand (1), Syria (1), Japan (1), and Norway (1).

It was concluded that to be effective, programs required five elements: an explicit objective; a clear target population; a clear theory of change and program components implemented as intended; and a clear alignment between the preceding four elements. Where there was a match between all of these elements 100% of programs were effective. These programs were the Special Families Care Project; Project 12-Ways; Parents as Teachers Program – Teens Combined = Basic + case management; Olds Nurse Family Partnership pre and postnatal, Elmira; Nurse Family Partnership prenatal, Elmira; Nurse Home Visiting Baltimore; and Parent-Intervention Model, Ontario. Where there was a match

between some of these elements but not all, only 60% of programs were successful, and where there was no match, no program was successful (Segal et al., 2012).

Paradis et al. (2013) evaluated the Building Healthy Children (BHC) collaborative. The BHC integrates home visitation, social service and healthcare agencies with paediatric medical care of infants born to young, low-income mothers. The program excludes families with parents who were or have been involved in the child welfare system. The BHC provides parenting education, therapy for parent-child trauma and maternal depression through home visitation. It aims to address risk factors for child maltreatment and to improve parent and child health and family functioning. Significant positive effects were reported by the evaluators for compliance with child's Preventive Health Care visits and parent's educational and employment gains. No effects were noted for reports to child protective services.

Vaithianathan et al. (2016) used linked administrative data (i.e., from national maternity, mortality, immunisation, B4 School health check, hospitalisation, primary health organisation (PHO) enrolment, and community-based mental health services collections) for all children born between the 1st July 2004 and the 31st December 2011 to assess the impact of the New Zealand Family Start Home visiting program on child outcomes. The program is made available to high risk pregnant mothers and families with pre-school children in selected regions, and is available until the child reaches school age. Significant reductions were noted in neonatal infant mortality, especially in the case of Sudden Unexplained Deaths in Infancy (SUDI) and injury deaths. SUDI was largest for Maori children. Increases in children's engagement with early childhood education and immunisation were also noted for some families.

Peacock et al. (2013) reviewed 21 studies of para-professional home visiting interventions comprising in total 6775 mothers of children 0-6yrs. The named interventions were the Child Parent Enrichment Project (US), Healthy Families Alaska (US), Healthy Start Program (US), Healthy Families New York (US), Hawaii Healthy Start Program (US), Community Mothers Program (Ireland), the Seattle Birth to Three Program (US), the Bangladesh Integrated Nutrition Program (Bangladesh) and the Philani Child Health and Nutrition Program (South Africa). Also included was an intervention for single pregnant adolescents from Chile, an intervention for children with non-organic failure to thrive (US), and programs for mothers at moderate risk (US), first time mothers (Ireland), at risk pregnant women (US), substance abusing mothers (US), and low income mothers. All but two of the studies included high risk families with children three years and under. All of the studies were RCTs. The most common target areas for intervention were child abuse and neglect, developmental delays and health assessment.

The review concluded that while home visiting programs delivered by para-professionals overall show limited effects on disadvantaged families, young children did show modest improvements in cognitive development and health. However, the number of non-significant findings were much larger than the significant ones. The findings from successful interventions indicate that initiating an intervention prenatally, increasing the dose of visits, providing adequate training and support to paraprofessionals delivering home visiting and improving family retention may facilitate the success of home visiting interventions.

Barlow et al. (2013; 2015a) evaluated a bilingual paraprofessional - delivered home visiting program (Family Spirit) for 322 Native American teenage mothers aged 12-19 years at conception. Participants

taking part in other mental or behavioural research or those who were prevented from participating due to life circumstances (e.g. severe mental illness or legal status) were excluded from the program. The program is delivered from 32 weeks gestation up until their child is 36 months. An RCT methodology was used to evaluate the program. Findings at 12 months postpartum indicated that mothers in the intervention group scored significantly better than those in the control group in parenting knowledge, parental locus of control, depression, externalizing problems, use of marijuana and illicit drugs. Children in the intervention group had lower scores for externalizing problems, internalizing problems, and dysregulation than those in the control group. There were no differences between the two groups on parenting stress, observations of the home environment, internalizing problems, and alcohol use. The findings were replicated at 36 months postpartum. However the evidence quality is undermined by the large number of outcome variables included in the study and risk of bias and lack of blinding of participants.

Prossman et al. (2015) reviewed 15 studies of 6 Home visiting interventions for women and children exposed to Intimate Partner Violence (IPV) comprising in total 2825 mothers. Five programs were delivered antenatally and all but one were for infants. The programs reviewed included Mother's AdvocateS in the Community (MOSAIC, Australia), Healthy Families Alaska (US), VoorZorg (Netherlands Nurse Home Visiting Program), the Nurse-Family Partnership intervention with paraprofessional and nurses in Denver (US), the Healthy Start Program (Hawaii), and the Nurse-Family Program (Memphis). Each of the programs targeted abused mothers and mothers with abused children with the aim of reducing intimate partner violence experienced by the mothers. MOSAIC targeted women with at least one child 0-5yrs of age. The studies included in the review were RCT studies. However, the authors rated the studies of very low to moderate evidence quality due to risk of bias and lack of blinding of participants.

Only two of the programs focussed specifically on interventions to prevent IPV (MOSAIC and VoorZorg) and these showed a significant reduction in IPV in the short term. Abused women in the MOSAIC study received weekly home visits by nonprofessional mentors for a period of 12 months. The mentors provided safety strategies, parenting support and help with referral to community services. VoorZorg, was delivered by trained nurses and consisted of 10 visits during pregnancy and 20 visits each year for the first two years of the child's life. The intervention supports improvements in the mother's health, development, parenting skills and partner relationships, and in the child's health and safety by reducing IPV.

The remaining programs provided support to abused mothers but did not provide a specific intervention to address IPV. None of these programs were successful in reducing IPV. However, support to abused mothers appeared to help children cope with the negative effects of IPV.

The review concluded that the evidence for effective home visiting to reduce IPV is scarce and evidence for the long term effects is lacking.

Turnbull and Osborn (2012) reviewed 7 studies, targeting a total of 950 infant-mother pairs, of home visiting interventions for pregnant or postpartum women with a drug or alcohol problem. Families with very pre-term delivery, adolescent and older mothers, prison populations, foster care infants, mothers with a major psychiatric diagnosis, and seriously ill infants were excluded from the programs. Studies were randomised, cluster-randomised, and quasi-experimental studies comparing home visit groups to no home visit for a different type of home visiting intervention. Visitors included nurses

(paediatric and community health), para professionals, midwives and lay women from the African American community. Six of the seven interventions were initiated postpartum and ranged from between one month to three years. One intervention was initiated pre and post-partum.

There were no significant differences between the intervention and control groups in any outcome measures (i.e. continued drug use, continued alcohol use, failure to enrol in a drug treatment program, not breastfeeding at 6 months, incomplete infant vaccination schedule, child cognitive development, psychomotor skills and behavioural problems, infants not in care of biological mother, non-accidental injury, non-voluntary foster care or infant death). One study found a significant reduction in involvement with child protective services and another in an increase in the use of postpartum contraception.

Overall the authors concluded that there was insufficient evidence to recommend the use of home visits for pregnant or postpartum women with a drug and alcohol problem.

McDonald et al. (2012) reviewed 12 rigorously evaluated home visiting programs that included the Nurse Home Partnership implemented in three US States (Elmira, Denver, and Tennessee), The Hawaii Healthy Start Program (US), Healthy Families America (US), Early Head Start (US), The Early Start (NZ) Program, Community Mothers Program (Ireland), The Queensland Home Visiting trial (Australia), The Miller Early Childhood Sustained home visiting (Australia), the MOSAIC home visiting program (Australia), and the Postnatal home visiting program for illicit drug-using mothers and their infants (Australia). Also reviewed were 19 systematic reviews and meta-analyses. The aim of the review was to determine potential components of an Australian home visiting program.

The authors found that the only component for which there is evidence for what works is that women are recruited prenatally as opposed to postnatally. It would also seem to be important to identify a specific outcome that home visiting is expected to achieve.

#### [Common components of programs that reported a significant outcome](#)

Further analysis of program procedures, content and delivery obtained from articles where at least one significant outcome was reported, identified a number of factors that may have contributed to the program's effectiveness. This data is gathered from the articles themselves including primary articles examined in the systematic reviews discussed in this report. Not all articles reported all components of the programs under review. Table A6 (Appendix 3) provides further details linking specific outcomes in the areas listed below to potential contributing factors.

Thirteen programs achieved at least one significant outcome in one or more of the following areas; partner violence (Hawaii Healthy Start, Healthy Families Alaska, VoorZorg); child physical abuse (Cognitive based extension to Healthy Start, Healthy Families Alaska, Healthy Families New York, VoorZorg, neglect (Nurse Family Partnership); child development and behaviour (Healthy Families Alaska, Early Head Start; Family Spirit; Child FIRST, Bangladesh Integrated Nutrition Program); parenting (Healthy Families Alaska, Healthy Families New York; Early Head Start, Family Spirit); maternal stress (Healthy Families Alaska, Child FIRST); maternal depression (Healthy Families Alaska); service use (Child FIRST; Building Healthy Children); neonatal infant mortality (Family Start) and illicit drug use during pregnancy and post-partum (Family Spirit).

Among the most prominent factors of the thirteen successful programs were the: (a) *use of manuals and protocols* for program and service delivery - 11 successful programs used manuals and/or protocols (Hawaii Healthy Start, Healthy Start, Healthy Families Alaska, Healthy Families New York, Nurse Family Partnership, VoorZorg, Family Spirit, Family Start, ChildFIRST, The Bangladesh Integrated Nutrition Program, and MOSAIC); (b) Home visits which *focused on parenting* (e.g., parent-child interaction; parents understanding of child development; role modelling) - 11 successful programs provided parenting interventions (Hawaii Healthy Start, Healthy Start, Healthy Families Alaska, Healthy Families New York, Early Head Start, Family Spirit, Family Start, ChildFIRST, Building Healthy Children, The Bangladesh Integrated Nutrition Program, and MOSAIC); (c) Home Visits which *focused on children's developmental outcomes* (e.g., social, emotional and cognitive development) – 12 successful programs targeted child development (Hawaii Healthy Start, Healthy Start, Healthy Families Alaska, Healthy Families New York, Early Head Start, Nurse Family Partnership, VoorZorg, Family Spirit, Family Start, ChildFIRST, The Bangladesh Integrated Nutrition Program, and MOSAIC) and (d) programs that linked or referred families to *needed services* – 10 successful programs provided service referrals/linkage (Hawaii Healthy Star, Healthy Start, Healthy Families Alaska, Healthy Families New York, Early Head Start, Nurse Family Partnership, Family Start, ChildFIRST, Building Healthy Children, and MOSAIC). Details of service referrals for families and outcomes of the use of those services were not provided in any of the articles reviewed.

*Regular supervision* of home visitors was reported by 9 successful programs (Hawaii Healthy Start, Healthy Start, Families Alaska, Healthy Families New York, Nurse Family Partnership, Family Spirit, Family Start, The Bangladesh Integrated Nutrition Program, and MOSAIC). The curricula of 9 successful programs were based on *research evidence* and/or theory (Healthy Start, Early Head Start, Nurse Family Partnership, VoorZorg, Family Spirit, Family Start, ChildFIRST, Building Healthy Children, and MOSAIC). *Training of para-professional* home visitors in topics such as child development, parent child interaction, strengths based service delivery and risk factors (e.g. domestic violence, depression, children born preterm or with medical and/or physical disabilities) was noted for 8 successful programs - Hawaii Healthy Start, Healthy Start, Healthy Families Alaska, Healthy Families New York, Family Spirit, Family Start, The Bangladesh Integrated Nutrition Program, and MOSAIC). Five successful programs monitored adherence to delivery specification (fidelity) - Hawaii Healthy Start, Early Head Start, Family Spirit, Family Start, and ChildFIRST and five undertook periodic assessments of family/child outcomes throughout the delivery of the program - Hawaii Healthy Start, Healthy Families Alaska, Nurse Family Partnership, Family Start, and ChildFIRST. Four programs incorporated performance indicators -Healthy Families Alaska, Healthy Families New York, Early Head Start, and Family Start. Six programs could commence prenatally - Healthy Families Alaska, Healthy Families New York, Nurse Family Partnership, VoorZorg, Family Spirit, and MOSAIC, and three specifically targeted adolescent mothers (Nurse Family Partnership, VoorZorg, and Family Spirit. Four programs ensured that home visitors reflected the ethnic and cultural background of families - Healthy Start, Healthy Families New York, Family Spirit and ChildFIRST.

All 13 successful programs screened participants for eligibility for 'home visiting' based on a range of risk factors for child maltreatment including poverty, low income, history of abuse, domestic violence, depression, teen pregnancy, infant preterm, physical or medical problems, poor mental health and substance abuse. As might be expected, high levels of attrition were reported in this population of clients - many of whom experience complex and chaotic lives. Attrition of participants and lack of adherence to program fidelity were consistently reported as limitations to program delivery and

outcomes. For example one study of the HFNY program reported that by one year after baseline, 50% of the mothers who were assigned to the intervention group and chose to enrol in Healthy Families New York (HFNY) had dropped out of the program, and by 2 years, only one-third of HFNY participants remained in the program (DuMont et al 2008). Likewise Duggan et al (2007), in their study of Healthy Families Alaska (HFAK) home visiting program reported that nearly half the families had left the program by the time their child was one year old and two-thirds had left by the time the child was two years old. Both programs targeted high risk families.

### Summary and conclusions

There is some evidence to suggest that home visiting can enhance child health and developmental outcomes however there is limited evidence to date that they assist in the prevention of child maltreatment unless the program has a clear logic and theory of change as articulated by Segal et al. (2012). There is also some evidence that IPV may be reduced where Home Visiting programs include specific strategies to address IPV. In addition the success of a home visiting program may be increased when delivered prenatally, the dose of visits are high, adequate training and support are provided to paraprofessionals who deliver the program and family retention is targeted. There is little evidence to date to suggest that home visiting programs are viable for mothers with alcohol problems. Family Spirit (Barlow et al, 2013; 2015a) and Home Visiting Baltimore (cited in Segal et al., 2012) reported some success in addressing prenatal illicit drug use. A summary of the areas in which home visiting programs have been reported to have had some level of success is provided in Box 1.

<b>Box 1. Areas in which home visiting programs have had some level of success</b>	
<ul style="list-style-type: none"> <li>• Partner violence:</li> <li>• Child development and behaviour</li> <li>• Child physical abuse</li> <li>• Neglect</li> </ul>	<ul style="list-style-type: none"> <li>• Parenting</li> <li>• Maternal stress</li> <li>• Service use</li> <li>• Illicit drug use</li> </ul>

The majority of home visiting programs attempt to address a wide range of issues while at the same time achieving child development outcomes. No single program has been shown to be successful in addressing all issues. The home visiting review by Segal et al. (2012) highlighted that *successful programs target specific outcomes and include:*

- an explicit objective;
- a clear target population;
- a clear theory of change;
- program components implemented as intended; and
- a clear alignment between the preceding four elements

In addition to the program attributes highlighted by Segal et al. (2012) attention to certain program and service delivery components may also contribute to successful outcomes (see Box 2).

**Box 2.** Program and service delivery components of home visiting programs that may contribute to successful outcomes

- Specific strategies to address IPV
- Delivered prenatally
- High number of visits
- Target family retention
- Address specific issues
- Parenting interventions
- Child development interventions
- Use of manuals and protocols that have a clearly articulated programme logic
- Linking families with services matched to need
- Regular supervision and support of home visitors
- Staff training, minimum skill set matched to programme outcomes
- Research informed curricula
- Fidelity monitoring
- Periodic assessments of family/child outcomes
- Measurable child outcome performance indicators
- Home visitors' reflect the ethnic and cultural background of families
- Target adolescent mothers

### 3.1.3 BEHAVIOURAL/ PSYCHOSOCIAL PROGRAMS

Seven studies and one meta-analysis examining seven programmatic responses to the behavioural and psychosocial needs of vulnerable families were identified in the literature.

Programs examined include: Parent-Infant Psychotherapy (PIP; Barlow, Bennet, Midgley, Larkin, & Wei, 2015b); Families and Schools Together (FAST) babies (McDonald et al., 2009); the Mothers and Toddlers Program (MTP; Suchman, DeCoste, McMahon, Rounsaville, & Mayes, 2011; Suchman, et al., 2010); MindBabyBody (MBB; Woolhouse, Mercuri, Judd, & Brown, 2014); an integrated cognitive-behavioural intervention (CBI; Kiely, El-Mohandes, El-Khorazaty, & Gantz, 2010); a series of brief interventions (BI; Marais, et al., 2011); and infant massage group programs (IM; Underdown, Norwood, & Barlow, 2013).

An additional outreach support program (Community Bubs; Flynn & Hewitt, 2007) was identified through consultation with an expert panel.

#### Strategy characteristics

These programs aimed to improve parent-infant relationships, bonding, and attachment (IM and PIP), promote optimal infant development (PIP), positive parenting practices (FAST babies and MTP), maternal mental health and wellbeing (MBB), change behaviour and reduce psycho-behavioural risk (BI and CBI), and strengthen individual, family, and community resources to ensure infants thrive and develop safely (Community Bubs). The CBI comprised individual interventions for four risk factors (smoking, passive smoking, depression, and domestic violence) aimed at improving outcomes in these areas. If presenting with more than one risk factor, women received more than one intervention. The study identified in the review focused on the effectiveness of the CBI in reducing intimate partner

violence. Whilst all programs included a therapeutic element, this was a core focus for four of the programs (BI, MBB, MTP, and PIP).

Three programs were group-based (FAST babies, IM, and MBB), creating the opportunity for their participants to further develop their social support network, four provided sessions to participants and their families individually (BI, CBI, MTP, and PIP), and one incorporated both individual and group components (Community Bubs). FAST babies was the only community-based program identified in the literature although Community Bubs was also community-oriented and housed within the context of a broader neighbourhood community development program. Programs were delivered by psychologists, psychiatrists, social workers, health visitors, midwives, specialist staff, community volunteers, and occupational therapists/ infant massage professionals, most with specific training in their respective interventions.

Target populations were variable amongst the programs and included teenage mothers with infants (FAST babies); substance abusing mothers of children up to 36 months old (MTP); pregnant women experiencing or at risk of psychological distress (MBB); and families with infants aged 0 to 4 months at risk for child protection notification. CBI targeted women exhibiting at least one of four risk factors (smoking, passive smoking, depression, domestic violence) but the study only examined the African American women who made up the majority of the sample. PIP is not specifically targeted to high-risk populations; however, the populations targeted in the studies reviewed by Barlow et al. (2015) included women with postpartum depression, anxious or insecure attachment, and maltreated and prison populations. The BI strategy itself did not have a defined target population; however, the BIs employed in the study by Marais et al. (2011) targeted alcohol consumption and drinking behaviour during pregnancy in women attending antenatal health clinics in a low socio-economic and disadvantaged sub-district in South Africa. The target population for the IM program was not specified but participants were recruited from IM programs in children's centres in two extremely disadvantaged areas and one with a broader socio-demographic population within the UK.

No program specifically targeted fathers, although young fathers were involved in FAST babies as part of the multi-agency team and had access to peer-support groups. Community Bubs acknowledged that whilst their program primarily focused on mothers, it is important to include both parents of two-parent households to ensure everyone's needs are met.

### Study characteristics

The studies identified in the rapid literature review comprised: one systematic review and meta-analysis (PIP), three randomised controlled trials (RCTs; one RCT [CBI], one cluster RCT [BI], and one pilot RCT [MBB]), one randomised trial (MTP; findings presented across two journal articles), and three evaluations without a control or comparison group that utilised both qualitative and quantitative data collection methods, including a single-group pre-post design (Community Bubs, FAST babies, and IM). Four were conducted in the US, two in Australia, and one each in Canada, South Africa, and the UK. Sample sizes ranged from 32 to 336 participants (five had <100 participants), with the systematic review incorporating a total of 846 randomised participants across the studies included. The Community Bubs evaluation comprised 17 participating families with a total of 46 children.

No two studies examined the same program with a different participant group except for the systematic review which examined eight RCTs and quasi-RCTs evaluating the PIP program. No specific

exclusion criteria were identified for any of the strategies. However, many of the studies themselves did have participant inclusion and exclusion criteria. The BI evaluation was conducted with a clinical sample of convenience which may have inadvertently excluded heavy drinkers who do not regularly attend clinics. The MTP evaluation excluded mothers who were actively suicidal, homicidal, severely cognitively impaired, disengaged from their substance use treatment and who were not fluent in English. The MBB evaluation excluded women over 34 weeks gestation, women who had current substance abuse or severe suicidal ideation, and women who were not fluent in English. The meta-analysis of PIP identified the exclusion criteria of the studies examined which included families with low socio-economic status, mothers with substance dependence, bipolar disorder, or psychiatric disorder, infants in foster care and seriously ill infants.

### Evidence of effectiveness

All studies except one (IM) found some support for their respective programs, although this does not provide an adequate evidence base to determine the effectiveness of these programs. Each study had a number of limitations, including but not limited to, small sample size, lack of generalisability beyond sample population, lack of randomised control group, and potential biases due to data collection by local program delivery teams. Additionally, the Community Bubs evaluation lacked analyses with significance testing so it is unable to be determined if the identified trends were statistically significant and therefore must be interpreted with caution.

The program with the most evidence was PIP. In their meta-analysis, Barlow et al. (2015b) found that PIP shows promising findings in regards to improving infant attachment security in high-risk families but not for other parent- or relationship- based outcomes, including: parental mental health, maternal sensitivity to infant (parent-child interaction), child involvement and parent positive engagement. When compared to other treatment models, PIP was no more or less effective at improving primary outcomes such as parental mental health, maternal sensitivity, infant attachment or behaviour, or secondary outcomes such as infant cognitive development. The overall quality of the included studies was poor and no study blinded participants or staff to intervention allocation.

Kiely et al. (2010) found that participants in the CBI were significant less likely to be victimised by their partner in the second or third trimester, although this did not continue postpartum (a similar trend was observed but this was not significant). The authors also found that depression and alcohol use during pregnancy were associated with the chance of intimate partner violence recurrence. It is important to note that there are many other factors associated with IPV including contextual (demographic, neighbourhood, and cognitive factors), developmental characteristics of the partner as well as partner behaviours (e.g. family, peer, psychological/behavioural, and cognitive factors), relationship influences and interactional patterns (Capaldi, Knoble, Shortt & Kim (2012)). It is a limitation of this study that potentially suicidal women were excluded as this may have inadvertently excluded those most in need of help.

Marais et al. (2011) found that disadvantaged pregnant women who participated in an assessment and a series of BIs had significantly reduced alcohol consumption (as measured by the AUDIT scale) as compared to those who received an assessment and written information alone. Additionally, women whose drinking was confirmed benefitted most from the intervention. A limitation of this study is that heavy drinkers who do not regularly attend clinics may have inadvertently been excluded from the

study due to data having been collected from a clinical sample of convenience. Despite this limitation, the findings are promising.

McDonald et al. (2009) found that teenage mothers who participated in a group intervention reported significantly increased general and social self-efficacy, improved parent-child relationship, and reduced parenting stress. This was supported by grandmothers/support persons who reported significantly reduced intergenerational family conflict, improved overall family relationships, increased tangible and total social support, reduced total parenting stress, and reduced stress levels of teenage mothers through improved mood and reduced isolation or withdrawal. In their pilot RCT, Woolhouse et al. (2014) found preliminary evidence supporting the MBB with significant improvements being observed in anxiety and mindfulness scores amongst women who participated in the program. No significant improvements were found within participants in the control group, nor were there any significant differences when comparing outcomes for the MBB and control groups. These outcomes must be interpreted with caution as this pilot study had a very small sample and did not focus on program outcomes, but rather on the feasibility of recruitment strategies.

Suchman et al. (2010) and Suchman et al. (2011) both reported on the same pilot randomised trial of the Mothers and Toddlers Program for substance abusing mothers. These preliminary findings indicate that, upon completion of the program, participants in MTP have better reflective functioning, representational coherence and sensitivity, and caregiving behaviour than parents in the comparison parent education program. At 6-week follow-up, improved maternal reflective functioning was sustained, albeit with a smaller effect, and differences in maternal caregiving behaviour were sustained. MTP participants also experienced slight improvements in depression and global psychiatric distress, although this was not sustained and the MTP group had higher global psychiatric distress than the comparison parent education group at follow-up. It is a limitation of this study that women who were actively suicidal, homicidal, severely cognitively impaired, disengaged from their substance use treatment or not fluent in English were excluded as this may have inadvertently excluded those most in need of help.

In their evaluation of the initial Community Bubs three year pilot program, Flynn and Hewitt (2007) found that all infants engaged in the program safely remained at home in the care of their parent/s and the majority of families developed and maintained appropriate community connections, demonstrated positive parent-infant attachment, and experienced housing, financial, and key relationship stability. Most families also had reduced risk factors and were assessed as being at lower risk than they were at program intake. The Community Bubs program was still in operation at the time of writing.

#### [Common components of programs that reported a significant outcome](#)

On closer examination, these programs share some common elements that may contribute to their effectiveness (see Table A7). Five out of the six unique successful programs targeted a specific issue (BI, CBI, FAST Babies, MBB, and MTP), engaged trained or qualified staff to deliver the program and therapeutic components (BI, CBI, Fast Babies, MBB, and MTP), involved some form of risk assessment or screening, often for identifying program eligibility (BI, CBI, MBB, MTP, and Community Bubs), and made referrals or provided links to other services and organisations as required (CBI, Fast Babies, MBB, MTP, and Community Bubs). Four provided some form of individualised or patient-centred counselling or therapy (BI, CBI, MTP, and Community Bubs), delivered the program in an interactive manner (FAST

Babies, MBB, MTP, and Community Bubs and involved educational content (CBI, Fast Babies, MTP, and Community Bubs). Three were delivered to each individual participant privately (BI, CBI, and MTP), two were delivered in a group setting (MBB) and one in individual, group and community settings (Community Bubs).

Three programs were community-based (CBI, Fast Babies, and Community Bubs), delivered in line with a program manual (Fast Babies, MBB, and MTP), and provided some form of incentive for participation such as money or travel vouchers (BI, CBI, and MTP). All programs included a therapeutic component and were delivered over a number of sessions that ranged in duration from 20 minutes to two hours and occurred over the course of a month or more, with the longest involving over 12 months of intervention and support (FAST Babies). Two programs (CBI and FAST Babies) were based on evidence from the literature (FAST Babies was adapted from an evidence informed program). The remaining studies did not provide enough information to determine if they were evidence informed or not. MTP and Community Bubs both used family-inclusive approaches and involved home visits and outreach services.

### Summary and conclusions

Limited evidence exists for behavioural or psychosocial programs designed specifically for families during pregnancy or infancy ( $\leq 3$  years) at risk of violence or other forms of risk. All studies found some support for their respective programs, although this does not provide an adequate evidence base to determine the effectiveness of these programs. The programs share a number of common elements such as targeting a specific issue, employing trained or qualified staff to deliver the program, engaging participants individually using individualised or person-centred approaches, conducting some form of risk assessment or screening, and offering an incentive for participation. Some support is given for behavioural and psychosocial programs reducing intimate partner violence during pregnancy and improving maternal mental health but these outcomes were not sustained. Promising support was found for reduced alcohol consumption during pregnancy but it is not known whether this was sustained postpartum or for any subsequent pregnancies.

A summary of the areas in which behavioural/psychosocial programs have had some level of success are outlined in Box 3.

<b>Box 3. Areas in which behavioural/psychosocial programs have had some level of success</b>	
<ul style="list-style-type: none"> <li>• Infant attachment security in high-risk families</li> <li>• IPV in the second or third trimester</li> <li>• Alcohol consumption</li> <li>• General and social self-efficacy</li> <li>• Parent-child relationship/attachment</li> <li>• Parenting stress</li> <li>• Intergenerational family conflict</li> <li>• Overall family relationships</li> </ul>	<ul style="list-style-type: none"> <li>• Tangible and total social support</li> <li>• Maternal reflective functioning</li> <li>• Maternal caregiving behaviour</li> <li>• Infants remaining safely at home in the care of their parent/s</li> <li>• Development and maintenance of appropriate community connections</li> <li>• Housing, financial, and key relationship stability</li> </ul>

Attention to program and service delivery components may contribute to successful outcomes (see Box 4):

**Box 4.** Program and service delivery components of behavioural/psychosocial programs that may contribute to successful outcomes

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• Target a specific issue</li> <li>• Engage trained or qualified staff</li> <li>• Individualised or patient-centred counselling or therapy</li> <li>• Interactive program delivery</li> <li>• Risk assessment or screening for program eligibility</li> <li>• Delivered individually, group or community setting</li> </ul> | <ul style="list-style-type: none"> <li>• Program manual</li> <li>• Educational content</li> <li>• Referrals to other services and organisations</li> <li>• Incentive for participation such as money or travel vouchers</li> <li>• Delivered over a number of sessions</li> <li>• Run over the course of a month or more</li> <li>• Based on evidence from the literature</li> </ul> |
|--|--|

All programs except Community Bubs targeted mothers or their infants and only one program (FAST babies) specifically mentioned involving fathers. Community Bubs targeted at-risk families (not specifically mothers) although it is uncertain how much involvement fathers have in the service. The evaluation of the pilot found that most interventions targeted the mothers despite the majority of families being headed by two parents and did not fully address the needs of fathers. It is unknown if this issue persists in the current operating model. The fairly recent social shift towards the desire for a more equitable division of parenting responsibility suggests programs should target either both parents or the primary caregiver, not just mothers, and studies should examine their impact on outcomes for fathers and their infants. While a diverse range of outcomes were examined for each program, very few studies examined child-focused outcomes.

It is evident that there is a need for programs either targeting or including fathers of infants ( $\leq 3$  years) or the family unit as a whole. Evaluations that examine child-focused outcomes, as either primary or secondary outcomes dependent on program focus, are also needed to determine the impact of programs on the health and wellbeing of infants.

### 3.1.4 OTHER PROGRAMS

One meta-analysis examining integrated substance abuse programs (Milligan et al., 2011) and one systematic review examining domestic violence interventions (Jahanfar, Howard, & Medley, 2014) were identified in the literature. An additional Australian program (Baby Basket; McCalman et al., 2014) was identified through consultation with the expert panel.

#### Substance abuse programs

##### *Study characteristics*

Milligan et al. (2011) defined integrated substance abuse programs as programs that integrate on-site pregnancy, parenting, or child-related services with substance use treatment within a single agency/treatment program.

### *Strategy characteristics*

Milligan et al. (2011) undertook a meta-analytic review of birth outcomes for infants born to 2471 women participating in 10 integrated substance abuse programs. Three of the included studies were RCTs and eight quasi-experimental studies. This meta-analysis excluded programs that included men, women who were not pregnant or parenting and, programs that focused on smoking cessation.

### *Evidence of effectiveness*

Milligan et al. (2011) found that compared to women receiving no treatment, women participating in integrated programs delivered babies who had significantly higher birth weights and larger head circumferences; were less likely to be classified as low birth weight; had fewer birth complications; and were more likely to have negative toxicology screens at birth. Among mothers who attended integrated programs, infants who resided with their mothers had higher birth weights than those who lived separate from their mothers. It was also found that women in integrated programs, when compared with women who participated in non-integrated programs, attended more prenatal visits and their infants were less likely to be born prematurely. The authors concluded that findings from the small number of studies suggest that integrated programs may be associated with a small decrease in rates of premature births and a large increase in participation in prenatal care. It is not known if these outcomes lead to reduced risk to children after birth. Further rigorous evaluations of comprehensive integrated programs that address the birth outcome and ongoing risk factors to infants of substance abusing women is needed.

A summary of the areas in which substance abuse programs have had some level of success are outlined in Box 5.

<b>Box 5. Areas in which substance abuse programs have had some level of success</b>	
<ul style="list-style-type: none"><li>• Higher birth weights</li><li>• Larger head circumferences</li><li>• Negative toxicology screens</li></ul>	<ul style="list-style-type: none"><li>• Prenatal visits</li><li>• Premature birth</li></ul>

### *Common components of programs that reported a significant outcome*

Examination of the six primary studies in this meta-analysis that presented significant findings found these programs share some common elements that may contribute to their effectiveness. Five provided ongoing counselling (as cited in Milligan et al., 2011: Armstrong et al., 2003; Carroll et al., 1995; Chang et al., 1992; Kyei-Aboagye et al., 1998; Sweeney et al., 2000). Four developed individualised care plans (as cited in Milligan et al., 2011; Armstrong et al., 2003; Carroll et al., 1995; Chang et al., 1992; Sweeney et al., 2000). Three conducted some form of risk assessment or screening (as cited in Milligan et al., 2011: Armstrong et al., 2003; Kyei-Aboagye et al., 1998; Sweeney et al., 2000) or provided additional supports such as childcare or assistance contacting services (Carroll et al., 1995; Chang et al., 1992; Sweeney et al., 2000). The remaining studies for each of the abovementioned elements did not provide enough program detail to determine whether the element was present or not. Four of the six studies did not provide enough program detail to determine if the majority of elements were present or not (as cited in Milligan et al., 2011: Little et al., 2003; Carroll et al., 1995; Chang et al., 1992; Kyei-Aboagye et al., 1998).

A summary of program and service delivery components that may contribute to successful outcomes is provided in (see Box 6).

**Box 6.** Program and service delivery components of substance abuse programs that may contribute to successful outcomes

- Ongoing counselling
- Individualised care plans
- Risk assessment or screening
- Additional supports such as childcare or assistance contacting services

## Domestic violence programs

### *Strategy characteristics*

Interventions examined by Jahanfar et al. (2014) included a single brief individualised consultation, case management and referral to a social care worker, and multiple therapy sessions during pregnancy and after birth.

### *Study characteristics*

Jahanfar et al. (2014) examined 10 trials targeting the prevention or reduction of partner violence against pregnant women. A total of 3417 women participated in the trials. The studies included cluster RCTs and quasi-RCTs aimed at reducing the episodes of violence and preventing violence during and up to one year after pregnancy. One study was conducted in Peru, one in Hong Kong, and the remaining studies were conducted in the US.

### *Evidence of effectiveness*

The outcomes of the review by Jahanfar et al. (2014) were seriously limited by the lack of consistency in reported outcomes, the limited number of outcomes reported, and the varied way in which outcomes were measured. As a result the authors were unable to identify any one intervention that worked better than any other. Two interventions were found to have some effect, the first being a psychological therapy intervention. Women receiving this intervention were less likely to report domestic violence at any point during pregnancy and/or in the postnatal period when compared to women receiving usual care. The second intervention aimed to improve women's relationships with their partners and strengthen social networks. Women receiving this intervention reported slightly reduced psychological abuse and minor physical violence scores. However, the intervention did not have a significant effect on severe physical violence scores. There was no evidence that any of the interventions had a harmful effect. None of the programs reviewed targeted male perpetrators of violence toward their pregnant partners.

A summary of the areas in which domestic violence programs have had some level of success are outlined in Box 7.

**Box 7.** Areas in which domestic violence programs have had some level of success

- Domestic violence at any point during pregnancy and/or in the postnatal period
- Reduced psychological abuse
- Minor physical violence

### *Common components of programs that reported a significant outcome*

Examination of the five primary studies in this review that presented significant findings found these programs share some common elements that may contribute to their effectiveness. Four targeted a specific issue, engaged trained or qualified staff to deliver the program and therapeutic components, and delivered the program to each individual participant privately (as cited in Jahanfar et al., 2014: Cripe, 2010; Curry, 2006; Kiely, 2010; Tiwari, 2005). Four involved some form of risk assessment or screening (as cited in Jahanfar et al., 2014: Calderon, 2008; Cripe, 2010; Curry, 2006; Kiely, 2010). Three created individualised safety or care plans with participants and provided referrals to other services and organisations as required, either as direct referrals or by providing participants a referral card which lists relevant services and supports (as cited in Jahanfar et al., 2014: Cripe, 2010; Curry, 2006; Kiely, 2010). Sub-group analyses to examine which type of intervention produced the best outcomes were unable to be conducted due to insufficient evidence.

A summary of program and service delivery components that may contribute to successful outcomes is provided in (see Box 8).

<b>Box 8. Program and service delivery components of domestic violence programs that may contribute to successful outcomes</b>	
<ul style="list-style-type: none"><li>• Focused on a specific issue</li><li>• Trained or qualified staff</li><li>• Therapeutic component</li><li>• Delivered individually</li></ul>	<ul style="list-style-type: none"><li>• Risk assessment or screening</li><li>• Individualised safety or care plans</li><li>• Referrals to other services and organisations as required</li></ul>

### *The Baby Basket program*

#### *Strategy characteristics*

McCalman et al. (2014) evaluated the Baby Basket program in North Queensland, Australia which aimed to improve the health knowledge of Aboriginal and Torres Strait Islander women who are pregnant or have recently given birth and their engagement with the health system. A feature of this program was the provision of free baskets of essential baby care supplies and food vouchers during the first trimester, immediately after birth, and a short time after birth.

#### *Study characteristics*

McCalman et al. (2014) utilised both qualitative and quantitative data collection methodologies in their evaluation. The quantitative component of the evaluation included the analysis of 967 participant surveys, a cost analysis, and use of routinely collected secondary administrative data to analyse indicators related to the program's aims. However, no analyses with statistical testing were conducted so it is unable to be determined if the identified trends were statistically significant and must be interpreted with caution. Additionally, due to the methods utilised, it could not be determined whether any of the identified trends were specifically attributable to participation in the Baby Basket program or to a combination of factors that include participation in other services (e.g. engagement with maternal health services), or data collection procedural changes.

#### *Evidence of effectiveness*

McCalman et al. (2014) found that the majority of participants thought the baby baskets were useful, with 78.8% rating them as very useful. The program aim of information provision was met with over 98% of basket recipients indicating they had also received advice on smoking, alcohol, nutrition, and

SIDS (sudden infant death syndrome). The cost analysis estimated that program delivery would cost around \$874 per participant. Analysis of the secondary administrative data was very limited but indicated that, compared to the control sites, sites serviced by the Baby Basket program showed a greater frequency of antenatal visits and a higher proportion of visits taking place early in pregnancy (<13 weeks gestation). Provision of advice was inconsistent, with women in the serviced sites receiving more information than those in the control sites on some indicators (antenatal education, nutrition, and breastfeeding) but not on others (birth plans). Rates of smoking during pregnancy were similar between the control and serviced sites, with a trend increase over time being observed. Within serviced sites, a trend decrease in alcohol consumption during pregnancy was observed which was in contrast to the increasing trend observed in control sites. Evidence of scabies infestations rose over time and was similar for both the control and serviced sites, potentially indicating a greater recognition of symptoms and treatment seeking. Fewer reports of deficient maternal iron levels occurred in serviced sites than control sites, consistent with the aim of the Baby Basket program to prevent low iron levels among pregnant women. Additionally evidence of faltering growth among infants 3 to under 15 months declined in serviced sites, although this may have been as a result of procedural changes in the growth charts used for assessing this indicator. Given the nature of the data analysed, the observed trends cannot be attributed to Baby Basket participation specifically and are likely to be a result of a combination of factors, including Baby Basket participation.

## **3.2 COLLABORATIVE APPROACHES**

### **3.2.1 WHAT IS THE AIM OF THIS EVIDENCE SUMMARY?**

This evidence summary reports on findings from five studies that examined the effectiveness of strategies that used collaborative processes to achieve defined outcomes in vulnerable families. A ‘collaborative approach’ was defined as an intervention strategy that primarily involves a partnership between two or more service providers from different professions, co-ordinating their response to achieve the same or similar goals. One study (McCombs-Thornton & Foster, 2012) was identified through consultation with the expert panel.

Strategies examined include: Early Start (Taillac, Goler, Armstrong, Haley, & Osejo, 2007); Safe Mom, Safe Baby (SMSB; Kramer, Nosbusch, & Rice, 2012); Starting Early Starting Smart (SESS; Morrow et al., 2010); Toronto Centre for Substance Use in Pregnancy (T-CUP; Ordean & Kahan, 2011); and the ZERO TO THREE Safe Babies Court Teams (SBCT) project (McCombs-Thornton & Foster, 2012; ZERO TO THREE). Key information about these studies, the strategies evaluated, and the effect on parent and child outcomes can be found in Tables A1 to A4 (Appendix 2).

### **3.2.2 STRATEGY CHARACTERISTICS**

Two strategies combined obstetric care with substance abuse treatment for pregnant women with a history of alcohol or drug abuse (T-CUP and Early Start). T-CUP uses a nurse clinician to assist with women’s obstetric and addiction care and a team social worker to provide case management and assistance with child protection concerns. Access to specialists in obstetrics, paediatrics, anaesthesia and psychiatry is also available. Early Start uses licensed substance abuse experts to work as part of prenatal care teams and involves risk assessment, education, and counselling for at-risk women, and ongoing education and training for obstetrics/gynaecology clinicians.

SMSB uses a collaborative care delivery model that supports clinical integration between a registered nurse case manager and a community partner domestic violence advocate. It promotes synergy between the healthcare system and a community domestic violence agency. SMSB aims to help abused pregnant women navigate healthcare settings and community-based services.

SESS involves a team of case managers or family advocates and parenting and mental health specialists. It aims to integrate parenting, mental health and drug treatment services into the paediatric healthcare setting for caregivers with infants who were less than 12 months old. SESS services included case management, home visits by a coordinating case manager, family focused service planning, and access to parenting support and education. Additional mental health, substance abuse and behavioural health services are also made available through facilitated referral processes with collaborating agencies.

The SBCT project operates in multiple sites across the US and utilises multidisciplinary teams who meet regularly to work with individual families with infants up to age three entering foster care to identify and respond to their needs, providing appropriate interventions and referrals as needed. The team is led by a judge and comprises a wide range of stakeholders including, but not limited to, child welfare workers, legal representatives, court-appointed special advocates, service providers, and community leaders. The aims of the SBCT project are twofold: 1) to increase the awareness of the

negative impact of abuse and neglect on very young children among individuals working with maltreated infants; and 2) to improve the outcomes of very young children and prevent future court involvement. Additionally, the SBCT project aims to reduce the time taken for a child to reach permanency regardless of how they exit foster care.

### **3.2.3 STUDY CHARACTERISTICS**

The studies identified comprised one pre-post study (Kramer et al., 2012), two case control studies (Morrow et al., 2010, Taillac et al., 2007) and two cohort studies (McCombs-Thornton & Foster, 2012; Ordean & Kahan, 2011). Four studies were conducted in the United States (US) and one was conducted in Canada. The number of study participants ranged from 201 to 49,986, and the period of data collection ranged from 1999-2010. Three studies focused on outcomes for pregnant women and their babies, one focused on at-risk families with infants less than 12-months old, and another focused on infants who have exited foster care. High risk families included families experiencing mental health issues, drug abuse or intimate partner violence.

The studies that examined intervention effectiveness for pregnant women reported on: an interdisciplinary case management program to address intimate partner violence experienced by women in the US (Kramer et al. 2012); a family medicine-based program to provide prenatal care and addiction treatment for women in Toronto with a history of alcohol or drug abuse (Ordean & Kahan, 2011); and a US prenatal substance-abuse program which aims to support substance abusing women (Taillac et al., 2007). The one study that focused on caregivers with infants less than 12-months-old reported on a prevention-oriented integrated services model to improve access to and use of behavioural health services including parenting, mental health and substance abuse services (Morrow et al. 2010). The study that focused on infants who have exited foster care examined the effect of multi-disciplinary court teams on time to permanency and type of exits from foster care (McCombs-Thornton & Foster, 2012).

Intervention effectiveness was measured using instruments to assess readiness for change and adoption of safety behaviours (Kramer et al., 2012); baseline and follow-up interviews to assess changes in utilisation rates for parenting, mental health, and drug treatment (Morrow et al., 2010); database information to compare prenatal care attendance, changes in social outcomes, changes in drug use, and obstetric and neonatal outcomes (Ordean and Kahan, 2011); and questionnaires and screening tests to assess changes in maternal and neonatal outcomes (Taillac et al., 2007). All intervention settings were in a clinical environment, including prenatal clinics (Taillac et al., 2007), paediatric care sites (Morrow et al., 2010), a family medicine clinic (Ordean and Kahan, 2011), and community healthcare centres (Kramer et al., 2012).

Whilst no specific exclusion criteria were identified for the T-CUP program, the evaluation excluded a number women, including those who attended a consult once only (many of whom feared child protection intervention), had a terminated pregnancy or pregnancy that resulted in foetal or neonatal death, and women whose prenatal care was transferred to another physician or for whom no outcome data was available.

### 3.2.4 EVIDENCE OF EFFECTIVENESS

All five studies reported that interventions using a collaborative approach resulted in positive outcomes for at-risk populations.

Evaluations of both Early Start and T-CUP concluded that prenatal care integrated with substance abuse treatment can benefit newborns and their mothers. In their evaluation of T-CUP, Ordean and Kahan (2011) reported high compliance rates with prenatal visits, enhanced maternal and neonatal outcomes, and high discharge rates of infants in the care of their mothers. In particular, there were statistically significant decreases in maternal drug use for women who came to the intervention early in their pregnancies. In their evaluation of Early Start, Taillac et al. (2007) showed that women who were screened, assessed and treated had statistically significantly lower rates for placental abruption, preterm labour, and stillbirth, compared with women who were screened only, and often had outcomes that compared favourably with the control study subjects. For major neonatal outcomes, including assisted ventilation, low birth weight, and preterm delivery, a similar trend was observed.

Kramer et al. (2012) reported that, of the abused pregnant or newly delivered women who completed the SMSB program during the study period (n = 201), more than half progressed toward action and maintenance of violence-free relationships (progressing from levels 1 to 4 on the Domestic Violence Survivor Assessment). Participants also showed an increased adoption of safety behaviours (from an average of 22.8 to 27.8 safety behaviours, as measured by the Safety Behavior Checklist), and birth outcome data showed that despite participants' increased risk of poor outcomes, women delivering in 2009 and 2010 achieved birth outcomes comparable with a large general population dataset.

Findings from the evaluation of SESS indicated that SESS caregiver participants were 4.6 times more likely to receive parenting services, 2.1 times more likely to receive outpatient mental health treatment, and 1.8 times more likely to receive drug treatment, compared with comparison group participants (Morrow et al., 2010). However, the outcomes for parents and infants who participated in these services is not known.

McCombs-Thornton and Foster (2012) found that infants in the SBCT group most commonly exited foster care through reunification whereas infants in a nationally representative comparison (NSCAW) group most commonly exited through adoption. In comparison to the NSCAW group, infants in the SBCT group spent significantly less time in foster care and were more likely to exit into three out of four exit types: reunification, relative custodianship, and non-relative legal guardianship, but not adoption. Additionally, a competing risks analysis indicated that infants in the SBCT group were also at significantly greater 'risk' of exiting through one of these three exit types than to remain in foster care as compared to the NSCAW group. This indicates that SBCT infants exited foster care through reunification, relative custodianship, and non-relative legal guardianship significantly faster than the NSCAW group. The 'risk' of exiting through adoption than remaining in foster care did not differ between the SBCT or NSCAW groups, despite a greater proportion of infants in the NSCAW group exiting through adoption.

#### Common components of programs that reported a significant outcome

All five of these successful collaborative approaches targeted specific issues and included ongoing case management and adopted individualised approaches to care (see Table A8). Four provided participants with additional support such as on-call or urgent care and ongoing counselling (Early Start,

SESS, SMSB, and T-CUP) and referrals or community linkages as required (Early Start, SESS, SBCT, and T-CUP), and included educational content for patients and or providers (Early Start, SESS, and SMSB). Three utilised a family or person-centred approach to care (SESS, SMSB, and T-CUP).

### 3.2.5 SUMMARY AND CONCLUSIONS

Overall, findings show that collaborative approaches to interventions can result in positive outcomes for at-risk pregnant women and caregivers, and infants entering foster care; however, as a result of the limited number of studies included in this review, no strong conclusions about intervention effectiveness can be drawn. A summary of the areas in which collaborative approaches have been reported to have had some level of success is provided in Box 9.

<b>Box 9. Areas in which collaborative approaches have had some level of success</b>	
<ul style="list-style-type: none"> <li>• Compliance rates with prenatal visits</li> <li>• Maternal and neonatal outcomes</li> <li>• High discharge rates of infants in the care of their mothers</li> <li>• Maternal drug use early in pregnancy</li> <li>• Placental abruption, preterm labour, and stillbirth</li> </ul>	<ul style="list-style-type: none"> <li>• Assisted ventilation, low birth weight, and preterm delivery</li> <li>• Domestic violence</li> <li>• Safety behaviours</li> <li>• Use of services</li> <li>• Time in foster care</li> </ul>

The approaches share a number of common elements that may contribute to their effectiveness such as providing ongoing case management and additional support, using individualised and family or person-centred approaches to care, providing referrals and community linkages as required, and including an educational content for patients and or providers (see Box 10).

<b>Box 10. Program and service delivery components of collaborative approaches that may contribute to successful outcomes</b>	
<ul style="list-style-type: none"> <li>• Ongoing case management</li> <li>• On-call or urgent care</li> <li>• Ongoing counselling</li> </ul>	<ul style="list-style-type: none"> <li>• Referrals and community linkages</li> <li>• Family or person-centred</li> <li>• Educational content</li> </ul>

Various study limitations also detract from the strength of findings, and include reliance on self-report data (Morrow et al., 2010), failure to consider (Taillac et al., 2007) or account for (Ordean & Kahan, 2011) confounding variables, and use of indirect outcome measures (Kramer et al., 2012). Though, the considerable size of the study population (n = 49,986) reported by Taillac et al. (2007) does lend strength to supporting the integration of substance abuse treatment with prenatal care. McCombs-Thornton and Foster (2012) only investigated intervention effects for first entry into the system and did not examine any longer term outcomes for the child or the impacts of SBCT on subsequent experiences of maltreatment and re-entry into the child welfare system.

## **3.3 WORKFORCE DEVELOPMENT**

### **3.3.1 WHAT IS THE AIM OF THIS EVIDENCE SUMMARY?**

This evidence summary reports findings from four studies that examined workforce development approaches to support vulnerable families during pregnancy and infancy. Key information about these studies, the strategies evaluated, and the effect on parent and child outcomes can be found in Tables A1 to A4 (Appendix 2).

### **3.3.2 STRATEGY CHARACTERISTICS**

Overall, four interventions were considered: an educational intervention for physicians (Guenther et al., 2009); the Enhancing Developmentally Oriented Primary Care (EDOPC) project (Allen, Berry, Brewster, Chalasani, & Mack, 2010); the ANEW education program (Gunn et al., 2006); and a service provider short course for prevention of Fetal Alcohol Syndrome (FAS) (Mwansa-Kambafwile, Rendall-Mkosi, Jacobs, Nel, & London, 2011).

Interventions had an educational or training focus aimed at healthcare providers (including general and specialist clinicians, nurses, physician assistants and midwives) or social service providers and public sector workers. Strategies included: presentations on recognition and documentation of abuse and use of screening checklists (Guenther et al., 2009); toolkits, referral information, sample tools and access to experts for support and monitoring (Allen et al., 2010); and interactive training workshops (Gunn et al., 2006, Mwansa-Kambafwile et al., 2011).

The vulnerable populations targeted by these strategies varied. The educational intervention for physicians aimed to improve emergency department (ED) clinical care for children under three years of age who were suspected of being abused (Guenther et al., 2009). EDOPC aimed to increase early identification and referral of children with developmental vulnerabilities (Allen et al., 2010). ANEW aimed to enhance identification and support for pregnant women with psychosocial problems (Gunn et al., 2006). The short course to prevent FAS sought to improve screening and counselling for women at risk for alcohol-exposed pregnancies (Mwansa-Kambafwile et al., 2011).

### **3.3.3 STUDY CHARACTERISTICS**

The studies identified in this review comprised one prospective group-randomised trial (Guenther et al., 2009), one pre-post study (Gunn et al., 2006), one pre-post, audit and random sampling study (Allen et al., 2010), and one pre-post and case control study (Mwansa-Kambafwile et al., 2011). Two studies were conducted in the US (Allen et al., 2010; Guenther et al., 2009), one in Australia (Gunn et al., 2006), and one in South Africa (Mwansa-Kambafwile et al., 2011). The number of study participants ranged from 10 to 2,873, and the period of data collection ranged from 2001 to 2008.

Intervention effectiveness was measured using changes in child abuse documentation by hospital emergency department clinicians, (Guenther et al., 2009); improvements in knowledge and ability to screen and identify developmental delays, changes in number of children screened for developmental issues, and compliance with screening recommendations, as assessed by knowledge tests, chart audits and random sampling of medical records (Allen et al., 2010); changes in attitudes to and knowledge of common psychosocial issues facing pregnant women exposed to domestic violence, and communication skills, as assessed using questionnaires (Gunn et al., 2006); and changes in knowledge,

beliefs and confidence in screening and counselling women at risk for alcohol-exposed pregnancies, as determined by interviews and surveys (Mwansa-Kambafwile et al., 2011).

### **3.3.4 EVIDENCE OF EFFECTIVENESS**

Three of the four studies (Allen et al., 2010; Gunn et al., 2006; Mwansa-Kambafwile et al., 2011) reported evidence in support of effectiveness for workforce development approaches to improving screening and confidence in working with high risk families during pregnancy and infancy. One study (Guenther et al., 2009) reported no evidence of a significant intervention effect.

Allen et al. (2010) reported that EDOPC project training and technical assistance for medical practitioners had a positive impact on confidence gained, intent to screen, and actual screening practice with regard to developmental delays. In particular, the authors reported that the EDOPC project increased developmental screening rates to the target of 85% of patients at most sites and increased social/emotional screening rates of infants to the same target rate in nearly half of the participating practices. Ninety percent (n = 324) of primary care providers believed that the training had improved their skills and confidence in developmental screening and, compared with the pre-training baseline, the percentage of clinicians who intended to implement screening increased by 102%, three years after program implementation.

Gunn et al. (2006) reported that the ANEW intervention increased the self-reported comfort and competency of health professionals to identify and care for women with psychosocial issues. After the training, participants were more likely to ask directly about domestic violence (p = 0.05), past sexual abuse (p = 0.05), and concerns about caring for the baby (p = 0.03). They were less likely to report that psychosocial issues made them feel overwhelmed (p = 0.01), and they reported significant gains in knowledge of psychosocial issues, and competence in dealing with them.

Mwansa-Kambafwile et al. (2011) reported that a short training course based on brief motivational interviewing principles appeared to be effective in building service provider capacity to better prevent and manage women at risk for alcohol-exposed pregnancies (FAS program). Providers expressed significantly more confidence for four skills indicators related to the identification and management of women at risk for an alcohol-exposed pregnancy. Female clients at intervention clinics were more likely than those at the control clinics to receive alcohol advice counselling, and an offer of family planning after the training. However, the study did not evaluate whether the intervention translated into reduced alcohol consumption during or post pregnancy.

In contrast to the findings presented above, Guenther et al. (2009) found no evidence of significant improvements in the documentation of possible physical child abuse as a result of an educational intervention targeted at healthcare staff in a hospital emergency department setting. The goal of the intervention was to educate healthcare staff about the signs and symptoms of physical abuse in children under 36 months, to provide child protection referral information and to assist them to meet current management and documentation recommendations when physical child abuse is considered.

The findings presented in this review are subject to various study limitations, including but not limited to reliance on indirect outcome measures, failure to account for confounding variables, reliance on self-report data, and completion of the post-intervention assessment immediately after training.

### Common components of programs that reported a significant outcome

Of the three studies with significant findings, all three strategies targeted a specific issue and provided participants with a toolkit, manual, workbook, and or other practical resources (see Table A9). Two utilised an evidence-informed model or resources and were conducted over more than one session (ANEW and EDOPC project). Two taught participants how to use appropriate standardised screening and assessment tools (EDOPC project and FAS program) – the third did not require the use of such tools. Two conducted the training in an interactive manner that encouraged trainee participation (ANEW and FAS program). One study actively incorporated a cultural component to ensure culturally safe and appropriate approaches (EDOPC project) and another identified that discussion of cultural issues affecting clients is important in the women-centred practice they were promoting (ANEW).

### 3.3.5 SUMMARY AND CONCLUSIONS

Most of the evidence reported in this summary indicates that educational interventions for health and social service providers are effective for improving screening and confidence in working with high risk families (refer Box 11).

<b>Box 11. Areas in which workforce development programs have had some level of success</b>	
<ul style="list-style-type: none"><li>• Confidence in screening, intent to screen, and actual screening</li><li>• Identification and care for women with psychosocial issues (e.g. domestic violence, past sexual abuse)</li></ul>	<ul style="list-style-type: none"><li>• Confidence and skills to manage women at risk for alcohol-exposed pregnancy</li><li>• Documentation of possible physical child abuse</li></ul>

However, the limited number of studies included in this review and the study limitations identified above indicate that no strong conclusions can be drawn. The strategies share a number of common elements, as shown in Box 12, such as targeting a specific issue, providing participants with a toolkit, manual, workbook, and or other practical resources, utilising an evidence-based model or resources, training to use standardised tools, and conducting training in an interactive manner. While workforce development strategies may be useful in changing worker behaviour it is not clear how or if this translates into better outcomes for children and families.

<b>Box 12. Program and service delivery components of workforce development programs that may contribute to successful outcomes</b>	
<ul style="list-style-type: none"><li>• Targeted a specific issue</li><li>• Evidence-based model or resources</li><li>• Interactive training</li></ul>	<ul style="list-style-type: none"><li>• Cultural component</li><li>• Participant toolkit, manual, workbook, practical resources</li></ul>

## 3.4 SCREENING AND ASSESSMENT

### 3.4.1 WHAT IS THE AIM OF THIS EVIDENCE SUMMARY?

This evidence summary consolidates the findings from two systematic reviews and one evaluation of screening and assessment strategies identified in the literature review. Key information about these studies, the strategies evaluated, and the effect on parent and child outcomes can be found in Tables A1 to A4 (Appendix 2).

### 3.4.2 STUDY CHARACTERISTICS

The first systematic review examined the effectiveness of antenatal psychosocial assessment in reducing perinatal mental health morbidity (Austin, Priest, & Sullivan, 2008) and the second assessed the sensitivity, specificity, and predictive value of brief screening questionnaires for identifying problem alcohol consumption during pregnancy (Burns, Gray, & Smith, 2010). Austin et al. (2008) sought randomised or quasi-randomised controlled trials for inclusion in their review and found two eligible studies, one conducted in Canada and one in Australia. Burns et al. (2010) sought cohort or cross-sectional studies comparing one or more brief alcohol screening questionnaires for inclusion in their review and found five eligible studies, all conducted in the USA.

The single evaluation identified was conducted in Greece and examined the validity, feasibility, and utility of the KINDEX tool (Greek version) for prenatal assessment of psychosocial risk factors (Spyridou, Schauer, & Ruf-Leuschner, 2015). KINDEX interviews were conducted with 93 women aged 20 to 44 years (average age = 31 years) who were 10 to 33 weeks pregnant. To validate the tool, women with two or more risk factors identified during the interview were referred to the mental health attention unit of the hospital where diagnostic interviews were conducted with a randomised sub-sample of 50 women using established diagnostic instruments for stress and psychopathology.

### 3.4.3 EVIDENCE OF EFFECTIVENESS

Austin et al. (2008) found insufficient evidence to determine whether routine antenatal psychosocial assessment by itself improved perinatal mental health outcomes. One study in this review examined the impact of the ALPHA antenatal tool on clinician awareness of psychosocial risk and found a non-significant trend towards increased awareness of 'high level' risk among clinicians who used the tool. A secondary analysis found that ALPHA failed to detect concern for depression. The other study examined the effect of an intervention (where Edinburgh Depression Scale scores were communicated to the women and their healthcare providers along with a patient information booklet) on Edinburgh Postnatal Depression Scale scores. No significant differences were found between the intervention and standard care group. Both studies had significant methodological limitations, including high rates of participant drop-out and one study did not take into account the effect of clustering. Re-analysis of both studies resulted in non-significant findings.

Burns et al. (2010) examined studies evaluating a total of seven brief alcohol screening questionnaires: AUDIT, AUDIT-C, CAGE, NET, SMAST, T-ACE, and TWEAK<sup>1</sup>. The authors found that T-ACE, TWEAK, and

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<sup>1</sup> AUDIT: Alcohol Use Disorders Identification Test; AUDIT-C: AUDIT consumption questions; CAGE: Cut-down, Annoyed, Guilt, Eye-opener; NET: Normal, Eye-opener, Tolerance; SMAST: Short Michigan Alcohol Screening Test; T-ACE: Take, Annoyed, Cut down, Eye-opener; TWEAK: Tolerance, Worried, Eye-opener, Amnesia, Kut-down.

AUDIT-C had the highest levels of sensitivity and specificity for detecting risk drinking, and AUDIT-C may also be useful for identifying alcohol dependency or abuse. CAGE and SMAST performed poorly in detecting risk drinking. It is unknown whether these tools would perform similarly when administered as stand-alone tools as they were not administered independently in the included studies. The quality of the included studies was generally good but limited by lack of blinding and generalisability beyond the study populations. Further the studies excluded women with substance use/dependence, the intention to terminate the pregnancy, over six months alcohol abstinence, non-English speakers, and women aged under 18 years.

In their evaluation of the KINDEX tool (Greek version), Spyridou et al. (2015) conclude that its use in the Greek public health sector is feasible, untrained medical staff can make accurate referrals based on the KINDEX interview, and that the KINDEX has good criterion-related concurrent validity. The authors recommend the use of the KINDEX with low-threshold but evidence-based intervention programs for pregnant women. This study is limited by a small sample size (less than 100 participants), generalisability beyond the study population and issues of external validity.

### Universal screening

A recent report to the Australian National Council on Drugs (Taplin, Richmond, & McArthur, 2014) reviewed the research evidence on maternal screening for alcohol and other drug (AOD) use during pregnancy. The authors found that universal screening for AOD use during pregnancy (including tobacco) conducted by non-judgemental health professionals during antenatal visits is recommended, despite there being limited evidence. Universal screening reduces stigma and targeted screening of marginalised groups, and improves the identification of AOD use in pregnancy. Some evidence was also found that women are more likely to reduce their AOD use if their partners are also encouraged to reduce their substance use. It is recommended that when risky or dependent substance use is identified during screening, individuals receive a brief intervention or are referred to pharmacological treatment, residential treatment, or counselling.

### 3.4.4 SUMMARY AND CONCLUSIONS

There is insufficient evidence of quality to determine if screening and assessment tools administered independently can be useful strategies for working with vulnerable families during pregnancy and infancy. There is some evidence to suggest that universal screening improves the identification of AOD in pregnancy.

Evidence available suggests that screening alone is likely to be ineffective in improving outcomes for families during pregnancy and infancy ( $\leq 3$  years) at risk of violence or other forms of risk without being followed by an evidence-based intervention.

## **4 EXPERT PANEL CONSULTATION**

The aim of this consultation was to contextualise the evidence summaries and strategies for the Australian policy and practice context. Panel members reviewed the evidence summaries and discussed what was missing along with any other information they perceived as relevant. See Appendix 1 for the list of expert panel members.

### **4.1 CONTEXT FOR INTERPRETING THE EVIDENCE SUMMARIES**

The additional information raised by the expert panel provided a contextual background within which the evidence summaries should be interpreted and is discussed below.

#### **4.1.1 OUTCOMES OF FAMILIES DURING PREGNANCY AND INFANCY (UNDER 4 YEARS)**

Two distinct sets of outcomes for families during pregnancy and infancy were identified both in the evidence summaries and during the consultation with the expert panel. The first were pregnancy and birth outcomes, including factors such as child gestational age, preterm labour or birth, birth weight, infant substance dependence, and maternal mental and physical health.

The second were outcomes associated with infancy (between ages 0 and 3, inclusive), which includes assessing factors related to child, maternal, and paternal physical, mental, and social health and well-being as well as adverse experiences such as child abuse and neglect or domestic violence.

These distinctions highlight the importance of aligning program objectives to the specific pre- and post-natal needs of high risk families and provide two discrete points for intervention.

#### **4.1.2 STRATEGIES NOT CAPTURED IN THE RAPID LITERATURE REVIEW**

Panel members identified a number of strategies that may be relevant for inclusion in this project; however, many either had not been subject to rigorous evaluation, as noted above, or were not designed specifically for families during pregnancy or infancy (0-3 years, inclusive). These included: Bumps to Babes and Beyond Project, the Flinders Medical Centre Children's Assessment Team, the GAP Taskforce on early childhood education, Multi-Systemic Therapy-Child Abuse and Neglect, Parent Child Interaction Therapy, Perinatal Family Conferencing for at-risk Newborns, Safe Start (a component of the Families NSW whole-of-government initiative to improve mental health outcomes for parents and infants), the Safe Environment for Every Kid paediatric primary care model (SEEK model), Team around the Child (UK), and What Were We Thinking (WWWT).

Five strategies were identified as relevant for inclusion in this project: Baby Basket, Community Bubs, Cradle to Kinder, right@home, and the ZERO TO THREE Safe Babies Court Teams (SBCT). One of these (Baby Basket) was identified through a search of the Australian Institute of Family Studies (AIFS) Research and Evaluation Register 2011-2015. Three of these strategies (Baby Basket, Community Bubs, and SBCT) have been subject to completed evaluations and have been incorporated into the evidence summaries. The remaining two strategies (Cradle to Kinder, right@home) are both currently undergoing evaluation and are briefly described below.

The Cradle to Kinder program is an intensive ante- and post-natal support service that provides family and early parenting support for young pregnant women (under 25 years) with a child protection report

for an unborn child (Victoria Government Department of Health and Human Services, 2015). This whole-of-family service is provided up until the infant turns 4 years of age and includes pre-birth support, intensive interventions (both short and longer term), and case work support. The program aims to build parent self-reliance and sustainability as well as their capacity to provide for their child's health, safety, and development. The Cradle to Kinder program is currently being evaluated and is expected to be completed in 2016 (Australian Institute of Family Studies, n.d.).

The right@home sustained nurse home visiting program aims to promote family wellbeing and child development (Australian Research Alliance for Children & Young People, n.d.). The program is based on the Maternal Early Childhood Sustained Home-visiting (MECSH) program but includes additional evidence-based modules aimed at helping parents care for and respond to their children, and creating supportive home learning environments. It is not clear at this stage whether this is a universal program for all families with children up to 2 years or targeted to specific families. right@home is currently being implemented in Australia as a multi-state randomised controlled trial that aims to determine what improvements can be made to the universal child and family health nursing service so that it can better meet the needs of all families. The trial has two phases: 1) to determine if extra visits provided to families up to a child's 2<sup>nd</sup> birthday helps parents improve their knowledge and skills in topics such as feeding, parenting, and managing their baby's sleep; and 2) to identify any long-lasting effects that these extra visits may have on the early learning and development of children by the time they start school. Findings for phase 1 are expected to be reported in 2016-17 and phase 2 in 2018-19 but were not available at the time of writing the current report.

#### **4.1.3 LACK OF EVALUATION DOES NOT INDICATE LACK OF STRATEGIES**

A conspicuous lack of evaluation of existing programs for families during pregnancy and infancy emerged from the expert panel discussion. Panel members identified that there are a multitude of programs for this target group operating across Australia but that these programs did not meet the evidence threshold for the literature review. Ranging from large scale policy responses (e.g. antenatal screening and referral) to small-scale local programs, these programs had not been subject to rigorous independent evaluation. Additionally, there are a number of programs currently undergoing evaluation for which the results have not yet been published (e.g. right@home, Cradle to Kinder).

It was emphasised that evaluation of the existing strategies would be more beneficial in determining what works for supporting and improving outcomes of families during pregnancy and infancy rather than adding other untested programs or responses into the milieu.

#### **4.1.4 ISSUES SURROUNDING UNBORN CHILD NOTIFICATIONS IN AUSTRALIA**

Issues surrounding unborn child high risk birth alerts and unborn child notifications were raised during the expert panel consultation.

Unborn child high risk birth alerts are issued by statutory child protection agencies to health services with the intent of connecting at-risk pregnant women (i.e., women who are pregnant while also experiencing significant health risk factors such as domestic and family violence, substance abuse, unmanaged mental health issues and lack of participation in antenatal care) to health and social care prior to the birth of their child (NSW Health, 2013). Pre-birth, or perinatal conferencing aims to mobilise support services for pregnant women experiencing vulnerability in order to engage women

to reduce the identified risks. The concern was raised that high risk birth alerts were sometimes used as a surveillance and monitoring tool in order to assess post birth whether the child needs to be removed into out of home care rather than with the intent to connect high risk pregnant women to antenatal services. The high risk birth alert policy has not been evaluated to date.

Two additional concerns were raised with respect to unborn child notifications (i.e. notifications by reporters made to statutory child protection agencies). The first was that unborn child notifications or reports are responded to by statutory child protection agencies in line with competing priorities of born children and as such are often considered a lower priority compared to born children who may be at immediate risk of harm. Additionally, while suspected risk to a foetus can be reported without the pregnant woman's consent, any prenatal child protection interventions delivered by statutory agencies are voluntary and require the pregnant woman's consent (Taplin, Richmond & McArthur, 2014). For example, in NSW, parental responsibility contracts are used to address child safety and wellbeing concerns by encouraging parents to improve their parenting skills and accept greater responsibility for the care of their child (NSW Government Department of Family and Community Services, 2014). In 2014, the scope of parental responsibility contracts was broadened to include expectant parents with the aim of helping parents to reduce the risks identified prenatally (*Child Protection Legislation Amendment Act 2014* (NSW), s. 38A). These contracts are entered into on a voluntary basis but, once signed, the contracts are a binding agreement and have legal consequences. There is no publicly available evaluation on whether and how parental responsibility contracts help in the first 1000 days of a child's life.

The second concern was that instead of being viewed as an opportunity for working closely with pregnant women under an early intervention and prevention framework, some practitioners may see the submission of an unborn child notification to a child protection service as the end of their responsibility to the family. This issue could be addressed through appropriate and ongoing workforce development training to ensure practitioners understand that their role and responsibility expands beyond just making an unborn child notification.

#### **4.1.5 VULNERABLE FAMILIES HAVE MULTIPLE AND COMPLEX NEEDS**

Panel members emphasised that high and at-risk families have multiple and complex needs that all need to be addressed in order to improve their outcomes. A case example of a family with multiple and complex needs involving an unborn notification is provided in Box 13. This example is representative of families who are struggling in the first 1000 days of a child's life.

Simple solutions cannot adequately address this complexity. Responses need to be holistic and integrated, wrapping around the family and addressing their needs in all domains of life. Organisations working in different service sectors (e.g. public health, mental health, education, and child and family) need to effectively collaborate in order to provide these integrated services. Panel members highlighted that promising collaborative approaches already exist but more investment is required to ensure these run smoothly and effectively.

**Box 13. Case example of a family with multiple and complex needs**

A pregnant woman presents to a health service in premature labour at 32 weeks pregnant with a broken wrist. Hospital staff identify that there were several issues – mental health and drug and alcohol concerns, no accommodation, two of the woman’s other 4 children were in the care of the maternal grandmother and the woman resisted offers of assistance from family support services.

Two weeks later the woman presents to a drug and alcohol worker. The worker contacts the statutory child protection agency to find out if the agency know about the woman’s issues as the worker has concerns for the unborn child. The statutory agency then became involved and, while they closed the case on their system, say they are going to have an “interagency case discussion” without the woman present.

The drug and alcohol worker finds out from talking with the woman that the eldest of the two children that live with her is school refusing. These children are aged 2 and 8 years and sometimes she pushes them around the street in a shopping trolley during the day because she has to wait until 3 pm that afternoon for the department of housing to contact her to tell her if she will be going to the same hotel that night or a different one. The woman also advised that her partner was domestically violent and was responsible for her broken wrist. She notes that she has tried to get him anger management help but there are no programs to help violent men and the health service does not see perpetrators of violence<sup>1</sup>.

The drug and alcohol worker contacts the statutory intake service 5 weeks later, very concerned about not hearing from the woman. The statutory agency advises that the case is closed and the worker should call the Police to do a welfare check if they are worried.

Several weeks later the statutory agency calls the drug and alcohol worker to advise the baby had been born interstate; however, no one can find the woman and the woman’s family (mother) are not saying where the woman and her children are. Eventually the woman calls the drug and alcohol worker and wants an appointment for her, her partner and her eldest child, who is now 9 years of age.

The drug and alcohol worker sees the family and makes 7 referrals – a school liaison officer (to get the children into school), a child and family counsellor for the 9 year old, family support service for budgeting and household assistance, men’s group for the violent father, child and family health nursing for the mother and infant, department of housing, and a paediatrician for the 2 year old who appears delayed in all aspects of their development. Despite being referred to all these services, the family has no stable housing, and no car for transport to get to appointments etc.

The male partner of the woman works as a casual labourer and often smokes ICE during his lunchbreak. He says this helps him get things done, but makes him want to hit the kids even if they probably don’t deserve to be hit. The male partner also says that it is much better to scream at the kids than hit them, even if you scream at them so loud that they wet their pants with fright.

All of these issues are reported to the statutory child protection agency, who is still deciding if they are able to allocate a case worker, because the risks are significantly reduced “now that so many services are involved.”

<sup>1</sup>There are a number of men’s behaviour change programs running throughout Australia. For example court referred DV Prevention Programs (DVPPs) are available in South Australia and men’s behaviour change programs are provided by Government and non-government services throughout NSW

#### **4.1.6 FAMILIES MOST IN NEED MAY BE EXCLUDED**

It was highlighted by expert panel members that some strategies may exclude families who are most at risk as they do not have the resources to address their complex needs. The research summaries highlight that resource intensive approaches such as home visiting and collaborative approaches appear to be the most promising interventions among those reviewed to address the needs of at-risk pregnant women, women with young children and infants entering foster care. However, it is not clear if high risk families with complex needs were included in the evaluations of these programs. A recent review of the evidence for the effectiveness of multi-disciplinary child abuse teams in responding to child abuse found that physically and sexually abused children and their families were more likely to receive mental health and support services, be referred to medical services and that the teams were more likely to have higher rates of child protection substantiations (Herbert & Bromfield, 2017) than families receiving an unco-ordinated agency response. This research underpins the view that complex needs families require a multifaceted response that is collaborative rather than fragmented.

#### **4.1.7 COLLABORATIVE APPROACHES NEED APPROPRIATE FUNDING MODELS**

The issue of collaborative approaches and the corresponding need for funding models that facilitate this approach was raised by expert panel members. It was highlighted that due to the siloed nature of funding models within each service sector, confusion can occur around who is funded to do what which can lead to families being handballed backwards and forwards between organisations or falling 'between the cracks'.

Panel members suggested that collaborative approaches could operate more smoothly and effectively if funded through pooled funding models where departments across different sectors all invest funds for an integrated, single-location service that is located within one sector (e.g. health or child protection) but addresses all needs covered by each individual sector. Such funding models would allow the organisation within that one sector to employ or second from another sector appropriately qualified and experienced professionals from each service sector without worrying about funding origins. In doing so, the organisation can offer an integrated service with a multi-disciplinary team that works with the family to discern how their many different needs can be addressed and develop a co-ordinated care plan. Dedicated perinatal and postnatal coordinators would be essential members of such teams.

We have seen this collaborative model operating from time to time in the child protection sector already. For example, the Mental Health Liaison Project (MHLP), which operated out of a Families SA District Office in the mid- to late-2000s, aimed to assist parents experiencing mental health difficulties continue to safely care for their children. The MHLP utilised a multidisciplinary approach to fast-track referrals for these parents by housing an experienced Mental Health Nurse within the intake and assessment team at the District Office as the Project Officer who assisted with assessing parent need and mobilising services in response to those needs. The MHLP greatly facilitated parent access to mental health treatment and enhanced child protection assessments as the team were aware of the impact of mental health problems on parenting (Zufferey, Arney, & Lange, 2006).

It could be useful to track families receiving such a service from intake to outcome to document what it actually takes to get a family seen and whether that service meets the family's needs.

## 5 WORKING GROUP CONSULTATION

The aim of this consultation was to gain the insights of the Working Groups regarding the enhanced evidence summaries and how the findings can be translated into policy. Working Group members reviewed the evidence summaries and discussed what was missing, how the findings translate into policy and what needs to be done before the summaries can adequately inform policy and strategy development.

### 5.1.1 IDENTIFYING ESSENTIAL COMPONENTS OF SUCCESSFUL STRATEGIES

The Working Group consultation emphasised the need for evidence summaries to identify strategy elements that contribute to success which could inform future strategy development. The research team re-examined the literature to identify elements that were common across strategies that have shown some success in improving outcomes for vulnerable families during pregnancy and infancy. Findings from this critical analysis have been incorporated into the evidence summaries. A summary of critical elements identified from the literature, from consultation with the expert panel and the working group are presented in the next chapter.

### 5.1.2 LACK OF RESEARCH REGARDING OUTCOMES FOR ABORIGINAL PEOPLE

The working group also emphasised the lack of research regarding specific programs and or outcomes for Australian Aboriginal<sup>2</sup> families during pregnancy and infancy. This lack of research does not necessarily indicate a lack of promising strategies targeting vulnerable Aboriginal families. Following the Working Group consultation, the researchers examined a small number of programs specifically targeting Aboriginal families identified in the consultation, including: the Australian Nurse-Family Partnership Program (ANFPP; Ernst & Young, 2012); Intensive Family Support Services (IFSS; Tilbury, 2015); and Regional Family and Anangu Bibi Birthing Programs (RFBP/ABBP; Stamp et al., 2007; 2010).

Whilst all strategies have been subject to some level of evaluation, their research designs did not meet the criteria for inclusion in the rapid literature review. Each are briefly described below.

The ANFPP aims to improve the health wellbeing and self-sufficiency of young mothers and their children and operates in three locations across Australia (Ernst & Young, 2012). It is based on the evidence-based US Nurse-Family Partnership model but was adapted to suit the Australian context and implemented in 2009. Approved adaptations included the: inclusion of an Aboriginal Family Partnership Worker to complement the home visiting team; expansion of the client group to include multiparous mothers where suitable; and adaptation of the program to the Australian Aboriginal culture and context. It is targeted at first time young mothers (age undefined) of Aboriginal children who are offered the service during pregnancy and continues through their child's first two years of life. It is delivered by nurses and family partnership workers who undertake comprehensive program training along with ongoing reflective practice and professional development. The program is prevention-oriented, client-centred, strengths-based, and solution-focused. It targets a wide range of outcomes primarily associated with parent education, skills development and life planning and child

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<sup>2</sup> The term 'Aboriginal' refers to both Aboriginal and/or Torres Strait Islander people.

health, development and safety. The home visits are conducted in a structured manner and nurse home visitors follow visit by visit guidelines to ensure program fidelity.

An evaluation framework was developed in 2011 for the ANFPP and stage one findings were published in 2012 (Ernst & Young, 2012). At this time it was too early to determine the effectiveness of the program but qualitative and observational data indicated promising findings that ANFPP was suitable and acceptable for the communities in which they were implemented and some early objectives had been achieved. The Aboriginal Family Partnership Workers and flexibility in the location of visits were both seen as essential to program success. Mothers reported increased confidence and competence which was supported through observation during interviews and indications of positive mother-child attachment and interaction were identified. This program has not been adequately assessed within metropolitan areas as these sites ceased service provision at early stages. Findings from later stages of evaluation have not been published at the time of writing the current review, so program effectiveness has not yet been determined.

Intensive Family Support Services (IFSS) are secondary services that focus on child protection and target Aboriginal families who are in contact or at high risk of contact with the statutory child protection system (Tilbury, 2015). They aim to ensure the care, safety, and wellbeing of children by improving family functioning. In addition, IFSS also aim to prevent 1) child abuse and neglect, 2) family problems from getting worse, and 3) the unnecessary placement of children into out of home care. IFSS are delivered by Aboriginal community-controlled organisations and have a minimum duration of six weeks with a minimum of 15-20 hours of direct family support work per week at the period of highest intensity (intensity of operation varies throughout service duration). The services must also include the following core elements: services are matched to child and family needs, staff develop trusting relationships and partnerships with family members, service provision includes a mix of practical, educational, and therapeutic supports for children and families, service intensity and duration are as specified above, families participate in decision making and case planning, and services are delivered in a culturally competent and respectful manner.

A qualitative evaluation of five IFSS was conducted by Tilbury (2015) and comprised workshops with staff and managers and interviews with participating family members. While this evaluation provided an insight into factors that may contribute to program success, the effectiveness of the program cannot be adequately determined due to its qualitative design. Findings identified the following important elements of service delivery:

- comprehensive initial and ongoing assessments at the individual, family, and structural levels that are open-minded and non-judgemental;
- incorporation of parental goals and perspectives in interventions, case planning and goals;
- specific and well-communicated goals that instil positivity and commitment in parents;
- delivery of services within a case management framework;
- locally and culturally appropriate assessment tools;
- use of a wide range of assessments (targeted and specialist), referrals and other services;
- services must have good working relationships at all levels with statutory agencies;
- adequate organisational support, low caseloads, and “hands-on” case work to allow enhanced service delivery; and
- provision of a range of practical, educational, therapeutic, and advocacy supports.

Families reported increased confidence and ability to enact positive change, manage child behaviour and problems getting them to attend school regularly, leave violent relationships, ask for help, manage household budget and establish daily routines. Families also reported having better relationships and more communication within the family, as well as having fun with their children, getting the statutory agency “out of their life” and having children returned to their care.

The Regional Family Birthing Program (RFBP) and Anangu Bibi Birthing Program (ABBP) are individual- and culturally-focused models of perinatal care operating in two locations in South Australia’s far north region (Stamp et al., 2007). Both programs target pregnant Aboriginal women of all ages and RFBP also includes pregnant non-Aboriginal teenage women in their target group. Women with any of the following risk factors are accepted into the programs: young age, social disadvantage, substance use, and poor obstetric history such as medical complications during pregnancy or a previous perinatal death. These programs aim to provide culturally appropriate obstetric support and holistic care to address the women and children’s physical, spiritual, emotional, and social needs. RFBP provides antenatal and postnatal care, but not birthing care, whilst ABBP provides antenatal, birthing, and postnatal care. Services are provided from pregnancy through to 6-8 weeks after birth by Aboriginal Maternal and Infant Care (AMIC) workers and midwives who follow each mother from service entry to exit. AMIC workers are trained in antenatal, birthing, and postnatal care and may be trained Aboriginal health workers. Stamp et al. (2010, p35) outlined the following key program elements:

- expert cultural guidance from an Aboriginal Women’s Advocacy Group that included elders from language groups local to the area;
- creation of a new AMIC worker position in a leadership role;
- education and training for AMIC workers in antenatal, birthing and postnatal care, as appropriate;
- intercultural partnerships and skill exchange between AMIC workers and midwives, with general practitioner assistance;
- commitment to continuity of care and primary health care principles; and
- a management group for program support.

The RFBP and ABBP were evaluated using a qualitative and quasi-experimental quantitative research design (Stamp et al., 2007). However, the quantitative findings are very limited due to the following reasons: 1) sample size disparity between comparison groups and lack of statistical significance testing due to the very small sample (10 Aboriginal program participants compared to 54 non-Aboriginal rural new mothers); and 2) lack of comparison or control group for perinatal outcomes, maternal tobacco and cannabis use, number of clinical antenatal visits and gestation age at first visit. Tobacco and cannabis use was measured at two time points (at first visit and in second half of pregnancy or last postnatal visit) but little or no change was observed. Substantial differences were observed in feeding method at discharge compared to the last postnatal visit for women in the RFBP but not ABBP – fewer women were breastfeeding 6 to 8 weeks after birth. Stamp et al. (2010) report that findings indicate the model is acceptable and beneficial to the community but that consultation and partnerships are crucial elements to program success. The AMIC workers were important for linking the expectant and new Aboriginal mothers with midwives. Given the limitations of this evaluation, the effectiveness of this program was unable to be determined.

A qualitative exploration of the perceptions of Northern Territory practitioners, working in services (community controlled and NGO) that responded to very high risk families, about successful bicultural practice found that practitioners, of whom almost half were Aboriginal, believed their practice was best described as 'two-way' which was defined as "a continuous process of on-the-job learning and reflection at every level of an organisation" (McGuinness & Leckning, 2013, p. 19). A promising co-working practice model was identified where Aboriginal and non-Aboriginal practitioners share a caseload to respectfully engage clients and provide adequate peer practitioner support. Key elements were identified, including:

- First develop a clear, documented two-way practice model (see McGuinness & Leckning, 2013, p. 9);
- Engage in culturally safe practice, with an intensive cultural orientation for new practitioners;
- Underpinning values are fundamentally important in shaping bicultural service delivery and these must be congruent with the values and ethos of the practitioners (governance level). Operational managers able to effectively bridge program and community interests were seen as pivotal for this;
- Build in time for reflective practice; and
- Adapt funding and reporting structures to better support two-way practice (systems level).

## 6 STRATEGY DEVELOPMENT

A rapid review of the literature examining a range of strategies (e.g. workforce development, programmatic responses, collaborative approaches, and place-based responses) implemented to address the needs of expectant parents, their babies and families in which young children may be exposed to violence and other forms of risk provided some evidence of effectiveness.

In particular there was evidence to show that IPV may be reduced when targeted specifically through home visiting, or through behavioural and psychosocial programs delivered prenatally, and through psychological therapy. An interdisciplinary case management program to address intimate partner violence also showed some promising results. However, it is important to note that no programs included fathers of infants or the family unit as a whole.

There is some evidence to suggest that home visiting programs are viable for mothers with illicit drug problems but not for those with alcohol problems. There is also some evidence to show that pregnant women attending integrated substance abuse programs may make more prenatal visits, however it is not known if this translates to reduced risk to children after birth.

No single strategy was identified that was clearly successful in achieving all of its desired outcomes. However, this literature review has highlighted elements of programs and strategies that may potentially contribute to successful outcomes. Primary among them is that programs/strategies:

*Target specific outcomes and include: an explicit objective; a clear target population; a clear theory of change; program components implemented as intended; and a clear alignment between the preceding four elements (Segal et al., 2012)*

Other elements of programs/ strategies identified in the literature that reported some success are outlined in Table 1 below. Common elements across all successful programs/ strategies which should be considered when developing programs/strategies to address the needs of vulnerable expectant parents and young families are outlined in box 14:

<b>Box 14. Common elements of all programs and strategies with successful outcomes</b>	
<ul style="list-style-type: none"> <li>• Screening for specific risk factors (e.g. depression and attachment security)</li> <li>• Targeting adolescent mothers</li> <li>• Individualised interventions</li> <li>• Use of program and service delivery manuals and protocols that have a clearly articulated programme logic</li> <li>• Parenting interventions</li> <li>• Child development interventions</li> <li>• Service referral/linkage</li> </ul>	<ul style="list-style-type: none"> <li>• Periodic assessments of family/child outcomes</li> <li>• Trained qualified staff</li> <li>• Regular supervision of staff</li> <li>• Research informed curricula</li> <li>• Performance indicators</li> <li>• Home visitors reflect the ethnic and cultural background of families</li> <li>• Fidelity monitoring</li> </ul>

**Table 1.** Summary of program and service delivery elements that may contribute to successful outcomes

Strategy	Elements		Successful targeted outcome areas	
<b>Home visiting</b>	<ul style="list-style-type: none"> <li>• Specific strategies to address IPV</li> <li>• Delivered prenatally</li> <li>• High number of visits</li> <li>• Target family retention</li> <li>• Address specific issues</li> <li>• Parenting interventions</li> <li>• Child development interventions</li> <li>• Use of manuals and protocols that have a clearly articulated programme logic</li> <li>• Linking families with services matched to need</li> <li>• Regular supervision and support of home visitors</li> </ul>	<ul style="list-style-type: none"> <li>• Staff training</li> <li>• Minimum skill set matched to programme outcomes</li> <li>• Research informed curricula</li> <li>• Fidelity monitoring</li> <li>• Periodic assessments of family/child outcomes</li> <li>• Measurable child outcome performance indicators</li> <li>• Home visitors' reflect the ethnic and cultural background of families</li> <li>• Target adolescent mothers</li> </ul>	<ul style="list-style-type: none"> <li>• Partner violence</li> <li>• Child development and behaviour</li> <li>• Child physical abuse</li> <li>• Neglect</li> </ul>	<ul style="list-style-type: none"> <li>• Parenting</li> <li>• Maternal stress</li> <li>• Service use</li> <li>• Illicit drug use</li> </ul>
<b>Behavioural/ psychosocial programs</b>	<ul style="list-style-type: none"> <li>• Target a specific issue</li> <li>• Engage trained or qualified staff</li> <li>• Individualised or patient-centred counselling or therapy</li> <li>• Interactive program delivery</li> <li>• Risk assessment or screening for program eligibility</li> <li>• Delivered individually, group or community setting</li> </ul>	<ul style="list-style-type: none"> <li>• Program manual</li> <li>• Educational content</li> <li>• Referrals to other services and organisations</li> <li>• Delivered over a number of sessions</li> <li>• Run over the course of a month or more</li> <li>• Based on evidence from the literature</li> </ul>	<ul style="list-style-type: none"> <li>• Infant attachment security in high-risk families</li> <li>• IPV in the second or third trimester</li> <li>• Alcohol consumption</li> <li>• General and social self-efficacy</li> <li>• Parent-child relationship/ attachment</li> <li>• Parenting stress</li> <li>• Intergenerational family conflict</li> <li>• Family relationships</li> </ul>	<ul style="list-style-type: none"> <li>• Tangible social support</li> <li>• Maternal reflective functioning</li> <li>• Maternal caregiving behaviour</li> <li>• Infants remaining safely at home in the care of their parent/s</li> <li>• Development and maintenance of appropriate community connections</li> <li>• Housing, financial, and key relationship stability</li> </ul>
<b>Substance abuse programs</b>	<ul style="list-style-type: none"> <li>• Ongoing counselling</li> <li>• Individualised care plans</li> <li>• Risk assessment or screening</li> </ul>	<ul style="list-style-type: none"> <li>• Additional supports such as childcare or assistance contacting services</li> </ul>	<ul style="list-style-type: none"> <li>• Higher birth weights</li> <li>• Larger head circumferences;</li> <li>• Negative toxicology screens</li> </ul>	<ul style="list-style-type: none"> <li>• Prenatal visits</li> <li>• Premature birth</li> </ul>
<b>Domestic violence programs</b>	<ul style="list-style-type: none"> <li>• Focused on a specific issue</li> <li>• Trained or qualified staff</li> <li>• Therapeutic component</li> <li>• Delivered individually</li> </ul>	<ul style="list-style-type: none"> <li>• Risk assessment or screening</li> <li>• Individualised safety or care plans</li> <li>• Referrals to other services and organisations as required</li> </ul>	<ul style="list-style-type: none"> <li>• Domestic violence at any point during pregnancy and/or in the postnatal period</li> <li>• Reduced psychological abuse</li> <li>• Minor physical violence</li> <li>• Safety behaviours</li> </ul>	<ul style="list-style-type: none"> <li>• Assisted ventilation, low birth weight, and preterm delivery</li> <li>• Use of services</li> <li>• Maternal drug use early in pregnancy</li> <li>• Time in foster care</li> </ul>
<b>Collaborative approaches</b>	<ul style="list-style-type: none"> <li>• Ongoing case management</li> <li>• On-call or urgent care</li> <li>• Ongoing counselling</li> <li>• Referrals and community linkages</li> </ul>	<ul style="list-style-type: none"> <li>• Family or person-centred</li> <li>• Educational content</li> </ul>	<ul style="list-style-type: none"> <li>• Compliance rates with prenatal visits</li> <li>• Maternal and neonatal outcomes</li> </ul>	<ul style="list-style-type: none"> <li>• High discharge rates of infants in the care of their mothers</li> </ul>

**Table 1.** Summary of program and service delivery elements that may contribute to successful outcomes

Strategy	Elements		Successful targeted outcome areas
<b>Workforce development</b>	<ul style="list-style-type: none"> <li>Targeted a specific issue</li> <li>Participant toolkit, manual, workbook, practical resources</li> </ul>	<ul style="list-style-type: none"> <li>Evidence-based model or resources</li> <li>Interactive training</li> <li>Cultural component</li> </ul>	<ul style="list-style-type: none"> <li>Confidence in screening, intent to screen, and actual screening.</li> <li>Confidence and skills to manage women at risk for alcohol-exposed pregnancy.</li> <li>Documentation of possible physical child abuse identification and care for women with psychosocial issues (i.e. Domestic violence, past sexual abuse).</li> </ul>
<b>Aboriginal children and families</b>	<ul style="list-style-type: none"> <li>Expert cultural guidance that includes elders from language groups local to the area;</li> <li>Aboriginal Maternal and Infant Care (AMIC) worker position in a leadership role; trained in antenatal, and postnatal care, as appropriate;</li> <li>Intercultural partnerships and skill exchange</li> <li>Commitment to continuity of care and primary health care principles;</li> <li>Management group for program support;</li> <li>Aboriginal Family Partnership Workers and flexibility in the location of visits;</li> <li>Services matched to child and family needs;</li> <li>Staff develop trusting relationships and partnerships with family members;</li> <li>Service provision includes a mix of practical, educational, and therapeutic supports for children and families;</li> <li>Families participate in decision making and case planning;</li> <li>Services delivered in a culturally competent and respectful manner.</li> </ul>	<ul style="list-style-type: none"> <li>Comprehensive initial and ongoing assessments at the individual, family, and structural levels that are open-minded and non-judgemental;</li> <li>Incorporation of parental goals and perspectives in interventions, case planning and goal;</li> <li>Specific and well-communicated goals that instil positivity and commitment in parents;</li> <li>Delivery of services within a case management framework;</li> <li>Locally and culturally appropriate assessment tools;</li> <li>Use of a wide range of assessments (targeted and specialist), referrals and other services;</li> <li>Services have good working relationships at all levels with statutory agencies;</li> <li>Adequate organisational support, low caseloads, and “hands-on” case work to allow enhanced service delivery;</li> <li>Provision of a range of practical, educational, therapeutic, and advocacy supports;</li> <li>A clear, documented two-way practice model;</li> <li>Service delivery congruent with practice values and ethos;</li> <li>Intensive cultural orientation for new practitioners.</li> </ul>	<ul style="list-style-type: none"> <li>Maternal confidence and competence</li> <li>Mother-child attachment and interaction</li> <li>Confidence and ability to enact positive change</li> <li>Manage child behaviour and problems getting them to attend school regularly</li> <li>Leave violent relationships</li> <li>Ask for help</li> <li>Manage household budget and establish daily routines.</li> <li>Better family relationships and more communication within the family</li> <li>Getting the statutory agency “out of their life” and having children returned to their care.</li> </ul>

Box 15 outlines the essential elements of strategies specific to vulnerable Aboriginal expectant families and families with young children.

**Box 15. Essential elements of strategies specific to Aboriginal new and expectant families**

- Expert cultural guidance that includes elders from language groups local to the area
- Aboriginal Maternal and Infant Care (AMIC) worker positions in a leadership role; trained in antenatal, and postnatal care, as appropriate
- Intercultural partnerships and skill exchange
- Locally and culturally appropriate assessment tools
- Aboriginal Family Partnership Workers and flexibility in the location of visits
- A clear, documented two-way practice model
- Service delivery congruent with practice values and ethos
- Intensive cultural orientation for new practitioners

When considering existing or new interventions to address child maltreatment risk factors for expectant parents, their babies and families with very young children in the Australian context it will also be important to ensure that:

- Program outcome objectives are aligned to the specific pre- and post-natal needs of high risk families – the literature shows that these are two discrete points for intervention requiring different strategies
- Issues associated with unborn child high risk birth alerts (i.e., use of high risk birth alerts as a surveillance and monitoring tool) and unborn child notifications (i.e., submission of an unborn child notification to a child protection service viewed as the end of a practitioner's responsibility to the family; prioritising statutory responses to born children who may be at risk of immediate harm above unborn child notifications; prenatal child protection interventions delivered by statutory agencies are voluntary and require the pregnant woman's consent)
- The multiple and complex needs associated with high and at-risk families are addressed in order to improve their outcomes.

There are many programs currently in operation in Australia that have not been evaluated and therefore were not included in this research review. It may be that evaluation of these existing strategies would be more beneficial in determining what works for supporting and improving outcomes of families during pregnancy and infancy in preference to adding other untested programs or intervention strategies into the child and family welfare setting.

There was very little information available in the research about engaging and retaining high risk families in programs. This is an important component of service delivery that requires focussed attention. Program attrition rates in the majority of studies examined were high.

Importantly, responses to address the complex lives of at risk families require interventions that are holistic and integrated, and that wrap around the family and address their needs in all of life's domains. This requires organisations working in different service sectors (e.g. public health, mental health, education, and child and family) to effectively collaborate to provide integrated services. Such a model of service delivery will require funding models that facilitate this approach.

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## APPENDIX 1: EXPERT PANEL MEMBERS

Ms Alison Brook	National Executive Officer, Relationships Australia, ACT
Associate Professor Alwin Chong	Associate Professor, Australian Centre for Child Protection, University of South Australia, SA
Ms Cara Gleeson	Program Manager Children and Young People, ourwatch.org.au, Vic
Professor Fiona Arney	Director, Australian Centre for Child Protection, University of South Australia, SA
Dr Jacqueline Beall	Vice President, Australian Assoc. for Infant Mental Health Director, Child Protection Service and Flinders Medical Centre, Flinders University, SA
Ms Jane French	DHS Director, 1800 RESPECT, Vic
Associate Professor Julian Grant	School of Nursing and Midwifery, Flinders University, SA
Dr Kristine Battye	Director & Senior Consultant, Kristine Battye Consulting Pty Ltd. NSW
Professor Leah Bromfield	Deputy Director, Australian Centre for Child Protection, University of South Australia, SA
Dr Melinda Polimeni	Practice design leader, Parenting Research Centre, Vic
Ms Rosa Flaherty	Child Protection Manager NNSW LHD, Chief Executive Unit, NSW
Dr Sally Brinkman	Co-Director of the Fraser Mustard Centre, Adjunct Associate Professor, School of Population Health, Adelaide University, SA
Ms Samantha Page	CEO, Early Childhood Australia, ACT
Dr Sarah Mares	Senior Staff Specialist, Infant, Child and Family Psychiatrist, Karitane, NSW
Ms Stella Conroy	Deputy CEO, Secretariat, National Coalition on Child Safety and Wellbeing. Families Australia, ACT
Associate Professor Stephanie Taplin	Associate Director, Institute of Child Protection Studies, Australian Catholic University, ACT

## APPENDIX 2: OUTCOME AND SUMMARY TABLES

**Table A1.** Significant strategy effects on outcomes for mothers and infants during pregnancy and birth

Strategy	Target Population	Mother Outcomes*											Child Outcomes*				
		Mental health	AOD use	DV	Prenatal visits	Child removal	Preterm delivery	Preterm labour	Birth complications	Placental abruption	Stillbirth	Stable housing	LBW	Birth weight	Gestational age	Head circumference	Toxicology
<b>Home Visitation Programs</b>																	
(SR) HV program targeting parent and child health and behaviour outcomes (Avellar et al., 2013)	Families with pregnant women or children (0-5y) served in developed world context	.	.	.	.	.	(0)	.	.	.	.	.	.	(~)	.	.	.
(SR) Paraprofessional HV for children from disadvantaged families (Peacock et al., 2013)	Mothers and/or children (0-6y) from socially high-risk families	.	.	.	.	.	.	.	.	.	.	.	.	(~)	.	.	.
<b>Behavioural/ Psychosocial Programs</b>																	
Cognitive behavioural interventions (depression, DV, smoking, and passive smoking; Kiely et al., 2010)	African-American pregnant women	.	.	(+)	.	.	(~)	.	.	.	.	.	(~)	.	(+)	.	.
Brief interventions for drinking during pregnancy (Marais et al., 2011)	Pregnant women in a high-risk rural community	.	(+)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
MindBabyBody (Woolhouse et al., 2014)	Pregnant women, >10wks gestation, aged 18-50y	(~)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<b>Other Programs</b>																	
(SR) Interventions preventing/ reducing DV (Jahanfar et al., 2014)	Pregnant women at-risk of or experiencing DV	(?)	.	(?)	.	.	(?)	.	.	.	.	.	(?)	.	.	.	.
(M) Integrated substance abuse treatment programs (Milligan et al., 2011)	Pregnant/ parenting women with substance abuse issues	.	.	.	(+)	.	(+)	.	(+)	.	.	.	(+)	(+)	.	(+)	(+)
<b>Collaborative Approaches</b>																	
Early Start (Taillac et al., 2007)	Pregnant substance abusing women	.	.	.	.	.	(0)	(+)	.	(+)	(+)	.	(0)	.	.	.	.
<b>Screening/ Assessment</b>																	
(SR) Antenatal psychosocial assessment (Austin et al., 2008)	Women with high post-natal psychosocial risk	?	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

\* (+) = positive effect; (-) = negative effect (none found); (0) = no effect; (~) = mixed effects; (?) insufficient evidence; (.) = not examined

**NB.** (M) = meta-analysis; (SR) = systematic review; AOD = Alcohol and/or Other Drug; DV = Domestic Violence; LBW = Low Birth Weight

**Table A2.** Significant strategy effects on outcomes for parents during infancy (child age 0 to 3 years, inclusive)

Strategy	Target Population	Parent Outcomes*													
		IPV	Mental health	AOD use	Breastfeeding	Psychosocial health	Parental coping	Parental stress	Parenting self-efficacy	Parenting knowledge	Health services <sup>a</sup>	Reflective functioning	Family functioning	Parent-infant relationship	Home-safety attitudes
<b>Home Visitation Programs</b>															
Family Spirit (Barlow et al., 2013)	American Indian teens (12-19y) ≤ 32wks pregnant	.	.	(0)	.	(+)	.	.	(+)	(+)	.	.	.	.	(+)
Family Spirit (Barlow et al., 2015a)	American Indian teens (12-19y) ≤ 32wks pregnant	.	(+)	(~)	.	(~)	.	(0)	(+)	(+)	.	.	.	.	.
Family Start (Vaithianathan et al., 2016)	All recorded live born children (Jul 2004 – Dec 2011 inclusive)	(+)	.	.	.	.	.	.	.	.	(?)	.	.	(+)	.
(SR) Programs targeting parent and child health and behaviour outcomes (Avellar et al., 2013)	Families with pregnant women or children (0-5y) served in developed world context	.	.	.	(~)	.	(+)	.	.	.	.	.	.	.	.
(SR) Paraprofessional HV programs for children from disadvantaged families (Peacock et al., 2013)	Mothers and/or children (0-6y) from socially high-risk families	.	.	.	.	.	.	.	.	.	.	.	.	.	.
(SR) Programs for women and children exposed to IPV (Prossman et al., 2015)	Abused mothers, mothers with abused children (no age specified)	(~)	.	.	.	.	.	.	.	.	.	.	.	.	.
(SR) Programs for reducing risk of child maltreatment (Segal et al., 2012)	Pregnant mothers and families with children (0-6mths)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
(SR) Programs for women with substance use issues (Turnbull et al., 2012)	Pregnant or postpartum women with a drug or alcohol problem	.	(0)	(0)	(0)	.	.	.	.	.	(0)	.	.	.	.
<b>Behavioural/ Psychosocial Programs</b>															
(SR) Parent-Infant Psychotherapy programs (Barlow et al., 2015b)	Parent-infant dyads in high-risk families (infant mean age = 24mths)	.	(0)	.	.	.	.	.	.	.	.	.	.	.	.
Cognitive behavioural interventions (depression, DV, smoking, and passive smoking; Kiely et al., 2010)	African-American pregnant women	(~)	.	.	.	.	.	.	.	.	.	.	.	.	.
FAST babies (McDonald et al., 2009)	Teenage mothers with infants <2 years of age	.	.	.	.	.	.	.	(+)	.	.	.	(0)	(+)	.

**Table A2.** Significant strategy effects on outcomes for parents during infancy (child age 0 to 3 years, inclusive)

Strategy	Target Population	Parent Outcomes*													
		IPV	Mental health	AOD use	Breastfeeding	Psychosocial health	Parental coping	Parental stress	Parenting self-efficacy	Parenting knowledge	Health services <sup>a</sup>	Reflective functioning	Family functioning	Parent-infant relationship	Home-safety attitudes
The Mothers and Toddlers Program (Suchman et al., 2010)	Mothers in outpatient substance use treatment with children (0 - ≤3y)	.	(?)	(0)	.	.	.	.	.	.	.	(?)	.	(?)	.
The Mothers and Toddlers Program (Suchman et al., 2011)	Mothers in outpatient substance use treatment with children (0 - ≤3y)	.	(0)	(0)	.	.	.	.	.	.	.	(?)	.	(+)	.
Infant massage programs primarily delivered in disadvantaged areas (Underdown et al., 2013)	Low- to high-risk mothers and their infants (<6mths)	.	(0)	.	.	.	.	.	.	.	.	.	.	(0)	.
<b>Other Programs</b>															
(SR) Interventions preventing/ reducing DV (Jahanfar et al., 2014)	Pregnant women at-risk of or experiencing DV	(?)	(?)	.	.	.	.	.	.	.	.	.	.	.	.
<b>Collaborative Approaches</b>															
Starting Early, Starting Smart (Morrow et al., 2010)	Families at-risk with infants <12mths	.	.	.	.	.	.	.	.	.	(+)	.	.	.	.
<b>Workforce Development</b>															
Training regarding alcohol consumption during pregnancy (Mwansa-Kambafwile et al., 2011)	Social service providers working with women at risk of alcohol-exposed pregnancies	.	.	.	.	.	.	.	.	.	(+)	.	.	.	.

\* (+) = positive effect; (-) = negative effect (none found); (0) = no effect; (~) = mixed effects; (?) insufficient evidence; (.) = not examined

**NB.** (SR) = Systematic Review; AOD = Alcohol and/or Other Drug; FAST = Families And Schools Together; HV = home visitation; IPV = Intimate Partner Violence; DV = Domestic Violence; <sup>a</sup> Health services access and/or use.

**Table A3.** Significant strategy effects on outcomes for infants (0-3 years, inclusive)

Strategy	Target Population	Infant Outcomes*										
		RF	Social/ behavioural development	Cognitive development	Developmental screening rates	Health services <sup>a</sup>	Health status	Immunisations	CM	Child removal	Foster care exits	Non-accidental injury
<b>Home Visitation Programs</b>												
Family Spirit (Barlow et al., 2013)	American Indian teens (12-19y) ≤ 32wks pregnant	.	(+)	.	.	.	.	.	.	.	.	.
Family Spirit (Barlow et al., 2015a)	American Indian teens (12-19y) ≤ 32wks pregnant	.	(+)	.	.	.	.	.	.	.	.	.
Family Start (Vaithianathan et al., 2016)	All recorded live born children (Jul 2004 – Dec 2011 inclusive)	.	.	.	.	(~)	.	(+)	(?)	.	.	(+)
(SR) Programs targeting parent and child health and behaviour outcomes (Avellar et al., 2013)	Families with pregnant women or children (0-5y) served in developed world context	.	(~)	(~)	.	(~)	(0)	.	(~)	.	.	.
(SR) Paraprofessional HV program for children from disadvantaged families (Peacock et al., 2013)	Mothers and/or children (0-6y) from socially high-risk families	.	(+)	(~)	.	(~)	(~)	(+)	.	.	.	.
(SR) Programs for reducing risk of child maltreatment (Segal et al., 2012)	Pregnant mothers and families with children (0-6mths)	.	.	.	.	.	.	.	(+)	.	.	.
(SR) Programs for women with substance use issues (Turnbull et al., 2012)	Pregnant or postpartum women with a drug or alcohol problem	.	(0)	(0)	.	(0)	.	(0)	.	(0)	.	(0)
<b>Behavioural/ Psychosocial Programs</b>												
Mothers and Toddlers (Suchman et al., 2010)	Mothers in outpatient substance use treatment with children (0 - ≤3y)	.	(0)	.	.	.	.	.	.	.	.	.
Mothers and Toddlers (Suchman et al., 2011)	Mothers in outpatient substance use treatment with children (0 - ≤3y)	(0)	(0)	.	.	.	.	.	.	.	.	.
<b>Collaborative Approaches</b>												
Safe Babies Court Teams (McCombs-Thornton et al., 2012)	Infants up to age 3 entering foster care.	.	.	.	.	.	.	.	.	.	(+)	.
<b>Workforce Development</b>												
EDOPC Project – training in developmental screening (Allen et al., 2010)	Primary care providers	.	.	.	(+)	.	.	.	.	.	.	.

\* (+) = positive effect; (-) = negative effect (none found); (0) = no effect; (~) = mixed effects; (?) insufficient evidence; (.) = not examined

**NB.** (SR) = Systematic Review; CM = Child Maltreatment; HV = home visitation; RF = Reflective Functioning; <sup>a</sup> Health services access and/or use.

**Table A4.** Summary of studies evaluating strategies for working with vulnerable families during pregnancy and infancy identified through a rapid literature review and expert panel consultation

Author (Date), Country	Strategy Description	Strategy Target Population	Study Type	Study Design	Study Sample	Key Study Findings	Study Limitations
<b>Home Visitation Programs</b>							
Barlow et al. (2013) US	<b>Family Spirit</b> home visiting intervention delivered by bilingual paraprofessionals from the participating communities. <b>Aim:</b> To improve parental competence, and emotional and behavioural problems of mother and child.	American Indian teen mothers and their children. Nature of risk: Young mother age, substance use, behavioural/psychosocial risk, and lack of resources/services. Exclusions: None indicated.	Evaluation	RCT	American Indian teens (12-19y) from four rural communities ≤ 32wks pregnant (n = 322). Exclusions: Participants of other mental or behavioural research, or prevented from participating due to life circumstances (e.g. severe mental illness or legal status).	At 12 months postpartum, mothers in the intervention group had significantly greater parenting knowledge, parenting self-efficacy, and home safety attitudes and fewer externalizing behaviours, and their children had fewer externalizing problems. No significant differences between groups for self-reported maternal substance use. In a subsample of mothers with substance use at baseline, children in the intervention group had fewer externalizing and dysregulation problems, and fewer scored in the clinically “at risk” range for externalizing and internalizing problems.	Small study effect sizes; limited generalisability; response bias with self-report measures; measurement bias.
Barlow et al. (2015a) US	<b>Family Spirit</b> home visiting intervention delivered by bilingual paraprofessionals from the participating communities. <b>Aim:</b> To improve parental competence, and emotional and behavioural problems of mother and child.	American Indian teen mothers and their children. Nature of risk: Young mother age, substance use, behavioural/psychosocial risk, and lack of resources/services. Exclusions: None indicated.	Evaluation	RCT	American Indian teens (12-19y) from four rural communities ≤ 32wks pregnant (n = 322). Exclusions: Participants of other mental or behavioural research, or prevented from participating due to life circumstances (e.g. severe mental illness or legal status).	Findings at 12 months postpartum were largely replicated at 36 months postpartum: mothers in the intervention group scored significantly better than those in the control group in parenting knowledge, parental locus of control, depression, externalizing problems, use of marijuana and illicit drugs. Children in the intervention group had lower scores for externalizing problems, internalizing problems, and dysregulation from 12 to 36 months. No significant differences for parenting stress, observations of the home environment, internalizing problems, and alcohol use.	Lack of generalisability; response bias with self-report measures; the large number of study outcomes.
Paradis et al. (2013) US	<b>Building Healthy Children (BHC)</b> evidence-based home visiting program integrated with paediatric medical care. <b>Aim:</b> To avoid child maltreatment, improve parent and child health, and enhance family functioning.	Low income parents, mother ≤21y at first delivery, with 1-2 children ≤3y, and no previous involvement in the child welfare system. Nature of risk: Young mother age, low income. Exclusions: Families who are or have been involved in the child welfare system.	Evaluation	RCT	Low income parents, mother <21y at first delivery, with 1-2 children <3y, and no parent involvement in the child welfare system. (n= 497) Exclusions: Families who are or have been involved in the child welfare system.	Of the 128 participants referred to interpersonal psychotherapy, 60% reduced depressive symptoms. Of the 56 families referred to child-parent psychotherapy, 79% connected with services and achieved treatment goals. Since the start of BHC, the program has maintained an overall retention rate of 85% by age 3. Treatment children had a significantly higher well-child visit completion rate. 98% of treatment families avoided Child Protection Services involvement, compared with 95% of the comparison group.	Preliminary findings only; unclear data collection and analysis methods.

**Table A4.** Summary of studies evaluating strategies for working with vulnerable families during pregnancy and infancy identified through a rapid literature review and expert panel consultation

Author (Date), Country	Strategy Description	Strategy Target Population	Study Type	Study Design	Study Sample	Key Study Findings	Study Limitations
Vaithianathan et al. (2016) NZ	<b>Family Start</b> early intervention home visiting service. <b>Aim:</b> To help support vulnerable families to achieve better outcomes.	Pregnant mothers and families with pre-school aged children at heightened risk of adverse outcomes.  Nature of risk: At least one of the following – young mother age, substance abuse, MH issues, low income, lack of support and essential resources, relationship issues, family history of abuse, no/minimal antenatal care, SIDS factors not covered elsewhere.  Exclusions: None indicated.	Evaluation	Quasi-experimental	All recorded live born children (Jul 2004 - Dec 2011 inclusive) (n = 117,837).  Exclusions: Sampling method excludes migrant children entering and leaving the country.	Significant reductions in neonatal infant mortality (especially in the case of Sudden Unexplained Deaths in Infancy) and injury deaths, particularly for Maori children. Increases in children's engagement with early childhood education and immunisation for some families.	Use of administrative data alone to measure impact; lack of generalisability; failure to account for control families' use of alternative community and health services.
Avellar & Supplee (2013) US, NZ	Home visiting models targeting any of the following: child and maternal health, child development and school readiness, positive parenting practices, child maltreatment. <b>Aims:</b> Various	All programs targeted families with pregnant women or children (0-5y).  Nature of risk: At risk of poor health, development and economic outcomes.	Systematic review	RCT  Quasi-experimental	Articles included (n = 49). Publication dates: 1986-2012. Population: Families with pregnant women or children (0-5y) served in a developed world context (n = not reported).  Exclusions: None indicated.	Of 12 home visiting models reviewed, most were shown to have favourable effects on child development. Other common favourable effects included health care usage and reductions in child maltreatment. Less common were favourable effects on birth outcomes.	Greater number of findings not statistically significant; no correction of false positives.
Higgins et al. (2006) AUS, US	Home visiting programs targeting maltreatment through improving parenting competence and child development. <b>Aims:</b> Various	Most programs targeted low-income families, young mothers and families 'at risk' for child maltreatment.  Nature of risk: Low income, young mother age, child abuse and neglect	Systematic review	RCT  Quasi-experimental  Single-group pre/post	Articles included (n = 18). Publication dates: 1986-2004. Population: Families with children (includes age >3y) at-risk of or exposed to maltreatment (n = not reported).  Exclusions: None indicated.	Home visiting programs can be effective in ameliorating risk factors for child maltreatment (for example, by addressing poor family functioning). However there is limited evidence to suggest that home visiting assists in preventing child maltreatment. No statistical measures reported for parent/child (0-3y) outcomes.	Inclusion of study designs with no randomly assigned control or comparison groups; use of inappropriate outcome measures; mixed findings in relation to outcome measures; findings not replicated.

**Table A4.** Summary of studies evaluating strategies for working with vulnerable families during pregnancy and infancy identified through a rapid literature review and expert panel consultation

Author (Date), Country	Strategy Description	Strategy Target Population	Study Type	Study Design	Study Sample	Key Study Findings	Study Limitations
McDonald et al. (2012) Various	Key home visiting programs or Australian-based home visiting programs.  <b>Aims:</b> Various	All programs targeted disadvantaged or vulnerable families (including young pregnant women, single mothers, families with low socioeconomic status, first-time mothers, multi-challenged families, substance abusing parents, maltreating parents).  Nature of risk: Young mother age, low SES, substance use, child abuse and neglect, DV/IPV	Systematic review	RCT Systematic reviews Meta-analyses	Articles included (n = 50). Publication dates: 1986-2012. Population: Vulnerable families and their children (age includes >3y) (n = not reported).  Exclusions: None indicated.	The only component for which there appears to be a consensus in terms of what works in home visiting programs is antenatal (as opposed to postnatal) recruitment. The effectiveness of a program, in part, depends upon what outcome is being sought. A more useful question to ask may be 'what makes a home visiting program effective when trying to achieve a specific outcome'. No statistical measures reported for parent/child (0-3y) outcomes.	Methodological limitations in included studies.
Peacock et al. (2013) US, Ireland, Bangladesh, South Africa, Chile	<b>Paraprofessional home-visiting programs</b> for children (0-6y) from disadvantaged families.  <b>Aims:</b> Various	Most programs targeted high-risk or vulnerable families (including adolescent mothers, first time mothers, substance-abusing parents and low-income mothers), and one program targeted families generally.  Nature of risk: Young mother age, low SES, substance use, child abuse and neglect	Systematic review	RCT	Articles included (n = 21). Publication dates: 1991-2011. Population: Mothers and/or children (0-6y) from socially high-risk families (n = not reported).  Exclusions: None indicated.	Interventions were associated with decreases in harsh parenting, improved cognition and language development in young children, reductions in low birth weight, improved weight-for-age in young children, and reduction in child health problems. However, the number of non-significant findings were much larger than the significant ones.	Selective reporting; methodological limitations within included studies.
Prossman et al. (2015) AUS, US, Netherlands	Home visiting interventions for women and children exposed to IPV.  <b>Aims:</b> Various	All programs targeted abused mothers or mothers with abused children.  Nature of risk: DV/IPV, child abuse and neglect.	Systematic review	RCT	Articles included (n = 19). Publication dates: 1991-2011. Population: Abused mothers, mothers with abused children (n = not reported). No age specified.  Exclusions: None indicated.	Of the 6 studies identified, 3 showed improved IPV outcomes and 3 showed no significant reduction of IPV. Home visiting interventions that support abused women explicitly to stop IPV seem to be effective in reducing IPV. However, it is not known whether these results are effective in the long term.	Lack of description by most included studies of alternative healthcare support received by control groups.

**Table A4.** Summary of studies evaluating strategies for working with vulnerable families during pregnancy and infancy identified through a rapid literature review and expert panel consultation

Author (Date), Country	Strategy Description	Strategy Target Population	Study Type	Study Design	Study Sample	Key Study Findings	Study Limitations
Segal et al. (2012) US, Aus, Canada, UK, NZ, Syria, Japan, Norway	Home visiting interventions commencing during pregnancy or within six months of birth for the purpose of reducing the risk of child maltreatment or related outcome. <b>Aims:</b> Various	Most programs targeted high-risk or vulnerable families (including adolescent, substance-abusing and high-risk parents), and two programs targeted families generally.  Nature of risk: Substance use, young parent age, DV/IPV, child abuse and neglect, low income or SES, social isolation/ lack of social support, mental illness, unstable housing, parent history of childhood abuse, and more.	Systematic review	RCT Quasi-experimental Cohort studies	Articles included (n = 67). Publication dates: 1969-2009. Population: Pregnant mothers and families with children (0-6mths) (n = not reported). Exclusions: None indicated.	Of the 53 programs identified, 7 had a theory or mechanism of change underpinning a stated objective of reducing child maltreatment. These programs had a statistically significant positive outcome.  Of the 15 that had no match, none was successful. Programs with a partial match had an intermediate success rate. The relationship between program success and full, partial or no match was statistically significant.	Study model did not capture all aspects of program delivery that may be important to program success; differences in definition and reporting of child maltreatment across jurisdictions.
Turnbull et al. (2012) AUS, US	Home visiting interventions targeting pregnant or postpartum women with a drug or alcohol problem. <b>Aims:</b> Various	Most programs targeted mothers using alcohol or illicit drugs (including pregnant, teenage, low-income, over-18, African-American, Australian mothers).  Nature of risk: Substance use.	Systematic review	RCT Quasi-experimental	Articles included (n = 7). Publication dates: 1994-2006. Population: Pregnant or postpartum women with a drug or alcohol problem (n = 803).  Exclusions: Individual studies' sample exclusions included families with very preterm delivery, adolescent and older mothers, prison populations, foster care infants, mothers with major psychiatric diagnosis, seriously ill infants.	There was no significant differences in any of the outcome measures. There is insufficient evidence to recommend the routine use of home visits for pregnant or postpartum women with a drug or alcohol problem. Large, high-quality trials are needed.	Substantial methodological limitations in most included studies; limited generalisability of findings.

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Author (Date), Country	Strategy Description	Strategy Target Population	Study Type	Study Design	Study Sample	Key Study Findings	Study Limitations
<b>Behavioural/Psychosocial Programs</b>							
Barlow et al. (2015b) US, UK, Canada, Sweden	<b>Parent-infant psychotherapy (PIP)</b> programs. <b>Aim:</b> To improve the parent-infant relationship, and promote infant attachment and optimal development.	All programs targeted high-risk mothers (including women with postpartum depression, anxious or insecure attachment, and maltreated and prison populations).  Nature of risk: Maternal mental illness, CJI, child abuse and neglect, psychosocial risk.	Meta-analysis	RCT	Articles included (n = 8). Publication dates: 1991-2013. Population: Parent-infant dyads in which the parent was experiencing mental health problems, domestic abuse or substance dependency, and infant mean age 24mths (n = 846).  Exclusions: Individual studies' sample exclusions included low SES families, mothers with substance dependence, bipolar disorder or psychiatric disorder, foster-care and seriously ill infants.	PIP is promising for improving infant attachment security in high-risk families – although evidence is low quality. No significant differences compared to no treatment or treatment-as-usual for other parent- or relationship- based outcomes. No evidence that PIP is more effective than other methods of working with parents and infants.	Overall poor quality of included studies.
Flynn & Hewitt (2007), AUS	<b>Community Bubs program:</b> An intensive, community-centred support program offered to high-risk families for up to 12 months. <b>Aim:</b> To strengthen individual, family, and community resources to ensure the infant thrives and develops safety in the care of their parents/caregivers.	High-risk families with infants aged 0 to 4 months, with significant risk issues that could lead to a child protection notification if not addressed.  Nature of risk: significant risk issues (undefined), living in high need public housing, high risk of CP notification without intensive support.  Exclusions: None indicated.	Evaluation	Single-group pre/post	17 families (Total 46 participating children; 59% were 2-parent families)  Follow-up: 9 families  Exclusions: None indicated.	All infants remained safely at home.  Majority of families: developed/ maintained appropriate community connections; demonstrated positive infant-parent attachment; exhibited housing, financial, and key relationship stability; had reduced risk factors & assessed as lower risk.  87% of participants found the program helpful/very helpful and 80% reported having mostly/totally met their goals.  6mth follow-up: All infants remained at home; infants in 8 families were within the 'normal' developmental range; financial stability maintained, accommodation and family relationships were less stable.	Small sample size.  No significance testing conducted.  Reliance on observation to measure attachment.  Program mostly targeted interventions at mothers despite almost 60% of families headed by two parents.

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Author (Date), Country	Strategy Description	Strategy Target Population	Study Type	Study Design	Study Sample	Key Study Findings	Study Limitations
Kiely et al. (2010) US	<b>Cognitive behavioural intervention</b> for smoking, passive smoking, IPV or depression.  <b>Aim:</b> To reduce psycho-behavioural risks and improve birth outcomes.	African-American pregnant women.  Nature of risk: DV/IPV, MH issues, risky behaviours during pregnancy (smoking/ passive smoking).  Exclusions: None indicated.	Evaluation	RCT	African-American pregnant women with mean age 24.5y (n = 1,044).  Exclusions: None indicated.	Intervention group were less likely to have recurrent episodes of IPV overall. But for women experiencing sexual IPV specifically, incidence was not significantly reduced. Intervention group was less likely to be victimised by partner in 2nd or 3rd trimester (but no significant difference postpartum). Alcohol use during pregnancy and depression was associated with chance of recurrent IPV. Postpartum, only women with physical, minor or severe IPV showed significantly reduced IPV incidence. Intervention group had significantly fewer very preterm infants and increased mean gestational age.	Outcomes analysis did not account for effect of alcohol use and depression; study was not powered to test the efficacy of the intervention regarding adverse pregnancy outcomes, but for resolving psycho-behavioural risks; generalisability uncertain.
Marais et al. (2011) South Africa	Time-limited, patient-centred counselling <b>brief-interventions</b> .  <b>Aim:</b> to change patient behaviour and improve patient therapy compliance.	High-risk pregnant women less than 20wks pregnant, age >15y, living in a rural South African community.  Nature of risk: risky behaviours during pregnancy (alcohol consumption), disadvantaged background, low income and SES.  Exclusions: None indicated.	Evaluation	RCT	High-risk pregnant women less than 20wks pregnant, mean age 25y, living in a rural South African community (n = 194).  Exclusions: Use of clinical sample of convenience may have missed heavy drinkers who do not regularly attend clinics.	Reduced Alcohol Use Disorders Identification Test (AUDIT) scores in the intervention group post-intervention showed assessment plus brief-intervention is more effective at changing drinking behaviour, than assessment and written material alone. Women whose drinking was confirmed benefitted most from the intervention.	Use of AUDIT scores (rather than a diagnostic test to measure alcohol consumption) might not be a valid reflection of total alcohol consumption.
McDonald et al. (2009) Canada	<b>Families and Schools Together (FAST) babies</b> community-based, multi-family group intervention.  <b>Aim:</b> To improve outcomes for infants of teenage mothers in 11 Canadian communities.	Teenage mothers and their infants.  Nature of risk: Young mother age.  Exclusions: None indicated.	Evaluation	Mixed-methods (Single-group pre/post, qualitative)	Mothers, mean age 19y 95% single, 66% in high school; 89% unemployed; 66% annual income <\$15k; 82% Caucasian, with infants (<2y) (n = 115).  Exclusions: None indicated.	Young mothers reported a statistically significant increase in self-efficacy, reduction in stress and improved perception of relationship with their baby. No changes were reported on family functioning.	No randomly assigned control group; 17% did not complete post-test (missing data); no data on drop-outs; possible experimenter bias as data collected by program implementers.

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Author (Date), Country	Strategy Description	Strategy Target Population	Study Type	Study Design	Study Sample	Key Study Findings	Study Limitations
Suchman et al. (2010) USA	<p><b>Mothers and Toddlers Program</b> (MTP) attachment-based, individual psychotherapeutic parenting intervention.</p> <p><b>Aim:</b> To enhance maternal capacity, reflective functioning and address harsh or distorted mental representations of parenting.</p>	<p>Mothers with children (0≤3y) enrolled in outpatient substance use treatment.</p> <p>Nature of risk: Substance use</p> <p>Exclusions: None indicated.</p>	Evaluation	Randomised trial (with comparison group)	<p>Mothers with children (0≤3y) enrolled in outpatient substance use treatment, mean age 28.8y (n = 47).</p> <p>Exclusions: Mothers who were actively suicidal, homicidal, severely cognitively impaired, disengaged from their substance use treatment or not fluent in English.</p>	<p>Post-treatment, intervention group demonstrated moderately better reflective functioning and caregiving behaviour than the Parent Education comparison group. Intervention group also showed slight reduction in drug use, depression and global psychiatric distress. No group differences in overall quality of maternal representations of the child. Fidelity to treatment model led to greater improvement.</p>	<p>Small sample size; comparison group but no control group; pilot study – preliminary findings only; limited generalisability to populations at higher risk for parenting problems.</p>
Suchman et al. (2011) USA	<p><b>Mothers and Toddlers Program</b> (MTP) attachment-based, individual psychotherapeutic parenting intervention.</p> <p><b>Aim:</b> To enhance maternal capacity, reflective functioning and address harsh or distorted mental representations of parenting.</p>	<p>Mothers with children (0≤3y) enrolled in outpatient substance use treatment.</p> <p>Nature of risk: Substance use</p> <p>Exclusions: None indicated.</p>	Evaluation	Randomised trial (with comparison group)	<p>Mothers with children (0≤3y) enrolled in outpatient substance use treatment, mean age 28.8y (n = 47).</p> <p>Exclusions: Mothers who were actively suicidal, homicidal, severely cognitively impaired, disengaged from their substance use treatment or not fluent in English.</p>	<p>At six-week follow-up, intervention group showed sustained higher level of maternal self-reflective functioning, and increased magnitude of higher level of representational quality and mother-child communication compared to comparison group. Reduced depression and psychiatric distress symptoms in intervention group post-treatment was not sustained at follow-up. No group differences in maternal substance use and child-focused reflective functioning at post-treatment or follow-up.</p>	<p>Small sample size; comparison group but no control group; pilot study – preliminary findings only; limited generalisability to populations at higher risk for parenting problems.</p>
Underdown et al. (2013) UK	<p><b>Infant massage group programs</b> offered at children’s centres.</p> <p><b>Aim:</b> To improve bonding and attachment between mothers and infants.</p>	<p>Mother-infant dyads.</p> <p>Nature of risk: Not specific to at-risk populations although often offered to high-risk populations (e.g. MH issues).</p> <p>Exclusions: None indicated.</p>	Evaluation	Mixed-methods (Single-group pre/post, qualitative)	<p>Mothers (aged 16-41 years) with infants under 6mths (mean age 10wks) (n = 33) living in one of three areas (2 described as ‘extremely deprived’ and one as ‘more mixed’).</p> <p>Low-risk (42%), moderate-risk (33%), high-risk (24%). Risk level determined by 6 factors: MH, maternal age, single parenthood, low SES, working model of the child, and mother-infant interaction</p> <p>Exclusions: None indicated.</p>	<p>Overall, no significant change in parent-infant interaction (CARE-Index) or maternal postnatal depression (EPDS) in any of the programs. For moderate-risk mothers, only women attending ‘good’ or ‘fair’ quality programs achieved change. High-risk mothers showed no benefits irrespective of program quality, and there was evidence of unresponsive mothers becoming more intrusive.</p>	<p>Diversity in infant massage practice between the programs; small sample size.</p>

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Author (Date), Country	Strategy Description	Strategy Target Population	Study Type	Study Design	Study Sample	Key Study Findings	Study Limitations
Woolhouse et al. (2014) AUS *study included universal pop RCT and at-risk pop pre/post. Only pre/post reported here.	<b>MindBabyBody</b> mindfulness-based group therapy program. <b>Aim:</b> To reduce antenatal depression, anxiety and stress.	Pregnant women experiencing or at-risk of stress, anxiety, and depression. Nature of risk: MH issues. Exclusions: None indicated.	Evaluation	Single-group pre/post	Pregnant women admitted to the Royal Women's Hospital, at-risk of perinatal stress, depression, or anxiety, >10wks gestation, mean age 33.7y (n = 20). Exclusions: Women >34ws gestation, with current substance abuse, severe suicidal ideation, or not fluent in English.	Post outcome data show significant improvements for depression and state anxiety and non-statistically significant reduction in stress. Mindfulness scores increased significantly on two of five subscale measures (acting and awareness).	Small sample size; study focus was on feasibility and acceptability of outcome measures rather than changes in outcome; accurate response rate unable to be determined for all recruitment pathways.
<b>Other Programs</b>							
Jahanfar et al. (2014) US, Peru, Hong Kong	Interventions for preventing or reducing domestic violence against pregnant women. <b>Aims:</b> Various	Most programs targeted pregnant women at high risk of partner violence, and one program targeted young (<19y), unmarried women in receipt of Medicaid. Nature of risk: DV/IPV, young mother age	Systematic review	RCT	Articles included (n = 15). Publication dates: 2002-2013. Population: Pregnant women experiencing or at-risk of domestic violence (n = 3417). Exclusions: None indicated.	Analysis of seven studies showed limited evidence for reduction of episodes of violence (physical, sexual, and/or psychological), prevention of violence ≤1yr post-pregnancy, and depression during pregnancy and the postnatal period. Risk for low birthweight and preterm delivery did not differ between groups.	Inability to carry out meta-analysis due to inconsistency in reported outcomes in included studies; mixed risk of bias of included studies.
McCalman et al. (2014), AUS	<b>Baby Basket program:</b> A program that provides health advice and free baskets of essential baby care supplies and food vouchers during the first trimester, immediately after birth, and a short time after birth. <b>Aim:</b> To improve the health knowledge of ATSI mothers as well as their engagement with the health system.	ATSI women who are pregnant or have recently given birth. Nature of risk: high disadvantaged background, risky behaviours during pregnancy (smoking, alcohol consumption, nutrition). Exclusions: None indicated.	Evaluation	Mixed methods (Quasi-experimental, administrative, qualitative)	Quantitative: 967 surveys Qualitative: 10 Interviews Exclusions: None indicated.	It cannot be determined if the findings are a result of the program. The findings are more likely a result of a combination of factors. BB group compared to control: greater number of antenatal visits & proportion of visits before 13 weeks gestation; comparable level of smoking during pregnancy & scabies; fewer reports of iron deficiency. Within BB group: likelihood of smoking during pregnancy increased; decreased alcohol consumption during pregnancy. Provision of advice is inconsistent both between groups & data sources.	No significance testing conducted. Evaluation did not examine intervention effect on maternal and infant health. Reliability on secondary administrative data that likely does not capture those who do not regularly attend clinics.

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Author (Date), Country	Strategy Description	Strategy Target Population	Study Type	Study Design	Study Sample	Key Study Findings	Study Limitations
Milligan et al. (2011) Various	Programs that integrate on-site pregnancy-, parenting-, or child-related services with substance use treatment.  <b>Aim:</b> To address child health risks, barriers to accessing care, and the unique needs of pregnant women who abuse substances.	Pregnant and parenting women who abuse substances.  Nature of risk: Substance use.	Meta-analysis	RCT  Quasi-experimental	Articles included (n = 10). Publication dates: 1990-2009. Population: Pregnant or parenting women with substance abuse problems (n = 2471).  Exclusions: None indicated.	Compared to women with substance abuse issues not in treatment, women in integrated programs had infants with significantly higher birth weights, larger head circumferences, fewer birth complications, positive toxicology screens, and low birth weight classifications. Women in integrated programs attended significantly more prenatal visits and had significantly fewer pre-term births than women in non-integrated programs.	Limited number of included studies; low to moderate quality of included studies; lack of heterogeneity in treatment conditions compared and birth outcomes measured.
<b>Collaborative Approaches</b>							
Kramer et al. (2012) US	<b>Safe Mom, Safe Baby (SMSB)</b> , nurse-led interdisciplinary clinical program.  <b>Aim:</b> To enhance the health and safety of abused pregnant women and their infants.	Pregnant and recently delivered women experiencing IPV.  Nature of risk: DV/IPV  Exclusions: None indicated.	Evaluation	Single-group pre/post	Pregnant and recently delivered women experiencing IPV (n = 201).  Exclusions: None indicated.	Post-intervention data collected over five years show more than half of SMSB clients indicate improved readiness toward action and maintenance of violence-free relationships. There was an overall increase in SMSB clients' adoption of safety behaviours. Hospital data collected over two years shows SMSB clients achieved birth outcomes comparable with that of the general population.	No statistical analysis methods or findings; study did not include direct measures for prevalence of intimate partner violence.
McCombs-Thornton & Foster (2012), US	<b>ZERO TO THREE (ZTT) Safe Babies Court Teams Project:</b> Multi-disciplinary teams working with individual families involved in the child welfare system.  <b>Aims:</b> To improve outcomes, prevent future court involvement, and expedite time to permanency To improve knowledge about the impacts of CAN on young children (professional development)	Infants (up to 3y) entering foster care and their families.  Nature of risk: Child abuse and neglect  Exclusions: None indicated.	Evaluation	Quasi-experimental	ZTT (n=298): All children in the initial 4 sites engaged by 31/13/2009. (Represents 1+ year follow-up period for 94% of cases).  NSCAW comparison (n=511): based on ZTT criteria for enrolment.  Exclusions: None indicated.	ZTT group spent less time in foster care than NSCAW group for all exit types.  ZTT group were more likely to achieve reunification, relative guardianship, or non-relative guardianship than remain in foster care compared to NSCAW group.  Most common exit type for ZTT group was reunification.	Groups differed in demographics which may confound findings.  Only examines child's first involvement with the child welfare system and did not investigate program effects on rates of re-entry.  Small sample sizes within each site which limits comparisons.

**Table A4.** Summary of studies evaluating strategies for working with vulnerable families during pregnancy and infancy identified through a rapid literature review and expert panel consultation

Author (Date), Country	Strategy Description	Strategy Target Population	Study Type	Study Design	Study Sample	Key Study Findings	Study Limitations
Morrow et al. (2010) US	<b>Starting Early Starting Smart</b> (SESS) national initiative to integrate parenting, mental health, and drug treatment services into the paediatric health care setting.  <b>Aim:</b> To develop and disseminate best practices for integrating behavioural health services.	Families with children.  Nature of risk: Behavioural health risk (including parenting, mental health, & substance use).  Exclusions: None indicated.	Evaluation	RCT	Families from five paediatric healthcare sites, at risk due to demographic and behavioural health factors, with infants <12mths (n = 612).  Exclusions: None indicated.	SESS caregiver participants were 4.6 times more likely to receive parenting services, 2.1 times more likely to receive outpatient mental health treatment, and 1.8 times more likely to receive drug treatment than standard care comparison group participants.	Response-bias with self-report measures (including as a measure for drug use).
Ordean & Kahan (2011) Canada	<b>The Toronto Centre for Substance Use in Pregnancy</b> (T-CUP), family medicine-based, interdisciplinary team program for prenatal care and addiction treatment.  <b>Aim:</b> To provide women choice in and control over health care and services, and decrease the harmful consequences of drug use.	Pregnant women with a history of alcohol or drug abuse.  Nature of risk: Substance abuse.  Exclusions: None indicated.	Evaluation	Single-group pre/post	Pregnant women who received prenatal and intrapartum care at T-CUP, with substance dependence, mean age 29.4y (n = 121).  Exclusions: Women attending one-time consult only (many of who feared child protection intervention), terminated pregnancy, pregnancy resulted in foetal or neonatal death, prenatal care transferred to another physician, no outcome data available.	By time of delivery, more women were living in stable housing and fewer had no fixed address. Decrease number of women who were living with substance-using household members, and who used drugs during pregnancy. There was a statistically significant decrease in drug use for women who attended T-CUP early in their pregnancies. Women who stayed longer with T-CUP were more likely to retain custody of their child.	Response-bias with self-report measures; used substance use abstinence as outcome measure rather than reduction in drug use; confounding factors affecting baseline severity of addiction and level of functioning.
Taillac et al. (2007) US	<b>Early Start</b> (ES), integrated model of substance abuse screening intervention.  <b>Aim:</b> To decrease substance abuse (SA), reduce negative outcomes associated with prenatal SA, improve access to SA services, and enhance clinician efficacy.	Pregnant women attending Kaiser Permanente Northern California prenatal clinics.  Nature of risk: Substance abuse.  Exclusions: None indicated.	Evaluation	Quasi-experimental (cohort)	Pregnant women attending Kaiser Permanente Northern California prenatal clinics, who underwent urine toxicology screening tests and had a live birth or intrauterine foetal death (n = 49,986).  Exclusions: None indicated.	Compared with untreated pregnant substance users, ES-treated women had significantly lower rates for placental abruption, preterm labour and still birth. ES-treated women also had lower rates for assisted ventilation, low birth weight, and preterm delivery, compared with untreated women.	Limited description of data analysis and statistical significance outcomes.

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Author (Date), Country	Strategy Description	Strategy Target Population	Study Type	Study Design	Study Sample	Key Study Findings	Study Limitations
<b>Workforce Development</b>							
Allen et al. (2010) US	<p><b>Enhancing Developmentally Oriented Primary Care (EDOPC) project.</b></p> <p><b>Aim:</b> To increase the use of validated developmental, social/emotional, maternal depression and DV screening tools to facilitate identification and referral of at-risk infants (0-3y).</p>	<p>Primary health care providers.</p> <p>Nature of risk: DV/IPV, MH, behavioural/ psychosocial risk.</p> <p>Exclusions: None indicated.</p>	Evaluation	Single-group pre/post	<p>Primary health care providers (n=2873).</p> <p>Exclusions: None indicated.</p>	<p>Chart audit data from 16 practices indicated increased routine developmental screening from 4-32% of children by their 1-year well-child visit (in only 4 sites) and 27-45% by their 2-year well-child visit (only 2 sites) to screening 85% or more children for both time points in 11 sites. Routine social/emotional screening also increased from being conducted in only 1 site to 7 sites screening 85% or more of children by their 18mth well-child visit.</p>	<p>Barriers to referrals subsequent to screening and the impact of these barriers on practice systems were not examined.</p>
Guenther et al. (2009) US study reported no parent / child outcomes	<p><b>Educational intervention program</b> for health care providers in the emergency department (ED) setting.</p> <p><b>Aim:</b> To improve documentation of cases of possible physical abuse in children &lt;36mths treated in ED.</p>	<p>Health care providers in the ED setting.</p> <p>Nature of risk: Child physical abuse</p> <p>Exclusions: None indicated.</p>	Evaluation	RCT	<p>Medical records of children &lt;36mths (n = 1,575), from hospitals' EDs (n = 14).</p> <p>Exclusions: Paediatric trauma centre and children's hospital was excluded due to lack of comparable institutions in the area.</p>	<p>There was no evidence of significant change in documentation after the intervention. Even among the 26 charts in which the possibility of physical abuse was noted, documentation remained variable.</p>	<p>Variable physician attendance at educational programs; study did not report overall intervention attendance numbers; change in documentation outcome may not be an accurate reflection of health care provider thought process.</p>
Gunn et al. (2006) AUS study reported no parent / child outcomes	<p><b>ANEW educational intervention program.</b></p> <p><b>Aim:</b> To enhance the knowledge and skills of midwives and doctors to identify and support pregnant women with psychosocial issues.</p>	<p>Pregnant women with psychosocial issues.</p> <p>Nature of risk: Psychosocial risk (including: MH, DV/IPV, CAN, substance abuse, homelessness, intellectual disability, extreme social isolation, lack of support and parenting capacity).</p> <p>Exclusions: None indicated.</p>	Evaluation	Single-group pre/post	<p>Female midwives and antenatal medical practitioners from Mercy Hospital for Women, mean age 38.5y (n=22).</p> <p>Exclusions: None indicated.</p>	<p>After the educational intervention, participants were more likely to ask directly about domestic violence (p = 0.05), past sexual abuse (p = 0.05), and concerns about caring for the baby (p = 0.03). They were less likely to report that psychosocial issues made them feel overwhelmed (p = 0.01), and they reported significant gains in knowledge of psychosocial issues, and competence in dealing with them.</p>	<p>Use of self-report data limits what can be claimed about program effectiveness on actual antenatal care.</p>

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Author (Date), Country	Strategy Description	Strategy Target Population	Study Type	Study Design	Study Sample	Key Study Findings	Study Limitations
Mwansa-Kambafwile et al. (2011) South Africa	Interactive Fetal Alcohol Syndrome (FAS) screening and counselling training program. <b>Aim:</b> To improve the screening, identification, and management of women at risk for alcohol-exposed pregnancies.	Social service providers working with women at risk for alcohol-exposed pregnancies. Nature of risk: Risky behaviours during pregnancy (substance use) Exclusions: None indicated.	Evaluation	Single-group pre/post Quasi-experimental	Social service providers and public sector healthcare workers (95% female) working with women at risk for alcohol-exposed pregnancies (n = 109) and service-user women (n = 375). Exclusions: None indicated.	Post-training, providers expressed significantly more confidence for four skills indicators related to the identification and management of women at risk for an alcohol-exposed pregnancy. Female clients at intervention clinics were more likely than those at control clinics to receive alcohol advice, counselling, and an offer of family planning after training.	Post-intervention assessment completed immediately after training; use of self-report measures.
<b>Screening/ Assessment</b>							
Austin et al. (2008) Canada, AUS	Antenatal psychosocial assessment programs. <b>Aim:</b> To identify maternal distress and psychosocial risk factors and reduce perinatal mental health morbidity and mortality rates.	Women with high postnatal psychosocial risk. Nature of risk: Psychosocial risk (unspecified), mental health.	Systematic review	RCT	Articles included (n = 3). Publication dates: 2003-2005. Population: Women with high psychosocial risk (n = 600) and healthcare providers (n = 60). Exclusions: None indicated.	The two small studies included in the review do not provide sufficient evidence that routine antenatal psychosocial assessment by itself leads to improved perinatal mental health outcomes.	Significant methodological limitations in included studies, including high participant dropout rates and selection bias.
Burns et al. (2010) US study reported no parent / child outcomes	<b>Brief alcohol screening questionnaires</b> (AUDIT, AUDIT-C, CAGE, NET, SMAST, T-ACE, TWEAK). <b>Aim:</b> To identify high-risk or problem drinking to facilitate appropriate referral.	Pregnant women at risk of problem drinking. Nature of risk: Alcohol misuse.	Systematic review	Cohort and cross-sectional studies.	Articles included (n = 6). Publication dates: 1989-2005. Population: Pregnant women of African American, Hispanic, Asian and Caucasian ethnicity (n = 6724). Exclusions: Individual study exclusions included substance abuse/ dependence, intention to terminate, >6mths alcohol abstinence, non-English speakers, women aged <18y.	Analysis of sensitivity, specificity and predictive value of screening questionnaires showed that T-ACE, TWEAK and AUDIT-C show promise for screening for risk drinking, and AUDIT-C may also be useful for identifying alcohol dependency or abuse. However, their performance as stand-alone tools is uncertain, and further evaluation of questionnaires for prenatal alcohol use is warranted.	Errors in self-report; uncertain generalisability to different populations of women internationally.
Spyridou et al. (2015) Greece study reported no parent / child outcomes	<b>KINDEX screening tool</b> for use by medical staff in pre- /perinatal health care. <b>Aim:</b> To identify pregnant women at psychosocial risk to facilitate referral to adequate mental health and social services.	High-risk pregnant women. Nature of risk: Psychosocial risk such as MH, DV/IPV, prenatal maternal stress, young mother age, low SES, migrant/refugee status, maternal adverse childhood experiences (e.g. abuse and neglect). Exclusions: None indicated.	Evaluation/ Validation study	Unclear	Pregnant women, mean age 31y, 10-33wks gestation (n = 93). Exclusions: Pregnant women who did not have good Greek language comprehension skills.	Significant correlations between the results obtained through patient assessment using the KINDEX and the risk areas assessed in the validation interview demonstrate the criterion-related concurrent validity of the KINDEX. The referral accuracy of the medical staff is confirmed through comparisons between pregnant women who have and have not been referred to the mental health attention unit.	Use of scales not validated for the overall Greek population.

## APPENDIX 3. REVIEW/META-ANALYSIS REFERENCE LIST

Table A5. Studies examined in the reviews and meta-analyses included in the rapid literature review

Review/ meta-analysis Author (Date)	Studies Analysed
Home Visitation Programs	
Avellar et al. (2013)	<p>Anisfeld, E., Sandy, J., Guterman, N. B. (2004). <i>Best Beginnings: A Randomized Controlled Trial of a Paraprofessional Home Visiting Program: Technical Report</i>. New York, NY: Columbia University School of Social Work.</p> <p>Baker A. J. L., &amp; Piotrkowski, C. S. (1996). <i>Parents and Children Through the School Years: The Effects of the Home Instruction Program for Preschool Youngsters</i>. New York, NY: National Council of Jewish Women, Center for the Child.</p> <p>Baker, A. J. L., Piotrkowski, C. S., &amp; Brooks-Gunn, J. (1998). The Effects of the Home Instruction Program for Preschool Youngsters (HIPPY) on children's school performance at the end of the program and one year later. <i>Early Childhood Research Quarterly</i>, 13(4), 571-586.</p> <p>Caldera, D., Burrell, L., Rodriguez, K., Crowne, S. S., Rohde, C., &amp; Duggan, A. (2007). 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## APPENDIX 4. COMMON PROGRAM ELEMENTS

Table A6. Successful outcomes and corresponding program elements: Home visiting programs

PROGRAM	SUCCESSFUL OUTCOME	Manual/ Protocol	Parenting intervention	Child development	Link to matched need services	Supervision	Research informed curricula	Training	Fidelity monitoring	Periodic child/family outcomes assessment	Measurable outcome indicators	Home visitors culturally matched to clients	Target adolescent mothers	Prenatal
<b>Hawaii Healthy Start</b>	Decreased Maternal IVP (physical assault) perpetration and victimization.	Y	Y	Y	Y	Y	N	Y	N	Y	N	N	N	N
<b>Cognitively based extension to the Healthy Start home visitation program</b>	Lower use of corporal punishment, greater safety maintenance in the home, and fewer reported child injuries.	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	N	N
<b>Healthy Families Alaska (HFAK)</b>	Better child developmental and behavioural outcomes. Greater parenting self-efficacy. Greater use of mild forms of physical punishment. Among non-depressed mothers decreased maternal stress and increased sensitivity to infants' cues. Among depressed mothers with low to moderate attachment insecurity decreased depression and partner violence.	Y	Y	Y	Y	Y	N	Y	N	Y	Y	N	N	Y
<b>Healthy Families New York</b>	At Year 1 fewer acts of very serious physical abuse, minor physical aggression, and psychological aggression in the past year, and harsh parenting in the past week. Lower risk of delivering an LBW baby.	Y	Y	Y	Y	Y	N	Y	N	N	Y	Y	N	Y
<b>Early Head Start</b>	Long term impacts on child's social-emotional functioning, parenting, and family self-sufficiency outcomes.	N	Y	Y	Y	N	Y	N	Y	N	Y	N	N	Y
<b>"Nurse Family Partnership (NFP).</b>	First-time reports of neglect ceased by time child reached age of 8 whereas comparison group continued to receive first reports through age 15. No differences noted prior to age 5.	Y	N	Y	Y	Y	Y	N	N	Y	N	N	y	y

**Table A6.** Successful outcomes and corresponding program elements: Home visiting programs

PROGRAM	SUCCESSFUL OUTCOME	Manual/ Protocol	Parenting intervention	Child development	Link to matched need services	Supervision	Research informed curricula	Training	Fidelity monitoring	Periodic child/family outcomes assessment	Measurable outcome indicators	Home visitors culturally matched to clients	Target adolescent mothers	Prenatal
<b>VoorZorg, the Dutch NFP</b>	Victimization and perpetration due to IPV lower during pregnancy and two years after birth	Y	N	Y	N	N	Y	N	N	N	N	N	Y	Y
<b>Family spirit</b>	Mothers had greater parenting knowledge, parenting self-efficacy, and home safety attitudes, fewer externalizing behaviors. Children had fewer externalizing problems. Decreased illicit drug use.	Y	Y	Y	N	Y	Y	Y	Y	N	N	Y	Y	Y
<b>Family Start (NZ)</b>	Reduced post neonatal infant mortality – strongest for SUDI and injury deaths.	Y	Y	Y	Y	y	Y	Y	Y	y	Y	N	N	N
<b>Child FIRST</b>	Children- improved language and externalizing symptoms. Mothers - less parenting stress, lower psychopathology symptoms, less protective service involvement at 3 years, greater service use.	Y	Y	Y	Y	N	Y	N	Y	Y	N	Y	N	N
<b>Building Healthy Children</b>	Higher compliance with child’s Preventive Health Care visits. Educational and employment gains.	N	Y	Y	Y	N	Y	N	N	N	N	N	N	N
<b>The Bangladesh Integrated Nutrition Program (BINP)</b>	Improvements in children’s mental development, vocalization, cooperation, response-to-examiner, emotional tone, and mothers’ knowledge.	Y	Y	Y	N	Y	N	Y	N	N	N	N	N	N
<b>MOSAIC</b>	Reduced mean abuse scores	y	y	N	Y	y	y	Y	N	N	N	N	N	N

**Table A7.** Successful outcomes and corresponding program elements: Behavioural/psychosocial programs

	Brief interventions	Cognitive-behavioural intervention	FAST Babies	MindBabyBody	Mothers and Toddlers program	Community Bubs	Parent-infant psychotherapy
<b>Program Element</b>	Overall, greater reduction in AUDIT scores for IG (only significant for confirmed drinkers)	Overall, decreased IPV incidence during pregnancy. Fewer babies born with very LBW and at very preterm delivery. Greater gestational age.	Improved maternal general and social self-efficacy, relationship with baby and total parenting stress. Improved tangible and total support, family functioning, and reduced maternal moodiness/ emotional lability and social isolation/ withdrawal (grandmother reported)	Decreased depression and state anxiety and increased overall full mindfulness, particularly "acting with awareness" and "describing".	<i>Significance testing not conducted.</i> Moderate positive effects: reflective functioning, caregiving behaviour. Small positive effects: maternal coherence and sensitivity (quality of representations of child) and psychiatric symptoms (depression and global distress).	<i>Significance testing not conducted.</i> All infants remained safely in home with no removals or child protection investigations. Reduced risk in 80% of families.	<i>Meta-analytic review findings</i> Improved infant attachment security.
Manual/protocol	?	?	Y	Y	Y	?	Y/?
Targeted issue	Y	Y	Y	Y	Y	N	Y
Trained/qualified deliverers	Y	Y	Y	Y	Y	?	Y
Evidence-informed (EI)	?	Y	Y (adapted from EI program)	?	?	?	Y/?
Fidelity monitoring	?	?	Y	?	Y	?	Y/?
Delivery during routine visits	?	Y	N	N	N	N	N/?
Risk assessment/screening	Y	Y	N	Y	Y	Y	?
Individualised approach*	Y	Y	?	N	Y	Y	Y
Therapeutic component †	Y	Y	Y	Y	Y	Y	Y
Pre- and post-natal support	N	Y	N	N	N	N	N/?
Tangible support	N	?	?	?	Y	Y	N/?
Ongoing support	N	N	Y	N	N	Y	Y/N
Individual session	Y	Y	N	N	Y	Y (plus group and community context)	Y/N

**Table A7.** Successful outcomes and corresponding program elements: Behavioural/psychosocial programs

	Brief interventions	Cognitive-behavioural intervention	FAST Babies	MindBabyBody	Mothers and Toddlers program	Community Bubs	Parent-infant psychotherapy
Educational component	?	Y	Y	N	Y	Y	?
Interactive	?	?	Y	Y	Y	Y	Y
Take-home resources	Y	?	?	?	?	?	?
Duration: >1 session	Y	Y	Y	Y	Y	Y	Y
Duration: 12 months or more	N	N	Y	N	N	Y	Y/N
Referral/link to services	N	Y	Y	Y	Y	Y	?
Community based	N	Y	Y	N	N	Y	N
Home Visits	N	N	N	N	N	Y	Y
Support group	N	N	Y	N	N	Y	N
Co-location with clinic/hospital	?	Y	N	Y	N	N	Y/N
Participant incentives	Y	Y	N	N	Y	N	?

\*Individualised approach to care, counselling, and/or therapy; †Incorporated some form of counselling or therapy; '?' = not enough detail available to determine the presence of an element.

**Table A8.** Successful outcomes and corresponding program elements: Collaborative approaches

Program	Successful outcome	Targeted issue	Individualised approach*	Family/person-centred	Additional support	Educational component	Referral to services	Ongoing case management	Support group
<b>Early Start</b>	Lower rates for placental abruption, preterm labour, still birth, assisted ventilation, low birth weight, and preterm delivery.	Y	Y	?	Y	Y	Y	Y	?
<b>Safe Moms Safe Babies</b>	Improved client readiness towards action and maintenance of violence-free relationships, increased adoption of safety behaviours, and birth outcomes comparable to general population.	Y	Y	Y	Y	Y	?	Y	N
<b>Starting Early Starting Smart</b>	More likely to receive parenting services, outpatient mental health treatment and drug treatment than the standard care group.	Y	Y	Y	Y	Y	Y	Y	?
<b>T-CUP</b>	More women in stable housing, fewer living with substance-using household members, and fewer who used drugs during pregnancy. Significant decrease in drug use during pregnancy for women who attended T-CUP early in pregnancy. Women who stayed longer with T-CUP were more likely to retain custody of their child.	Y	Y	Y	Y	?	Y	Y	Y
<b>ZTT Safe Babies Court teams project</b>	Reduced time in foster care, most commonly exiting to reunification. ZTT group more likely to achieve reunification, relative custodianship, or non-relative guardianship than remain in foster care compared to NSCAW group.	Y	Y	?	?	Y	Y	Y	?

\*Individualised approach to care, counselling, and/or therapy; '?' = not enough detail available to determine the presence of an element.

**Table A9.** Successful outcomes and corresponding program elements: Workforce development strategies

Program	Successful outcome	Manual/ protocol	Targeted issue	Trained/ qualified deliverers	Evidence informed	Duration: >1 session	Educational*	Interactive	Role Play	Small group discussion	Resources/ manual provided	Tangible support	Ongoing support
<b>EDOPC project</b>	Increased routine developmental and social/emotional screening in children by their first year, 18mth, and second year well-child visits.	?	Y	?	Y	Y	Y	?	?	?	Y	Y	Y
<b>ANEW program</b>	Self-rated improvements in approaches towards psychosocial issues, and confidence, competence and satisfaction for a range of skills and abilities for providing care for pregnant women.	?	Y	?	Y	Y	N	Y	Y	Y	Y	?	?
<b>FAS screening and counselling program</b>	Significant improvements in practitioner confidence in four skills indicators, knowledge of the link between alcohol consumption in pregnancy and FAS, provision of pregnancy care advice and alcohol specific advice, and family planning (counselling and offering). Both within IG and between IG and CG.	?	Y	Y	?	N	Y	Y	?	N	Y	N	N

\* In the form of teaching how to use standardised tools.