Research Report DCSF-RW070

Health-led Parenting Interventions in Pregnancy and Early Years

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1. EXECUTIVE SUMMARY

1.1 BACKGROUND

Recent research from a range of disciplines (including neurodevelopment, developmental psychology and genetics), has indicated the importance of the first few years of life in terms of the quality of the parent-infant relationship, for a range of outcomes all of which are highly influential in terms of later development and wellbeing.

This had led many policy makers and governments worldwide to begin to identify and put in place, early interventions (i.e. during pregnancy and the first three years of life), aimed at promoting good parenting, not only in families where parenting skills are poor, and social and environmental risk factors are high, but at a universal level as well.

1.2 AIM OF THE REVIEW

The aim of this research was to contribute to the development of the Child Health Promotion Programme, by using existing review level evidence alongside the advice of experts, to identify the most effective and cost-effective health-led parenting support services and programmes in pregnancy and the first three years of life.

1.1 METHODS

The review involved the identification of systematic reviews of health-led parent and parenting interventions, services and programmes that were aimed at improving outcomes for parents and infants during the ante- and post-natal periods. A range of mental and physical health outcomes for mothers and fathers, and children up the age of three years, were included. The review involved three stages:

- Stage One: Establishing an expert group and clarification of boundaries for the review;
- Stage Two: Systematic review of reviews, critical appraisal of included studies, analysis of extracted data;
- Stage Three: Expert consultations.

1.3.1 STAGE ONE: ESTABLISHING REVIEW GROUP AND BOUNDARIES

A group of academic and professional experts in the field were invited to contribute to the review as part of a maximum of 3 email discussions over the course of four months. Specialist academic perspectives were sought on the following: (i) fathers; (ii) postnatal depression; (iii) obesity; (iv) early years outcomes; (v) social exclusion; (vi) safeguarding children; (vii) pregnancy; (viii) infant mental health; (ix) working in partnership; (x) paediatrics; (xi) early intervention; (xii) midwifery and health visiting.

Stage one of the review consisted of consulting the expert group about the scope of the review and the inclusion criteria.

1.3.2 STAGE TWO: REVIEWING THE LITERATURE AND CRITICAL APPRAISAL

The second stage of this study comprised a search of a range of electronic databases to identify systematic reviews of interventions that met the agreed inclusion criteria. A range of key electronic health, social science, and education databases were searched for the period 1990 to date.

The search was focused on the identification of systematic reviews of health-led parent and parenting interventions, services and programmes that were aimed at improving outcomes for parents and infants during the ante- and post-natal periods. A broad set of terms were used to increase the sensitivity of the search. A range of mental and physical health outcomes for parents, and children up the age of three years, were included. This was perceived to be the best method of balancing the need to review the most rigorous evidence with the timescales required to inform the implementation of the CHPP.

Abstracts and full papers were examined for eligibility by two reviewers. Disagreements were resolved by consultation with appropriate members of the expert group. A range of data was extracted from each of the included reviews using a standard data extraction form. All included systematic reviews (and where appropriate, primary studies) were critically appraised using a standardised checklist. Data from each of the included reviews was synthesised using a narrative summary aimed at the identification of common themes across all of the included reviews.

1.3.3 STAGE THREE: CONSULTATIONS WITH EXPERTS

Consultations with experts were undertaken at a number of stages of the review process. After the searching process was complete, the panel of experts was asked to comment on an 'Early Findings' table, and to:

a) Examine the key findings and identify any further methods of intervening that had not been included in the review of reviews;
b) Discuss the key findings of the preliminary analysis and build an overview of the different views about what works best for whom, and the knowledge and practice base supporting this.

1.4 RESULTS - KEY PRIORITIES FOR IMPLEMENTATION

1.4.1 ANTENATAL PERIOD

The following methods of supporting parents/parenting were identified for the antenatal period:

1.4.1.1 PREPARATION FOR PREGNANCY

Antenatal classes

Antenatal classes have until recently been one of the central methods of preparing parents for pregnancy and childbirth. One review was identified, which showed that the benefits of traditional antenatal programmes that focus on pregnancy and childbirth remain unclear. No consistent results were found, partly because of the wide variety in the focus and methods of the included programmes, and the wide ranging outcomes measured. Two US-based studies that were included on expert advice showed some significant findings.

It is concluded that there is a lack of evidence regarding the best method of delivering antenatal education in the UK, and a lack of clarity regarding the extent to which such classes are being used to promote the transition to parenthood (e.g. emotional preparation for parenthood, parenting and the parent-infant relationship).
Further research is needed to identify the focus of such programmes, and the most effective means of supporting their delivery to prospective parents.

Breastfeeding promotion

The evidence supports the use of antenatal group work to prepare parents for breastfeeding, which has an interactive component, and peer support schemes (such as ‘Best/Breast/Bosom Buddy’) and that involve local experienced breast feeders as volunteers; multimodal education/social support programmes combined with media campaigns.

There is further need for research on interventions (e.g. the UNICEF/WHO Baby Friendly initiative) in UK settings because most empirical studies have taken place in the US or developing countries.

Low birth weight (LBW)

The only intervention which has been found to be effective in reducing the risk of low birth weight is smoking cessation programmes. Preventing LBW will require a longitudinal and integrated strategy to promote optimal development of women's reproductive health, not only during pregnancy, but over the life course.

Smoking cessation

The emphasis should be on both mums and dads (and carers) quitting and the evidence supports the provision of smoking cessation programmes in all maternity care settings. A partner’s smoking status is a key determinant of a woman’s smoking during pregancy and presents a health risk to infants post-birth. Partners should be offered smoking cessation programmes.

There is some evidence to support interventions that (i) have a behavioural focus; (ii) are geared at changing patient's beliefs; and (iii) address stress management; and (iv) that a combination of behavioural training, rewards and social support. There is evidence to support the integration of motivational interviewing (MI) into smoking reduction/cessation plans.

There is some evidence that intervention programmes need to address target groups of women using different approaches. For example, minimal contact programmes are less successful with women of lower SES than those who are in higher social classes.

However, interventions should be locally piloted and care needs to be given to understanding the barriers to parents' involvement. Wider tobacco control measures can help reduce smoking in pregnancy and interventions should be employed in the context of robust control policies in the community.

1.4.1.2 PREPARATION FOR PARENTHOOD

Transition to parenthood

More recently antenatal group-based parenting programmes aimed at promoting the transition to parenthood (focusing in particular on issues such as the emotional changes that mothers and fathers experience at this time, parenting skills, and issues such as bonding and attachment) have been developed and evaluated. Evidence about such programmes is still extremely limited both in terms of quantity and quality, but provides some indication that such programmes have the potential to improve a range of outcomes such as dyadic adjustment, maternal psychological well-being, parental confidence, and satisfaction with the couple and parent-infant relationship in the postnatal period.

The evidence suggests that the provision of this form of social support should be responsive to the priorities of participating parents and include sessions addressing the transition to parenthood; relationship issues and preparation for new roles and responsibilities; the parent-infant relationship; problem-solving and conflict-resolution skills.

Further research is required to assess the effectiveness of antenatal parenting programmes in supporting pregnant women and their partners to prepare for their future role as parents.

Preparation for fatherhood

There is some evidence from a small number of studies, some of which may be at risk of bias, that antenatal classes can enhance men's support for their partner during pregnancy, childbirth and beyond, and prepare men for fatherhood. However, few studies have evaluated the effectiveness of such support with non-English speaking fathers and most of the available evidence is from the US.

The evidence indicates that effective antenatal support for fathers should be flexible, participative, and responsive to the self-defined needs of participating parents.

There is an urgent need for further research about the best methods of preparing fathers to both support their partners and prepare for their new role during the antenatal period.

1.4.1.3 IDENTIFICATION OF NEED/PROBLEMS

Promotional interviews

Promotional interviewing is one of a number of structured ways of working with parents during pregnancy and the postnatal period to help them to explore their situation and develop problem-solving skills. It is also used to identify families in need of further support.

The very limited evidence available suggests that promotional interviewing may improve the ability of professionals to identify families that need additional support and that families valued the support provided.

Further research is needed to test the effectiveness of promotional interviewing as both a means of enabling practitioners to identify families in need of further support and to help families to develop problem-solving skills.

Antenatal depression

Identification
The use of simple questions to identify women with ante/postnatal depression has similarly low predictive validity to screening tools such as the Edinburgh Postnatal Depression Scale (EPDS), but may be more acceptable to women.

Prevention
There is no evidence that psychosocial interventions delivered during pregnancy or the postnatal period are effective in preventing depression among low-risk populations and the routine provision of such interventions is not recommended.

Treatment
There is evidence to support the use of targeted psychosocial interventions (e.g. group psycho-education) for women who have symptoms of depression and/or anxiety that do not meet the threshold for a formal diagnosis.

There is rigorous evidence available indicating the effectiveness of psychological treatments for women who have symptoms of depression and anxiety in the ante/postnatal period. This shows that brief (4 – 6 sessions) inter-personal psychotherapy and cognitive behavioural therapy are effective for pregnant women who have had a previous episode of depression or anxiety and who have developed symptoms that do not meet diagnostic criteria but that significantly interfere with social and personal functioning.

1.4.2.4 SUPPORTING PREGNANT WOMEN AT RISK

Domestic abuse

Identification
Simple questions should be used as part of the routine assessment of women presenting during pregnancy and the postnatal period, to identify women who are being exposed to domestic abuse.

Treatment
There is limited evidence concerning the effectiveness of specific interventions to prevent or treat domestic abuse.

Further research is needed to identify i) effective methods of supporting women who are exposed to domestic abuse in terms of both the immediate safety and long-term well being, of themselves and their children; ii) interventions with men who are and who are not mandated to treatment; and iii) to gauge the effectiveness of interventions beyond the healthcare setting (e.g. public awareness campaigns, community support initiatives, including those for women in ethnic minorities.

Alcohol dependency and drug addiction

Identification
We identified no evidence about the most effective methods of identifying women who may be drinking excessively or who are abusing drugs.

Treatment
There is good evidence showing that the treatment of alcohol/drug use should be tailored to the specific needs of the client but should involve a psychosocial component (in addition to standard methadone treatment in the case of drugs). Effective treatment options include brief motivational interventions/motivational interviewing, behavioural couples-therapy (where there is a drug-free partner), family therapy, mutual aid (self-help) approaches, including community reinforcement approaches, network therapy (exploration and development of network support). Treatment may be more effective if it includes the provision of rewards and incentives (contingency management). Information leaflets should include material for other family members.

Further research is needed to identify the effectiveness of multimodal, community-based paraprofessional support (similar to the extended Doula model), for teenage mothers in recovery from alcohol or drug dependence. Further research is also needed regarding the benefits of family counselling (which has been shown to increase engagement and retention of resistant problem drinkers and drug users) in the antenatal/postnatal period.

Demographically at-risk pregnant women

Certain demographic characteristics, including poverty and age (e.g. teenage pregnancy), are associated with poorer outcomes for parents and their children. In these circumstances, both parents and children may benefit most from intensive parenting interventions

There is extensive evidence evaluating the effectiveness of home visiting programmes for demographically high risk families including teenage mothers. This indicates that their effectiveness is dependent on a range of process factors such as the intensity and frequency of the service, and the skills of the programme provider. Programme effect sizes are stronger for interventions that last for six months or more, and that involve more than 12 home visits. Interventions that begin early (either antenatally or at birth) are more effective than those that begin in later parenthood, as are programmes that are delivered by professionals as opposed to para-professionals.

Home visiting programmes also appear to be most effective where they are focused on a broad range of outcomes and are multi-focused, targeted, and of medium- to long-term duration.

The evidence suggests that enrolment based on demographic or community level risk factors is preferable to enrolment based on individual risk factors, due to the fact that individual assessment to identify risk during the ante-natal period is both unreliable and potentially stigmatising.

1.4.2 POSTNATAL PERIOD

The following methods of supporting parents/parenting were identified for the postnatal period:

1.4.2.1 CHILDBIRTH

Debriefing following childbirth

Debriefing is a one-off, semi-structured conversation that is used by psychologists to support individuals who have had a traumatic experience, with the aim of reducing the effects of the trauma. The evidence shows that a one-off debriefing session is not effective in reducing psychological morbidity in women who have experienced a traumatic childbirth, and may even be harmful.

Opportunities to talk about the birth experience *that do not involve the use of formal debriefing techniques* are currently being recommended by NICE guidelines, particularly for women who have experienced a Caesarean birth or have an infant who has spent time in a special care baby unit.

Breastfeeding promotion

The evidence supports the initiation of breastfeeding as soon as possible post delivery (i.e. 1 hour) using support from healthcare professional, or peers unless medically inappropriate; 24-hour rooming-in; and continuing skin-to-skin contact where possible. The evidence also supports the use of on-going consistent sensitive expert feeding advice about infant positioning; and the provision of information about the benefits of breastfeeding, and colostrum. Support should be culturally appropriate.

Group classes on breastfeeding with an interactive component and peer support schemes (such as 'Best/Breast/Bosom Buddy') using local experienced breast feeders as volunteers. The evidence also supports the use of multimodal education/social support programmes combined with media campaigns; and Breast/Bosom Buddy peer support initiatives. Community practitioners should be trained in the Baby Friendly Initiative.

Written materials as a stand-alone intervention are not supported by the evidence.
Although the benefits of breastfeeding are widely known, UK research on breastfeeding promotion interventions during the antenatal period is limited and further robust trials are needed in UK settings.

1.4.2.2 PROMOTION OF BONDING

Skin-to-skin contact

Skin-to-skin contact (also known as Kangaroo Care) involves the carer holding the baby so that there is close contact between them. The evidence shows that kangaroo care by mothers of healthy, full-term infants is associated with a range of improved outcomes including mother-infant interaction, attachment behaviours, infant behaviour, and infant physical symptomatology. There is, however, insufficient evidence to support its use with low birthweight babies.

Information about the sensory and perceptual capabilities of infants

Information about the sensory and perceptual capabilities of infants is provided to parents with the aim of improving interaction, and the Brazelton Neonatal Behavioural Assessment Scale (NBAS) is one of a number of structured methods with which health care professionals can provide this. The findings from one review of the NBAS showed a small to moderate impact on parent behaviour, knowledge, parental representations, and increases in mother-infant and father-infant interaction. One further study (RCT) that involved the use of a booklet demonstrating the capabilities of the foetus/newborn and modelling sensitive responsiveness showed that first-time fathers in low socioeconomic status groups were more likely to have accurate knowledge about child care than control fathers, but that the effect of the intervention on child care was unclear.

Further research is needed to identify the optimal mode of delivering such advice to both mothers and fathers.

Soft infant carriers

Soft infant carriers are also used to promote closeness between mother and infant. There is limited evidence evaluating their effectiveness, but this showed that mothers who used such carriers were more sensitive to infant vocalisations, and that infants appeared more securely attached at 13 months.

Infant massage

Infant massage involves the carer gently stroking the infant using rotational movements and sometimes oils, and is used in some special care baby units and more recently in the community, particularly with mothers experiencing postnatal depression. The evidence from one review is indicative that infant massage may improve mother-infant interaction, sleep and relaxation, reduce crying, and have a beneficial impact on a number of hormones controlling stress in healthy full-term babies. Further research is needed to confirm these findings, particularly in terms of their potential impact on mother-infant interaction. Concern about methodological quality precluded the possibility of reaching any conclusions about the effectiveness of infant massage with pre-term or low birthweight babies.

Supporting fathers

A range of interventions are being used to support fathers. One review that examined the effectiveness of such interventions showed that potentially effective methods of supporting fathers include father-toddler play groups, NBAS, infant massage, and parenting groups with enhanced sessions for men. Effectiveness was associated with programmes that involved active participation with, or observation of the infant/child, and multiple exposures to the intervention.

More research is needed to determine the appropriate dose of effective interventions, their impact over time, and the differential impact of interventions with mothers and fathers.

1.4.2.2 SUPPORTING EARLY PARENTING

Parenting programmes comprise brief, manualised interventions aimed at improving the capacity of parents to support their children's emotional and behavioural development. They are underpinned by a range of theoretical approaches and may be offered using a range of media (e.g. leaflets, videos etc), on a one-to-one basis or in groups.

Media-based parenting programmes

One review showed a moderate, but sometimes variable, impact of a range of media-based (e.g. booklet, video, audiotape) parenting programmes on children's behaviour. The addition of brief therapist input (e.g. 2 hours) appeared to increase their effectiveness.

Primary and secondary behavioural problem prevention programmes

The evidence supports the use of group-based parenting programmes to improve the emotional and behavioural adjustment of children under the age of 3 years, but there is currently no evidence about the effectiveness of such programmes in the prevention of emotional and behavioural problems.

Further research is needed to assess the effectiveness of parenting programmes for the primary and secondary prevention of emotional and behavioural problems.

Parents of children with behaviour problems

Behavioural parent training, and enhanced training focused on child-specific factors (including personalised telephone-based interventions) can be effective with parents of preschoolers with temperamental difficulties. Interventions delivered through video-tape modelling are more effective than no treatment, but families with multiple problems are likely to require further support.

Parents with learning disabilities/developmental delay

The evidence shows that one-to-one parent-training is effective in improving the care-giving of parents with a learning disability, and should involve specific skill assessment and training, using direct observational techniques and modelling in the home or home-like settings.

Further research is needed to (i) identify variables associated with the responsiveness of parents with learning disabilities to such intervention; and (ii) to develop and compare innovative programs that teach parents with learning disabilities the necessary skills to demonstrate longer-term beneficial effects for their children.

Parents with drug addiction

Effective methods of improving parenting in drug abusing parents have not yet been identified and parenting programmes should only be used as part of a multi-component strategy with specialist services to support drug abusing parents.

Further research is needed on relational, attachment-based, parenting programmes, and interventions that focus on the relationship between the mother and baby and/or mother and therapist, for drug dependent women and their young children.

Parents with severe mental health problems

Some long-term, multimodal parenting support programmes for parents with severe mental health problems have been developed, but not yet evaluated.

There is an urgent need for research to evaluate the effectiveness of parenting programmes with parents experiencing severe mental health problems.

1.4.2.3 PROMOTING CHILD COGNITIVE DEVELOPMENT

A range of methods are used to promote child cognitive development and early learning including book sharing, anticipatory guidance, and intensive centre-based interventions directed at disadvantaged children.

A small number of reliable studies found that a book distribution programme was effective in increasing parent-child book-sharing activities, particularly among poor ethnic minority families, and was associated with higher child receptive language development. One small study at risk of bias indicated that group-based sharing of songs, music and books improved child cognitive skills (including verbalisation, language use and understanding of numbers), and self-esteem at age 3-5 years.

Anticipatory guidance provided by health practitioners in US paediatric clinics has been found to lead to significant improvements in parents' reading to children, and to better bed/bath/sleep routines. Effects were most significant among low income minority parents. However, these promising results need to be tested in a UK context.

There was evidence from one review that early intensive centre-based intervention programmes for disadvantaged children can improve a range of outcomes including mother-infant interaction; home environment; child cognitive function; maternal employment and education; incidence of repeat pregnancies for teenage mums; and maternal knowledge and attitudes about child-rearing.

1.4.2.4 PREVENTING/ADDRESSING EARLY PARENT- INFANT PROBLEMS

Anticipatory guidance

Anticipatory guidance consists of the provision of preventive advice by physicians and other healthcare workers in healthcare settings. One review evaluated the effectiveness of 47 interventions of this type. The results indicate that anticipatory guidance and written instructions can be effective in promoting better infant sleep patterns, reducing stress, and increasing parents' confidence during the first two months of life, although further studies showed that behavioural modification techniques were not always effective for children with severe sleep problems. They can also increase the use of time-out as an alternative to physical punishment, Temperament-based anticipatory guidance (involving physicians in discussions about the child's temperament as a way of imparting an understanding about a child's individuality to the parent and promoting better interaction between them), appears to be highly acceptable to parents but there is limited evidence concerning its role in improving outcomes.

Further research is needed about the effectiveness of anticipatory guidance in UK settings, and on its potential role in preventing mental health problems in children.

Interaction guidance

Interaction guidance involves a professional videotaping up to ten minutes of interaction between carer and baby, and then using the videotape to point out examples of positive parent-infant interaction. A number of studies showed that this can be effective in improving infant symptoms, mother-infant interaction, reducing maternal sensitivity, and improving maternal representations. There is no evidence about its effectiveness in improving attachment.

Attachment-based interventions

Attachment-based interventions are diverse and range from parent-infant psychotherapy to home visiting programmes. One review showed that interventions with a clear behavioural orientation and that focused on enhancing maternal sensitivity were more effective in increasing sensitivity and infant attachment than those with other orientations (i.e. that focused on support and/or changing maternal representations). It is suggested that although infant attachment is slower to respond to interventions focused on changing maternal sensitivity, there may be a 'sleeper' effect involved in the use of sensitivity-focused interventions.

This review also suggests that short-term interventions (with fewer than five sessions) are as effective as those with 5 – 16 sessions and more effective than interventions of more than 16 sessions. This finding is inconsistent with that of a number of other reviews (see discussion for further detail).

Parent-infant psychotherapy

Parent-infant psychotherapy involves specialists (parent-infant psychotherapists) working with both mother and baby using psychotherapeutic methods to treat a range of problems including faltering growth, attachment difficulties and abusive parenting, by focusing on the relationship between the parent and infant, parental representations, and parenting practices. The results of four rigorous studies showed that parent-infant psychotherapy can be effective in reducing infant-presenting problems, decreasing parenting stress, and reducing maternal intrusiveness and mother-infant conflict. The results of one study also showed improvements in maternal sensitivity, responsiveness and reciprocity, and another showed improvements in infant attachment. Further research is needed to examine their effectiveness in UK settings.

1.4.2.5 PROMOTING THE MENTAL HEALTH OF CHILDREN AND FAMILIES

Identification of postnatal depression

The use of simple questions to identify women with ante/postnatal depression has similarly low predictive validity to screening tools such as the EPDS, but appears to be more acceptable to women.

Prevention of postnatal depression

There are currently no effective interventions to prevent postnatal depression in low risk populations.

Treatment of postnatal depression

Inter-personal psychotherapy, cognitive behavioural therapy or listening visits in the home are effective for women who have developed symptoms of depression. One-to-one therapy appears to be more effective than group work. Treatments should be combined with patient education about the illness, the treatment selected, and other mechanisms for promoting health such as social support and a healthy lifestyle.

Women requiring psychological treatment should be seen for treatment normally within 1 month of initial assessment, and no longer than 3 months afterwards.

Social support (individual, including home visiting, or group-based interventions) is recommended for women who have sub-threshold symptoms and who have not had a previous episode of depression or anxiety.

Dyadic treatment is recommended to improve parent-child interaction in women experiencing depression in the postnatal period.

Targeting and focusing services

Targeting should focus on high risk communities, rather than specific families. The reduction of attrition can be accomplished through offering incentives (e.g. meals or free transport) and by using outreach to understand local issues and circumstances, including barriers to participation. No single approach to mental health promotion is effective with all populations. A range of services is needed to work with children, parents and parent child pairs or family groups. High-risk families will benefit from trained paraprofessionals and professionals working together. Pre- and post-natal interventions are effective with weekly contact continuing for the first year. Offering a small number of high intensity services to a family is likely to be more effective than a large number of low intensity components.

1.4.2.6 PREVENTING AND TREATING OBESITY IN YOUNG CHILDREN

Infant feeding

The evidence in relation to breast-feeding and later obesity is inconclusive.

Preventing and treating obesity

There is very limited evidence about the effectiveness of obesity prevention and reduction interventions for children aged 0-3 years.

The small number of studies of interventions with preschool children, which primarily involve low SES US children at the higher age range (2.5 years+) shows that multicomponent programmes can be successful in helping parents to help their children to reduce weight. This suggests that parents are receptive to, and capable of, behavioural changes that may promote healthy weight in their young children.

There is an urgent need to identify effective interventions to prevent and treat obesity in children aged 0 to 3+ years.

Promoting healthy eating

Interventions include traditional, video or computer-based teaching methods, behaviour modification techniques, one-to-one counselling and nutrition education workshops. Most studies showed some positive effect on nutrition knowledge but impact on eating behaviour was less frequently assessed and outcomes were mixed. There are currently no long term studies evaluating the effectiveness of these interventions on knowledge or behaviour.

Growth monitoring

There is some evidence that growth monitoring can help detect rare but potentially dangerous conditions. However, there is also evidence that frequent weighing can increase parental anxiety and interfere with exclusive breast-feeding.

In the absence of further evidence it has been agreed that infants should be weighed at routine assessments only, except in the case of infants who give cause for concern.
Body Mass Index (BMI) has been adopted as a proxy measure for obesity within the UK. BMI (adjusted for age and gender) is recommended as a practical estimate of overweight in children over the age of 2, but needs to be interpreted with caution because it is not a direct measure of adiposity.

Children who are overweight or obese and have significant co-morbidity or complex needs (for example, learning or educational difficulties) should be referred to appropriate specialist care.

Interventions for childhood overweight and obesity should address lifestyle within the family and in social settings.

1.4.2.9 SMOKING CESSATION

As in the antenatal period, a partner's smoking status is a key determinant of a woman's smoking during the postnatal period and presents a health risk to infants post-birth. Partners should be offered smoking cessation programmes.

There is some evidence of the effectiveness of work with parents, delivered by nurse home visitors or other health practitioners that focuses on helping parents believe they can take action to protect children from cigarette smoke and grounded in the concept of self-efficacy. This method can incorporate other elements including involving parents in investigation about the amount of smoke in the vicinity of their child.

The relative effectiveness of specific components of interventions and sustainability of smoking cessation after pregnancy is not clear. More research is needed about the effectiveness of smoking cessation programmes during and after pregnancy.

1.4.2.10 SUPPORTING FAMILIES AT RISK

Domestic abuse – See Antenatal Section

Alcohol dependency - See Antenatal Section

Drug abuse – See Antenatal Section

Home visiting – See Antenatal Section

Teenage Parents

The evidence suggests that multimodal support/education interventions are effective as a means of supporting young mothers. They should begin before or soon after birth, provide demonstrations with real infants, have frequent home visits (e.g. visits 2 – 3 times a month) with hands-on parental education, using video therapy and group discussions, and continue for at least one year.

Such interventions should, as far as is possible, be tailored to meet the needs of individual young parents in terms of their developmental stage, coping strategies and exposure to stressful situations.

1.5 DISCUSSION

1.5.1 Which programmes, services and interventions that require health leadership or delivery would bring greatest benefit for children and families with different levels of need?

This review has summarised evidence regarding a wide range of health-led interventions aimed at supporting early parenting. What is clear from the findings is that no single approach has all the answers, and a range of services is needed to work with parents, their babies, and the family.

Effective interventions come in many shapes and sizes, but a number of factors appear to be important in terms of the capacity of programmes to bring about benefit for children and families during the pregnancy and postnatal period:

Defined focus on the parent-infant relationship
There is a clear consensus that the *focus* of support that is provided to both mothers and fathers during the perinatal period should be the *parent-infant relationship.* Even during pregnancy health care professionals should have as a central focus of their care, the parents' feelings about the pregnancy, and the developing baby. During the postnatal period, health care professionals should again focus their attention on the *relationship between the parent and infant.* For example, there is a range of *dyadic* methods of treating postnatal depression now available including infant massage, video-tape feedback, and parent-infant psychotherapy (for more severe problems), which have a greater potential in terms of the wellbeing of the infant, than therapies such as listening visits that focus on the parent in isolation.

Clarity around who programmes are for, with appropriate targeting
In terms of whether a programme is successful it is important that it is being targeted at the right population and a clear recruitment strategy that takes account of the specific needs of the target population is used.

Work with fathers is under-reported but shows promising results. The findings suggest that support for fathers should not be treated as an 'add on', and that there is a need to target interventions at both parents, focusing on the father-infant relationship in addition to the mother-infant relationship; to identify strategies that are particularly helpful in meeting the specific needs of fathers; and to focus on their experiences including that of depression and anxiety.

High risk families may benefit from lay workers and professionals working together.

Theoretical basis
Several reviewers have noted that programmes with a clear theoretical focus are more likely to be successful than those that lack such a focus. Nation et al (2003) point to two distinct theoretical foci; first, aetiological theory that focuses on the causes (risk or protective factors or processes) of the targeted problem; and intervention theories that are concerned with the best way of changing these aetiological risks. Ideally, programmes should be underpinned by both a clear aetiological model that ensures appropriate targeting of risk factors, and a clear intervention model in terms of how the intervention will work to bring about change.

Consistency and quality of delivery
Programme providers also need to pay careful attention to the fidelity with which programmes are implemented locally. There is a clear consensus in the literature about the importance of adhering to manualised programmes, and participants receiving all components of the intervention protocol. Recent research has indicated, however, that there is currently a strong tendency for staff to 'mix and match' from different programmes and there appears to be a need to distinguish between "planned" deviation from programme manuals (which may be a necessary way of adapting programmes to fit local circumstances or populations) and an unplanned "implementation gap" which may arise from insufficient resources, inadequately trained staff or ineffective management practices or staff training. Although "planned" deviations may be necessary, it is important that the reasons for this are clear, that quality is not compromised, that there is still a clear and plausible hypothesis between the intervention and the outcome of interest, and that any changes to programmes are evaluated.

There is evidence to suggest that 'less can be more' but that the quality of an intervention is important. For example, there is some evidence that deprived children benefit disproportionately from high quality care but that they also suffer disproportionately from low-quality services. Some services such as infant massage are becoming 'routine', but a number of recent reports have suggested that the quality of current provision is poor, with inadequate attention being paid to factors such as the way in which such services are delivered (e.g. staff modelling good practice; offering continuity of care; focusing on the parent-infant relationship; ongoing training and support of staff etc). The provision of routine services of this nature provide staff with a *key* opportunity to support the developing infant's needs and to identify parent-infant dyads for whom such support is insufficient, and who are need of additional input. This suggests that staff need to develop a new 'mindset' in which universal provision is recognised as being a key opportunity to identify families in need of further support, and early intervention as a key opportunity to identify families for whom referral to treatment services is required.

Related to this, there appears to be some consensus that programmes are more effective when they are multi-component, using different forms of delivery or combining more than one therapeutic approach. Barnes & Freude-Lagevardi (2003) note that each component of multi-component programmes should be of a similar intensity to that of the best single component programme if they are to be effective. Related to this, there appears to be some consensus that programmes are more effective when they are multi-component, using different forms of delivery or combining more than one therapeutic approach. Furthermore, each component of multi-component programmes should be of a similar intensity to that of the best single component programme if they are to be effective, and multiple intervention programmes are required to cover the multiple risk and protective factors that are associated with mental health but careful co-ordination is necessary between the different programme components, and between programmes and other relevant local services.

Workforce requirements
There is a clear consensus about the importance of 'working in partnership with parents' and of staff having the necessary skills to do this, including the ability to listen effectively, motivate families to change, and plan problem-solving strategies. This suggests the importance of staff being selected for their qualities and skills (particularly where the intervention involves intensive therapeutic work), and provided with appropriate training, *and* ongoing support.

Other staffing factors that are important in terms of whether a programme is successful include staff being in receipt of ongoing training and support

Clarity around programme purpose and expectations
The success of a programme requires professionals, commissioners and indeed parents to having a clear understanding of the purposes, aims and mechanisms of the intervention. It is also important that all involved are clear what parents will receive.

Other factors that are important in terms of whether a programme is successful include it being evidence-based; the fit of the programme with other services being provided locally and the use of effective signposting; the use of monitoring to assess whether the programme appears to be working alongside the implementation of feedback from service users.

Figure one comprises a checklist that service providers and commissioners should be asking of each programme that they plan to implement.

Figure 1: Successful programme checklist

Is this programme supported by research evidence?
Is the programme well defined?
Who is the programme for?
- What is the target population for this programme?
- What are the target outcomes for this programme?
- Are there clear recruitment processes in place and will these reach our target audience?
- What mechanisms are in place so that participants are able to access the programme?

Is there a clear theoretical basis for the programme?
- Is there a clear hypothesis linking the intervention to a specific outcome or outcomes?

What mechanisms are in place to ensure it is implemented consistently and to the quality intended?
- Is there a manual?
- How can commissioners/providers ensure that quality of delivery is not compromised?
- What mechanisms are in place to monitor programme outcomes? Does this include a process of collecting and acting on feedback from participants?

Do all involved in the programme (providers, parents, commissioners) have a clear idea of the programme?
- Are its purpose and aims clear?
- Is it clear what parents will receive?

Are workforce requirements clear?
- Is on-going training and supervision in place for staff?

Integration with other services
- How does this programme fit with other relevant local programmes and services and are there processes in place to signpost participants to other programmes or services?

1.5.2 When is the best time to provide services (e.g. pregnancy; first year of life etc), and what is the optimal 'dose' needed to achieve change?

There is a lack of consensus about the optimal onset, duration and intensity of programmes. This is in part due to a lack of research that is specifically designed to test these factors. We are therefore reliant on largely qualitative assessments of quite different programmes (i.e. that start at different developmental stages, last for different lengths of time and are of different intensities).

The most appropriate time to begin programmes appears to be unclear. While there has been some consensus that programmes are more effective if they begin antenatally, the findings of a recent review suggested that programmes starting after six months of age were more effective. However, recent research showing an adverse programming effect on fetal neurodevelopment with long-term consequences for later child development (e.g. ADHD and cognitive development) point to the value of starting during the antenatal period.

There is also a lack of clarity in terms of the duration and intensity of programmes. For example, one review found that longer (more than a year), more intensive programmes were more effective than less intensive programmes. However, Bakermans-Kranenburg et al (2003) found that shorter sensitivity- and attachment-based interventions were more effective than longer ones, and they conclude that offering a small number of high intensity services to a family (especially multi-risk low SES) is likely to be more effective than a large number of low-intensity components.

As both Davis (in press) and Moran et al (2004) note, however, the duration and intensity of a programme is likely to be related to need: intensive sessions, with booster sessions to reinforce messages after the programme has finished may be more suitable for families with multiple problems, whereas short interventions may be more appropriate for less complex problems.

1.5.3 What produces the most cost-effective outcomes?

Overall, there is a paucity of evidence about cost and cost-effectiveness. Much of the data that are available come from evaluations of parenting programmes and to a lesser extent, intensive centre-based, and home visiting programmes. This suggests a number of conclusions:

First, many of the interventions aimed at supporting parenting can be provided as part of *routine care* during the ante- and post-natal periods. For example, anticipatory guidance, and techniques to promote parents awareness of the perceptual and sensory capabilities of their baby can be provided to parents as part of the first and subsequent birth visits to the family. Early intervention of this sort may be effective in preventing later problems in the parent-child relationship.

Second, there is good evidence to support the use of a range of media-based (i.e. self-administered leaflets; videos/DVDs) interventions with parents both as part of universal and a stepped approach to progressive provision. While the available cost data is limited it suggests

that media-based interventions are less costly than behavioural therapy or clinic-based services. This is significant given that many media-based interventions may be effective without further intervention with some parents.

The evidence also suggests that many of the group-based formats for providing support to parents are significantly less expensive than clinic-based intervention. This is, once again, a significant finding given that many parents appear to obtain significant benefit from taking part in a group with other parents such as, for example, group-based infant massage programmes, perinatal and postnatal parenting programmes, toddlers and dads programmes etc.

The evidence also supports the use of brief, intensive community-based one-to-one interventions such as videotape feedback and parent-infant psychotherapy. There is currently little evidence about the associated costs, but the brief and focused nature of such programmes, means that they are not likely to be prohibitive and could in the long-term be associated with considerable cost savings.

There are higher costs associated with some of the interventions for which there is evidence of effectiveness, and in particular home visiting programmes and early centre-based interventions to support the cognitive development of disadvantaged children. Most of the available cost data for these programmes has been obtained from programmes evaluated in North America. Many of the long-range estimates show significant cost savings at a societal level, provided that they are targeted at high-risk families. For example, an extrapolation of the 15-year follow-up study of the Family Nurse Partnership Home Visiting programme showed that cost savings to government and society were only likely to be accrued for families in which the mother was low-income and unmarried at registration, where the savings exceeded the cost of the programme by a factor of 4 over the life of the child. This points to the importance of ensuring that intensive and costly programmes of this nature are appropriately targeted.

1.5.4 What is the best means of identifying and prioritising users who can potentially benefit from services?

There is wide-ranging debate about whether preventative services should be offered universally or targeted (i.e. both secondary and tertiary prevention) to groups at greatest need. It is argued that programmes show the greatest effect when they are directed at the population with the highest level of need and with the greatest capacity to benefit (secondary and tertiary prevention). There is, however, no clear consensus across the reviews included in this report. One study of attachment interventions found no evidence that interventions were more or less effective with higher-risk families. Other commentators suggest that although universal parenting interventions may be effective (and cost-effective) for less severe parenting problems, targeted interventions are required for families with higher levels of need. Certainly, the evidence on intensive home visiting programmes suggests the need to target families in order to realise long-term cost savings.

There are several arguments in favour of universally provided programmes. First, they may be less stigmatising. Second, universal programmes may be better able to address problems before they reach clinical levels, and are therefore more genuinely preventive than programmes that become available only after problems have developed. Third, the ‘population paradox’

refers to a situation in which a relatively large number of lower risk individuals carry the main burden of disease of the population as a whole, such that while people living in a specific area may be at high risk, the majority of high-risk people are actually spread out across a range of areas. Programmes that focus on a specific location will not therefore reach the majority of those who could benefit from such programmes. Although area-based programmes may be a cost-effective solution, universal programmes are likely to have greater reach.

The evidence from the included reviews suggests the following:

- Brief inexpensive interventions can be effective with parents with low to moderate problems, but may also be effective with high-risk families as well. This points to the potential value of a 'stepped care' approach to service provision;
- Targeting should focus on 'at risk' communities rather than the individual characteristics of specific parents. Where targeting is being used, it should focus on the selection of first-time parents, and should be a priority where resources are limited.

The evidence also points to the value of:

- Individual assessment of need – depression, addiction, or maternal age <16 – in order to ensure that programmes are adapted to address the specific needs of individuals and their families;

It should also be borne in mind that:

- Some interventions are time-sensitive – e.g. attachment-focused interventions should be targeted at appropriately aged children etc.

Progressive universalism is one potential solution to the issue of identifying and prioritising users, and comprises universal provision with options to proceed to more intensive services as required. This has the advantages of:

- Providing the context (i.e. universal services) within which an assessment of need can be conducted;
- Reducing the stigma associated with targeting that is undertaken outside the context of universal provision.

1.5.5 What messages can be drawn from the evidence about the qualities and skills needed by the workforce?

There is consensus that poor relationships between parents and staff delivering programmes may be a key reason for low recruitment and high attrition rates. The commitment of staff to working with parents and/or children as partners in a shared process is likely to be crucial to the success of a programme in terms of achieving its outcomes.

Programmes that combine input from professionals and practitioners in education, para-professionals or voluntary input may be able to draw on a wider skills-set than programmes that just employ one group. In addition, local community members acting on a voluntary or paid basis may have good links to the target community and may be able to help overcome community distrust of professionals.

Although staff characteristics, training and supervision are crucial to the success of programmes, there is still relatively little in the research literature about the role of these factors. Even where staff have a sufficient degree of formal knowledge to deliver a programme, low morale and lack of 'buy-in' to new programmes may be a major obstacle. Staff should have a clear idea about the purpose of the programme, their role in delivering it, the theoretical and evidence-base for the programme, and be able to share their ideas and experiences with colleagues and supervisors.

There is an urgent need for a 'skilling-up' of the workforce and for an increase in the availability of health professionals (such as midwives) who can deliver these services:

> *If we are to achieve the goal of helping parents to promote the type of care during the early years that will help the baby to develop regulatory capacities that we now recognise to be central to effective later functioning (including the management of anger and stress), we need to provide core groups of professionals with the expertise to work in partnership with families. Working alongside families to support mental health and well-being involves sensitivity and special skills, and will involve changing aspects of the training programmes of core groups of professionals who work with young children (including midwives, health visitors and doctors), in addition to providing the existing workforce with new skills (Barlow and Underdown, 2007).*

A number of evidence-based methods of working with parents - including the Family Partnership Model and the Solihull Approach - were identified as part of this review. These training programmes provide professionals with the necessary skills to become effective listeners; to work in partnership with families; and to help families develop problem-solving skills. These are core skills that should inform all work with families, and be embedded with the development of respectful, warm, and trusting relationships, which we now recognise to be crucial to helping families to change. In addition, professionals need the *observational skills* to be able to recognise when things are not going well between a mother/father and baby, the *intervention skills* to enable them to undertake preliminary work with parents experiencing minor difficulties (e.g. videotape feedback methods), and the skills to know when and how to refer onto more specialist services (parent-infant psychotherapy services).

1.5.6 What factors are associated with 'Engagement'?

Barnes & Freude-Lagevardi (2003) have identified 'primary' or 'threshold' factors, such as the recruitment of participants and encouragement to help families to continue with a programme, as being crucial to the success of the programme. This suggests that programme providers need to give careful consideration to how participants are to be recruited (where will the programme be advertised? how can the programme be advertised to people most likely to be benefit from the programme?) and to the potential barriers to participation. These could be real (people may not be able to afford to get to the programme venue, the venue may be difficult to get to by public transport or the programme may not be held at a suitable time) or perceived (taking part in a programme may be stigmatising or may be felt to be racist or culturally inappropriate). All these factors need to be considered locally prior to the implementation of a programme.

1.6 Conclusions

Key findings of the review are as follows:

1.6.1 There is a lack of high-quality, particularly UK-based, research about the effectiveness of interventions delivered during the ante- and post-natal periods in supporting parents to promote optimal outcomes for children;

1.6.2 A number of methods of supporting parenting can be recommended as part of a model of progressive provision beginning antenatally and continuing through the first two post-natal years, and later;

1.6.3 The evidence suggests that the *focus* of support that is provided to both mothers and fathers during the perinatal period should be the *parent-infant relationship.*

1.6.4 A range of services are required and should be underpinned by a clear theoretical model and/or model of change; provide an assessment of the individual needs within the family in order that the appropriate level of services can be provided; and offer a 'stepped approach' to provision.

1.6.5 There is indicative evidence to support the use of a range of innovative and dyadic methods of supporting the parent-infant relationship such as video-feedback; infant massage; methods of increasing the parents awareness of the infants perceptual and sensory capabilities; parent-infant psychotherapy. Many of these techniques (e.g. skin-to-skin care; infant carriers; anticipatory guidance etc) should be part of the *routine guidance* that is offered to parents.

1.6.6 Targeting of services should as far as is possible be undertaken within the context of universal provision. Promotional interviews provide a good example of the type of strategy that could be used to identify families in need of further support.

1.6.7 Primary care practitioners (particularly midwives and health visitors) have a number of key opportunities to identify 'deep-seated' problems such drug-abuse and domestic abuse, which are strongly associated with poor outcomes for children. The identification of these problems should be undertaken *routinely* and on a *universal* basis, as part of the process of working in partnership with women and their families, and as part of the process of establishing a problem-solving relationship with clients, using simple, focused questions.

1.6.8 There is an urgent need for further research in a number of areas:

- The best methods of providing antenatal preparation for childbirth and the transition to parenting;
- Best methods of supporting fathers;
- Methods of supporting alcohol and drug abusing parents, and parents with serious mental health problems during pregnancy;
- Prevention and treatment of obesity.

1.6.9 While cost data are limited, the available evidence suggests that many of the interventions reviewed can be provided as part of standard provision or with minimal cost implications using group- and community-based methods. This could be facilitated through de-investment in activities that are not currently well-supported by the evidence, and through primary care staff being helped to change the focus of routine visits particularly the booking-in visit during pregnancy and the birth- and subsequent postnatal visits. Intensive and costly centre-based or home visiting programmes should be carefully targeted to ensure that societal cost savings are realised in the long-term.

1.6.10 Further skilling-up of the primary care workforce is needed to enable them to provide some of the parenting interventions/services identified as part of this review. Staff should have core qualities, skills and understanding (irrespective of the intervention or service) to enable them to work effectively with families including listening, partnership working, and the ability to help families to develop problem-solving skills. These should be provided as part of the *core training* of groups of professionals such as midwives and health visitors, and offered as part of continuing professional development for trained staff.

Factors associated with ‘engagement’ and ‘retention’ should be addressed.

2. BACKGROUND

2.1 RESEARCH CONTEXT

There has been increasing recognition of the importance of the first few years of life in optimising the later development of the child. This emerging evidence base shows that the quality of early parenting is strongly associated with a range of later outcomes including behaviour and delinquency[1]; educational success and school dropout;[2] a range of health related behaviours including promiscuity,[3] drug and alcohol abuse,[4] smoking;[5] unhealthy eating;[6] and both physical and mental health in adulthood.[7]

More specifically, recent research from a range of disciplines (including neurodevelopment, developmental psychology and genetics), has pointed to the particular importance of the first few years of life in terms of the quality of the parent-infant relationship, for a range of outcomes (e.g. secure attachment[8] and brain development[9]), all of which are highly influential in terms of later development and wellbeing. For example, recent research has shown that excessive levels of stress during the first few years of life can seriously disrupt the child's developing nervous system and stress hormone regulatory systems, damaging the child's developing brain architecture and chemistry.[10] Such problems can result in 'lifelong problems in learning, behaviour and both physical and mental health'.[11] Evidence of the mechanisms involved in the intergenerational transmission of parenting problems has now been identified,[12] alongside the significant cost to society.[13]

This had led many policy makers and governments worldwide to begin to identify and put in place, early interventions (i.e. during the first five years of the child's life). These are aimed at promoting good parenting, not only in 'vulnerable' families where parenting skills are poor, and social and environmental risk factors are high, but at a universal level as well.

2.2 POLICY CONTEXT

The most recent government white paper 'Aiming high for children: supporting families'[14] points to the need for improved responsiveness to families through better early intervention, including the monitoring of risk and identification of need as early as possible and the shift to a model of progressive universalism.

Other government documents including *Every Child Matters*,[15] *Supporting Families*,[16] and the public health white paper *Choosing Health*,[17] and *Every Parent Matters*[18] similarly highlight the importance of the family environment and parenting in particular, in determining key outcomes for children.

Recent UK government policy points to the need not only to identify and protect children at risk of significant harm, but to improve support for parents and families, alongside improving outcomes for children (*Every Child Matters,* and the *National Service Framework for Children, Young People and Maternity Services.*[19] *Supporting Families* points to the need to ensure that all families have access to the advice and support they need, and to tackle the more serious

problems of family life. More recently, '*Every Child Matters'* set out the Government's proposals for protecting children and maximizing their potential, and the Government initiative Sure Start[20] provided a range of local area-based services to improve support for families and parents. The White Paper *Choosing Health* highlights the need to promote mental health in children, and to develop parenting skills at a community and individual level.

2.3 THE CHILD HEALTH PROMOTION PROGRAMME

The National Service Framework for Children, Young People and Maternity Services[21] introduced the Child Health Promotion Programme (CHPP) which comprises a comprehensive system of care (screening/assessment/surveillance and health promotion) that is offered to every child from birth to 18 years. The CHPP sets out the health-led services that NHS commissioners are expected to commission for their local population and essentially comprises much of the universal preventive and early interventions service for children and families. The recent update,[22] which focuses on pregnancy and the first five years of life, places a major emphasis on parenting support (particularly in the first months and years of life) in the light of advances in knowledge about neurological development and an increasing focus on vulnerable children and families, with an emphasis on integrated services.

2.4 AIM

The aim of this project is to contribute to the development of the Child Health Promotion Programme (which sets out the universal health-led services that NHS commissioners are expected to commission for their local population) by using existing review level evidence alongside the advice of experts to identify the most effective and cost-effective health-led parenting support services and programmes in pregnancy and the first three years of life. This was perceived to be the best method of balancing the need to review the most rigorous evidence with the timescales required to inform the implementation of the CHPP.

The review has taken into account the conceptual framework provided by Professor David Olds in the Nurse-Family Partnership programme in terms of the application of the theories of self-efficacy, attachment, and human ecology.

2.5 OBJECTIVES

The objectives of this project are to identify from existing reviews of early years parenting interventions, evidence relating to a range of outcomes including (infant mental health; obesity; smoking; inequalities and social exclusion; educational outcomes; involving fathers; safeguarding children; economic self-sufficiency; domestic abuse; supporting parental relationships etc), and in conjunction with input from a range of experts in the field (see below) to address the following:

- What is the best way of improving outcomes for all young children and families;

- Which programmes, services and interventions that require health leadership or delivery would bring greatest benefit and are most cost-effective for children and families with different levels of need;

- When is the best time to provide services (e.g. pregnancy; first year of life etc);

- What offers the most effective outcomes in terms of programme length, content, intensity etc;

- What produces the most cost effective outcomes;

- What messages can be drawn from the evidence about the skills and knowledge needed by the workforce.

3. METHODOLOGY

The review involved three stages:

- Stage One: Establishing an expert group and clarification of boundaries for the review;
- Stage Two: Systematic *review of reviews*, critical appraisal of included studies, analysis of extracted data;
- Stage Three: Expert consultations.

3.1 STAGE ONE: ESTABLISHING REVIEW GROUP AND BOUNDARIES

A group of 9 academic and professional experts in the field were invited to contribute to the review as part of a maximum of 3 email discussions over the course of four months. Specialist academic perspectives were sought on the following: (i) fathers; (ii) postnatal depression; (iii) obesity; (iv) early years outcomes; (v) social exclusion; (vi) safeguarding children; (vii) pregnancy; (viii) infant mental health; (ix) working in partnership; (x) paediatrics; (xi) early intervention; (xii) midwifery and health visiting.

The first meeting, in October 2007 was used to agree the following with the DCSF:

i) The inclusiveness of the review in terms of the population; interventions and outcomes to be included;
ii) Review inclusion criteria and search terms;
iii) Data extraction and analysis process.

3.2 STAGE TWO: REVIEWING THE LITERATURE AND CRITICAL APPRAISAL

The second stage of this study involved a review of a range of electronic databases to identify *systematic reviews* of interventions that met the agreed inclusion criteria. Systematic reviews are the highest level of evidence on which to base decisions about 'what works' and thereby practice, and we only searched for primary studies where it was apparent that there was no review level evidence available or where a member of our expert group indicated there was a gap in the evidence that we had produced.

3.2.1 Databases searched: The following key electronic health, social science and education databases were searched: Embase, CINAHL, PsychInfo, Medline, ERIC, ASSIA, Social Services Abstracts, Sociological Abstracts, HealthPromis, Child Data and the Cochrane Database of Systematic Reviews, Campbell Collaboration databases, Google and Google Scholar, using a combination of medical subject headings (MeSH) and free text search.

3.2.2 Inclusion criteria

Reviews or reviews of reviews that meet the following either partially or fully were included:

3.2.2.1 Population – parents during pregnancy and parents or parents/children during the first three years of their child's life. Interventions directed at the children alone (i.e. not focused on supporting parents or parenting) were excluded from the review.

3.2.2.2 Interventions – Parent and parenting interventions, services and programmes that are being led or delivered, or could potentially be led or delivered by practitioners working within the NHS, that requiring health skills and knowledge, and that are aimed at improving outcomes for parents and infants during pregnancy and the first few years of life.

3.2.2.3 Outcomes of interest – a range of mental and physical health outcomes for parents, children up the age of five years and families including the following:

- Parental physical health and health behaviour, and parental mental health as it impacts on the child; parental health related behaviour during pregnancy (including smoking, drug and alcohol consumption), maternal mental health, paternal mental health;
- Parental sensitivity, parent-child interaction, care-giving, parenting skills;
- Life course, family, social and economic outcomes, including parental planned pregnancies, parental educational outcomes, parental employment and need for welfare;
- Use of health and other services aimed at supporting parents and parenting;
- Infant birth weight; physical development and health, cognitive and motor skills, emotional and mental health into later infancy
- Quality of home environment;
- Family social supports and social capital

3.2.2.4 Study designs – all systematic reviews and reviews of reviews were included. Reviews were defined as having used an explicit methodology to identify either primary or secondary research. Quality of included reviews was assessed (see 3.2.4 below).

3.2.2.5 Years – Studies were included from 1990 to date.

Studies were selected for inclusion by two reviewers based on abstracts and full papers. Disagreements were resolved through consultation with the expert group.

3.2.3 Search terms

A broad set of terms were used to increase the sensitivity of the search:

- Terms to identify systematic reviews or reviews of reviews: systematic review* or overview* or meta-analys* or metananalys*)
- Terms to identify population: parent* or father* or mother*or caregiver* or care-giver
- Terms to identify intervention: (intervention or program* or service or prevention)

3.2.4 Critical appraisal

All included systematic reviews were critically appraised using a standardised checklist (e.g. CASP, 2002). This process enabled us to assess the reliability of the results produced by each of the included reviews and thereby to attach greater significance to the findings of the most rigorous reviews.

3.2.5 Data extraction

A range of data was extracted from each of the included reviews using a standard data extraction form. It included the following categories:

- Descriptions of the interventions; services and programmes being reviewed;
- Description of all of study findings;
- Summary of the authors' conclusions about what works, under what conditions, for whom.

3.2.6 Data analysis

Data extracted from each of the included reviews have been examined using a *thematic approach*. This has enabled us to identify the following common themes across all of the included reviews:

i) the best ways of intervening to improve outcomes on a universal basis for parents; young children and families; and what does the evidence show with regard to effectiveness and cost;
ii) the best ways of intervening to improve outcomes for families with different levels of need, again looking at effectiveness and cost-effectiveness
iii) the key messages with regard to programme length, content and intensity;
iii) Key messages about skills and knowledge needed by the workforce.

EPPI-Centre Reviewer, an online software package developed by EPPI-Centre, was used to manage the reviewing process. EPPI-Centre reviewer includes bibliographic capture, management of studies through the review process, data coding, quantitative and qualitative analysis, reporting and web-based access to study codings.

3.3 STAGE THREE: CONSULTATIONS WITH EXPERTS

3.3.1 Aim

- To discuss and validate preliminary findings, and identify further data for inclusion. Where no systematic reviews were identified, experts were asked to recommend individual studies.

- To reach a consensus regarding the services and interventions that are deliverable as part of a universal type service by practitioners working in the NHS.

3.3.2 Consultations with experts were undertaken at the following stages:

ii) After the searching process was complete, the panel of experts was asked to comment on an Early Findings table and to:

a) Examine the key findings and identify any further methods of intervening that have not been included in the review of reviews;

b) Discuss the key findings of the preliminary analysis and build an overview of the different views about what works best for whom and the knowledge and practice base supporting this. This involved developing clarification regarding the difference between the following: Interpretation of review findings; expert views regarding the best/most effective practice; accepted view of best practice.

ii) Experts were asked to examine the draft report incorporating key findings and to make any final recommendations. This process was repeated with the final report.

4. RESULTS

4.1 SEARCH RESULTS

Over 5,000 studies were identified. Of these, 39 systematic reviews, and 2 reviews of reviews met the inclusion criteria. The remaining studies were excluded because they were not reviews, they did not target parents during the ante- or post-natal period, they were not focused on supporting parents or parenting, and they did not include the assessment of appropriate outcomes (e.g. see 3.2.2.3 for further detail). Some studies were excluded because they were not of sufficient rigour (e.g. a number of identified reviews were not systematic or did not provide data). 24 individual studies were included on expert advice.

4.2 CRITICAL APPRAISAL

The results of the critical appraisal of all included systematic reviews are provided after each section of results. A separate table summarising the critical appraisal of primary data from RCTs/non-controlled studies is provided in Appendix 1.

4.3 FINDINGS

The results are divided into two sections based on the timing of the intervention either during the antenatal or postnatal period. A summary of the content and the results of each review is provided after each result section. An overview of the included evidence can be found in Appendix 2.

The following methods of supporting parents/parenting were identified for the antenatal and postnatal periods:

Preparation for Pregnancy

- Antenatal classes
- Breastfeeding promotion
- Low birth weight
- Smoking cessation

Preparation for parenthood

- Transition to parenthood
- Preparation for fatherhood

Identification of need/problems

- Promotional interviews
- Antenatal depression

Supporting pregnant women at risk

- Domestic abuse

- Alcohol dependency
- Drug addiction
- Demographically at-risk pregnant women

The following methods of supporting parents/parenting were identified for the postnatal period. Only new evidence (i.e. that has not been included in the section on antenatal interventions) is reported.

Childbirth
- Debriefing following childbirth
- Breastfeeding

Promotion of bonding
- Skin-to-skin contact
- Information about sensory and perceptual capabilities of the infant
- Infant carriers
- Supporting fathers

Supporting early parenting
- Media-based parenting programmes
- Primary and secondary behavioural problem prevention programmes
- Parents of children with behavioural problems
- Parents with learning difficulties/developmental delay
- Mothers with drug addiction
- Parents with severe mental health problems

Promoting child cognitive development

Preventing/Addressing early infant/toddler problems:
- Anticipatory guidance
- Enhancing maternal sensitivity and/or infant attachment
- Interaction guidance
- Parent-infant psychotherapy

Promoting mental health of children and families
- Postnatal depression
- Targeting and focusing services

Preventing and treating obesity in infants and young children
- Infant feeding
- Preventing and treating obesity
- Promoting healthy eating
- Growth monitoring

Smoking cessation
Supporting families at risk

- Domestic abuse
- Alcohol dependency
- Drug abuse
- Home visiting programmes
- Teenage parents

4.4 SECTION ONE: ANTENATAL PERIOD

4.4.1 PREPARATION FOR PREGNANCY

4.4.1.1 Antenatal classes

One Cochrane review evaluated the effectiveness of individual and/or group-based antenatal education for childbirth and/or parenthood in improving a range of outcomes for pregnant women.[23] Of the nine studies in this review (four of which dealt with antenatal preparation for parenthood – see below), five focused on preparing mothers and in some cases fathers, for birth.

One trial assessed effects, individualised prenatal education and support (provided by a nurse) and aimed at increasing vaginal birth by women who had had a caesarean.
Two trials involved group-based childbirth education including instructions on child care, and in one case, the active promotion of peer group support within the group.
One trial involved prenatal classes for unmarried, low SES prospective fathers.
Many of the studies involved very small to medium sample sizes. No consistent results were found, partly because of the variety in the interventions evaluated and the range of outcomes measured. The largest of the studies (which examined and educational and social support intervention to increase vaginal birth after caesarean section) found similar rates of vaginal birth post caesarean in both 'verbal' (i.e. face to face interaction) and 'document' (media-based) groups. Other than this, the effects of general antenatal education for childbirth remain largely unknown.

Two further papers summarising the results of a large-scale trial of group-based prenatal care for low income ethnic minority mothers aged 14 - 25 in the US were included on expert advice.[24] This trial compared the effect of standard individual care (delivered by a variety of professionals) and group care (led by the same person throughout, and with greater involvement of expectant mothers) from 18 weeks to delivery. Each 2-hour group care session involved physical assessment, education and skills building and support through facilitated group discussion. Women assigned to group-based care reported significantly fewer preterm births, had better prenatal knowledge and greater satisfaction with care. Breastfeeding initiation was higher in group-based care. There were no differences in birthweight or costs of services. Group-based prenatal care resulted in equally improved perinatal outcomes at no added cost but the findings may not be applicable to the UK.

There is some evidence, from a small number of studies that antenatal classes can enhance men's support for their partner during pregnancy, childbirth and beyond (see section on Preparation for Fatherhood).

4.4.2.1 Breastfeeding promotion

NICE guidelines on breastfeeding are based on a comprehensive and detailed meta-review of four systematic reviews (Fairbank et al. 2000; Protheroe et al. 2003; Renfrew et al. 2005; Tedstone et al. 1998) and contain a total of 210 primary studies of interventions to promote initiation and continuation of breastfeeding.[25] Some of these studies begin in the antenatal period. An additional Cochrane review, which involves detailed analysis of a sub-sample of RCTs that measure intervention effect on breastfeeding initiation, is also included.
Antenatal health education / peer support

There is evidence that group-based, interactive, culture-specific, education classes and sessions on positioning and attachment can be effective in promoting the initiation of breastfeeding by women from low income groups.

One-to-one educational programmes tailored to the needs of individual women were found to be more effective with low SES women who had planned to bottle feed, whereas group programmes were effective in promoting successful initiation of breastfeeding among women (also low SES) who already planned to breastfeed.

There is some, weaker evidence that the promotion of breastfeeding may be enhanced by involving partners, and providing incentives (e.g. financial assistance).

Successful interventions were intensive, involving multiple contacts with a professional promoter or peer counsellor (e.g. local mothers with experience in breast-feeding). Antenatal group-based or individual peer support programmes can be effective in increasing rates of initiation among women on low incomes who have expressed a wish to breastfeed.

The least successful interventions involved limited or no group interaction (e.g. self-help manuals, telephone guidance); were not focused exclusively on breastfeeding promotion (i.e. it was only one part of a multimodal health promotion programme) and/or were provided in the hospital/clinic by paediatricians. Nipple preparation in pregnancy has not been found to affect the initiation of breastfeeding.

Combined interventions:
In a coordinated three-step approach to health education for women in Sweden, the combination of advice, leaflets and routine health education plus intensive staff training had significant effects on initiation rates. However, combined antenatal education and limited postnatal telephone support for high-income women and women who intend to breastfeed is not recommended, as existing high rates suggest resources are better spent elsewhere.

Breastfeeding promotion packs:
There is some evidence that distributing breastfeeding literature alone among the general population is not effective in promoting breastfeeding among women of different income and ethnic groups in the UK, Republic of Ireland and USA. Neither was this strategy effective in promoting initiation of breastfeeding when provided as part of formal, non-interactive antenatal education among low-income groups in the US. However, evidence was based on small-scale studies.

4.4.2.2 Low birthweight

One systematic review assessed the effect of psychosocial interventions on reduction of low birth weight. The only effective interventions were found to be smoking cessation programmes (see above), the overall impact of which was found to be modest.[26] No effect on low birth weight was found for: home visits; antenatal groups; preterm birth education; counselling; nutrition focused programmes; work counselling.

Customised antenatal growth charts:
Expert advisers recommend further clinical trials of the promotion of customised antenatal growth charts in order to screen for reduced foetal growth, which is associated with 40% of stillbirths, and is highest among young women.

4.4.2.3 Smoking cessation

We identified three Cochrane reviews (one included on expert advice) and three further systematic reviews.

One Cochrane review of interventions to promote smoking cessation during pregnancy included 64 trials: 51 randomised controlled trials (20,931 women) and six cluster-randomised trials (over 7500 women), which provided data on smoking cessation and/or perinatal outcomes. A significant overall reduction in smoking was found for intervention groups in 48 included trials (relative risk (RR) 0.94, 95% confidence interval (CI) 0.93 to 0.95) with an absolute difference of six in 100 women continuing to smoke. The 36 trials with validated smoking cessation reported a similar reduction (RR 0.94, 95% CI 0.92 to 0.95). Smoking cessation interventions reduced low birthweight (RR 0.81, 95% CI 0.70 to 0.94) and preterm birth (RR 0.84, 95% CI 0.72 to 0.98), and there was a 33 g (95% CI 11 g to 55 g) increase in mean birthweight. There were no statistically significant differences in very low birthweight, stillbirths, perinatal or neonatal mortality but these analyses had very limited power. All reviews found evidence for the effectiveness of smoking cessation interventions with a behavioural focus.

Programmes that determine the effectiveness of interventions aimed at reducing children's exposure to environmental cigarette smoke
A second Cochrane review addressed the effect of interventions aimed at reducing the exposure of children aged 0 – 12 to other people's cigarette smoke (environmental tobacco smoke, or ETS).[27] This review included 9 studies aimed at reducing ETS of children of preschool years. Brief counselling for parents of children aged 0 – 3 (in both cases, one face to face session followed by brief telephone sessions) was found to be effective in two trials. One successful intervention was designed exclusively for low SES, ethnic minority families.

Brief smoking cessation programmes
One review found evidence that the combination of brief counselling sessions (5-15 minutes) delivered by a trained provider, combined with simple, pregnancy-specific self-help materials and social support (focus groups; 'buddy' letter, contract and tip sheet) increased rates of cessation among pregnant smokers compared with a non-intervention and historical control group.[28]

Interventions with a behavioural focus
All reviews that included interventions with a behavioural focus found evidence that these could succeed in achieving smoking cessation . Such interventions were found to be most effective when combined with social support and the provision of incentives for achievement. The evidence about the effectiveness of media-based interventions (e.g. customised manuals sent to pregnant women at regular intervals) is mixed.[29] Some findings suggest that increased intensity of the programme (duration and number of sessions) combined with the provision of incentives for achievement and access to social supports (eg. peer groups, home visitors and/or antenatal groups) is the most effective strategy to motivate parents smoking cessation.[30]

Behavioural interventions combined with rewards for smoking cessation and social support
The Cochrane review of interventions to promote smoking cessation during pregnancy found that this strategy (two trials), resulted in a significantly greater smoking reduction than other strategies (RR 0.77, 95% CI 0.72 to 0.82).

Stress reduction strategies incorporated into home visiting
The provision of home visits and social supports to reduce the stress of pregnant women has proved an effective strategy to increase smoking cessation. One UK intervention (non RCT) which reported a 47% reduction in smoking involved counselling in antenatal care, parent groups, home visits and the provision of points of contact in the community. [31]

Patient-led counselling focused on changing beliefs about smoking
Patient-led counselling that involves helping women define their motivation to give up smoking and use this motivation as the basis for a concrete, individualised smoking reduction plan has also been shown to be effective.[32] In this study, 20 of 150 participating women ceased smoking or reduced smoking levels, whereas the control group reported a significant increase in smoking during pregnancy.

Smoking relapse prevention
The Cochrane review of interventions to promote smoking cessation during pregnancy found no statistically significant effect on relapse in five trials of smoking relapse prevention.

Nicotine replacement therapy (NRT)
One review incorporated trials of nicotine replacement therapy.[33] Results were borderline unless accompanied by strong social support and a reward component, in which case they had a significantly stronger effect. There are not enough trials to ensure safe use of NRT during pregnancy.[34]

Clinic-based provision of information on smoking risks
The provision of information on the dangers of smoking, in antenatal clinic visits, and contact details of local smoking cessation programmes is not recommended as a stand-alone

intervention, since it appears ineffective unless accompanied by behavioural components and the provision of social supports.[35]

Programmes that aim at involving partners in support of smoking cessation
A third Cochrane review, included on expert advice, assessed the effectiveness of interventions that involve the partners of smokers in order to start and / or sustain smoking cessation.[36] No evidence was found that such programmes enhance quit rates.

Summary - Preparation for pregnancy

Antenatal classes
The benefits of traditional antenatal programmes that focus on pregnancy and childbirth remain unclear. No consistent results were found, partly because of the wide variety in the focus and methods of the included programmes, and the wide ranging outcomes measured. Two US-based studies that were included on expert advice showed some significant findings.

In conclusion, there is a lack of evidence regarding the best method of delivering antenatal education, and a lack of clarity regarding the extent to which such classes are being used to promote the transition to parenthood (e.g. emotional preparation for parenthood, parenting and the parent-infant relationship).

Further research is needed to identify the focus of such programmes, and the most effective means of supporting their delivery to prospective parents.

Breastfeeding promotion
The evidence supports the use of antenatal group work to prepare mothers for breastfeeding, which has an interactive component; peer support schemes (such as 'Best/Breast/Bosom Buddy'), which involve local experienced breast feeders as volunteers; and multimodal education/social support programmes combined with media campaigns. Promotion of breastfeeding appears to be most effective if it begins in the antenatal period and is combined with post-partum support (see below).

There is further need for research on interventions (e.g. the UNICEF/World Health Organization Baby Friendly initiative) in UK settings because most empirical studies have taken place in the US or developing countries.

Effective interventions (i) have a behavioural focus (ii) are geared at changing patient's beliefs or (iii) address stress management. There is some evidence that interventions are most effective when they combine a behavioural component with social support.

Low birth weight
The only effective interventions were found to be smoking cessation programmes (see above).

Smoking cessation
Smoking cessation is one of the few effective strategies for prevention of low infant birth weight, premature birth and neonatal mortality. Two reviews of smoking cessation strategies recommend the provision of smoking cessation programmes in all maternity care settings.[37]

Treatment options include behavioural training with adjunctive social supports[38] and motivational interviewing.[39] However, interventions should be locally piloted and care needs to be given to understanding the barriers to parents' involvement in smoking cessation programmes, to providing interventions in ways that engage parents and offering at times where interventions are likely to be beneficial. Smoking is associated with lower SES and care is also needed to avoid alienating parents through perceived 'parent blaming'.[40] Interventions that target mothers immediately before or after birth have not been effective and may alienate intended beneficiaries.[41] Wider action on tobacco control is needed at national, regional and local levels programmes for smoking cessation in pregnancy and for parents of young children.

4.4.2 PREPARATION FOR PARENTHOOD

4.4.2.1 Transition to parenthood

Antenatal group-based parenting programmes aimed at promoting the transition to parenthood and focusing in particular on issues such as the emotional changes that parents experience, parenting skills, and issues such as bonding and attachment, have recently been developed and evaluated. We identified one Cochrane review evaluating their effectiveness and 3 further studies were included on expert advice.

Standard antenatal parenting classes
The Cochrane review introduced in section 4.4.1.1 above included four trials of antenatal interventions which were aimed at helping parents prepare not only for birth, but (to varying degrees) for parenthood and for changes in the partner relationship.

One trial involved group-based instruction, for both fathers and mothers, on age-appropriate development in the first year of life through demonstrating parallels between the challenges of labour and those of early parenting. The goal was to enable parents to generalise from labour coping into postpartum coping.[42] Parenting knowledge was measured, but the study did not measure parenting behaviour post-birth.

A second intervention involved fathers of relatively low SES. Content included newborn care, newborn behaviour paternal self image, parent-child interaction and child developing. The educational method used involved instruction and modelling.[43] Increased father-infant sensitivity and empathic behaviour was reported post-birth.

Two interventions focused on enhancing intrauterine attachment by increasing mothers' awareness of foetal activity and massaging their abdomen for foetal response. Effects on maternal attachment behaviour were reported 2-4 days postpartum in both cases.

Group-based parenting programmes
A further RCT was identified in a systematic review of interventions in pregnancy and early childhood.[44] The trial comprised of an educational intervention: two second-trimester classes facilitated by two social workers. Seventy primiparous, low-risk couples were randomised into a no-treatment control or allocated to receive didactic sessions, role playing and values-clarification exercises. These classes were based on a previous assessment of the educational needs of postpartum couples. The experimental group scored significantly lower in anxiety and

higher on dyadic adjustment at both postpartum time periods than the control group. The experimental group also reported a higher degree of postpartum adjustment.

One non-randomised controlled trial which evaluated the effectiveness of PIPPIN (Parents and Infants in Partnership), an attachment-based parenting programme involving both fathers and mothers, and begins in the antenatal period and continues beyond childbirth was included on expert advice.[45] PIPPIN compared the adjustment of couples who participated in the programme with a waiting list control group. The findings suggested that participation in the programme led to a significant increase in psychological well-being, parental confidence, and satisfaction with the couple and parent-infant relationship in the postnatal period. For further examples see Preparation for Fatherhood, below.

Enhanced parenting programmes
One RCT identified in one of the included systematic reviews evaluated the effectiveness of the STEEP Project (Steps Toward Effective, Enjoyable Parenting), a parenting programme that begins in late pregnancy and involves bi-weekly home visits starting pre-natally until the infants' first birthday.[46] Mother-infant group sessions were offered in parallel, with the aim of promoting healthy parent-infant relationships and preventing socio-emotional problems. The target population was first-time mothers at-risk for parenting problems due to poverty, young age, lack of education, social isolation, and stressful life circumstances. At 19 months follow-up, intervention mothers had lower depression and anxiety scores and were more competent in managing their daily life than controls. They had a better understanding of their infants' needs and they provided a more stimulating and organised home environment. There was a trend for their infants to be more securely attached.

4.4.2.2 Preparation for Fatherhood

A range of interventions are being used to support fathers in the transition to parenthood.

One systematic review[47] was identified of interventions that are primarily directed at fathers, or in which the intervention included a significant component in terms of preparation for fatherhood. This comprised one RCT (2 papers) and one small-scale pre- and post-test study. One further RCT and a quasi-experimental study were also included on expert advice.[48]

Parenting groups and antenatal childbirth classes
One RCT evaluated the effectiveness of a prenatal intervention with low socioeconomic, first-time fathers in the US. Of the 67 men who were recruited by their partners, half were randomly assigned to participate in an intervention programme designed to acquaint fathers-to-be with information, insights, and clinically appropriate techniques in responsive care for infants. Intervention group fathers received two intensive $1^1/_2$-hour sessions emphasising the nature and capabilities of the preborn/newborn and sensitive responsiveness to preborn/newborn cues and to partner cues. Postnatally, fathers were videotaped with their infants during two feeding interactions. The results showed that post-intervention fathers were rated as being significantly more sensitive during feeding interactions with their newborn infants. This difference was, however, not present at the one-month follow-up.[49]

One RCT compared a standard 6-session hospital-based antenatal programme ('Preparation for Parenthood') with (i) the same intervention enhanced by additional sessions on postpartum psychosocial difficulties; and (ii) an enhanced session on play with babies.[50] Both expectant fathers and mothers took part. The intervention was associated with mothers' reporting greater satisfaction with men's involvement in domestic and child care tasks at 6-weeks postpartum. No other main effects were found.

One quasi-experimental study compared the effectiveness of father-focused discussion classes with traditional childbirth classes on expectant fathers' stress/psychological symptom status, coping strategies, social support, and spousal relations (both supportive behaviour toward their partners and couple-conflict behaviour) (see Preparation for Childbirth – Antenatal Classes, above).[51] Relative to fathers in traditional childbirth classes, parents in the father-focused discussion classes showed significantly increased use of reasoning during conflicts with their partners, and increased involvement in housework. Both groups of fathers reported a significant increase in social network support and an increase in baby/pregnancy-related activity. Neither group substantially increased their overall coping responses, although men in the father-focused group significantly changed their coping efforts by seeking more social support, particularly in terms of obtaining information and emotional support from their partner's physician.

Summary - Preparation for Parenthood

Transition to parenthood
Evidence about the effectiveness of antenatal group-based programmes is still extremely limited both in terms of quantity and quality, but provides some indication that such programmes have the potential to improve a range of outcomes such as dyadic adjustment, maternal psychological well-being, parental confidence, and satisfaction with the couple and parent-infant relationship in the postnatal period.

The evidence suggests that the provision of this form of social support should be responsive to the priorities of participating parents and include sessions addressing the transition to parenthood; relationship issues and preparation for new roles and responsibilities; the parent-infant relationship; problem-solving and conflict-resolution skills.

Further research is required to assess the effectiveness of antenatal parenting programmes in supporting pregnant women and their partners to prepare for their future role as parents.

Supporting fathers
There is some evidence from a small number of studies (some of which are at risk of bias) that antenatal classes can enhance men's support for their partner during pregnancy, childbirth and beyond, and prepare men for fatherhood. However, few studies have evaluated the effectiveness of such support with non-English speaking fathers and most of the available evidence is from the US.

The evidence indicates that effective interventions should be flexible, participative, and responsive to the self-defined needs of participating parents. There is an urgent need for further research about the best methods of preparing fathers to both support their partners and prepare for their new role during the antenatal period.

4.4.3 IDENTIFICATION OF NEED/PROBLEMS

Identification of need/problems can be undertaken at a number of different levels, and a number of methods of identifying needs and problems are available including promotional and motivational interviewing, and screening for specific problems such as postnatal depression and domestic abuse. Only promotional interviewing is discussed here because it is a generic technique that can be used across both universal and progressive levels of the CHPP, and other techniques/strategies are discussed under the specific area of need being identified e.g. PND or domestic abuse.

4.4.3.1 Promotional interviewing

Promotional interviews involve the use of a structured way of working in partnership with families during the ante- and post-natal periods to help them explore their situation and make informed decisions and develop effective problem-solving strategies. Nine papers report in one journal on a two-year quasi-experimental study (involving an experimental and a comparison group) evaluating the effectiveness of the European Early Promotion Project (EEPP) on primary health care providers' (PHCPs) (i) knowledge and self efficacy and (ii) ability to identify need in families. Promotional interviews with health care staff were used as part of the EEPP to support families (see above), and to identify families in need of further support. Results were not uniform, nor did they reach statistical significance across all sites. However, in the case of the UK, significant intervention effects were found for PHCPs' knowledge and ability to correctly identify family need; marginally significant improvements were found in the self-efficacy of UK PHCPs.[52]

4.4.3.2 Antenatal depression

Prevention of ante-natal depression
Two systematic reviews evaluated the effectiveness of psychosocial interventions (e.g. psychoeducation) to prevent onset of depression during the ante-natal period (See also section on prevention of postnatal depression).[53] There is no evidence that these interventions prevent the onset of depression during the ante-natal period, and as per NICE guidelines the routine, universal provision of these is not currently recommended.

Identification of antenatal depression
The NICE review of standard postnatal care included 8 studies that measured the predictive value of the 10-item Edinburgh Postnatal Depression Scale (EPDS).[54] The EPDS has been found to accurately predict which women would not become depressed, but was relatively poor at predicting those who would experience depression at a later date.

A brief (and less expensive) identification strategy is for practitioners to ask women two questions (whether they have experienced low mood, or have felt a decline in interest and pleasure in life over the previous month). A third question has been proposed: whether the respondent would like help. These too, have relatively low predictive value.

Although neither the EPDS nor the '3 questions' have robust predictive value, NICE guidelines favour the use of 3 questions over the EPDS as women themselves have been found to dislike the EPDS, and because the 3 questions can be asked in both the antenatal and postnatal periods.

Treatment of antenatal depression and anxiety

Psychological support
One Cochrane review evaluated the effectiveness of psychological support to treat antenatal depression, and this included only one trial comprising 38 women who met Diagnostic and Statistical Manual for Mental Disorders-IV criteria for major depression.[55] The results showed that compared with a parenting education program, interpersonal psychotherapy was associated with a reduction in the risk of depressive symptomatology immediately post-treatment using the Clinical Global Impression Scale (one trial, n = 38; relative risk (RR) 0.46, 95% confidence interval (CI) 0.26 to 0.83) and the Hamilton Rating Scale for Depression (one trial, n = 38; RR 0.82, 95% CI 0.65 to 1.03).

A comprehensive review of the identification and treatment of depression (as well as other mental health problems including panic disorders, eating problems and post-traumatic stress) in the antenatal and postnatal period is presented in NICE guidelines.[56] These advise the same forms of treatment for antenatal and postnatal depression. Similarly, little distinction is made between the treatment of anxiety in the antenatal, and the postnatal, period.

Summary - Identification of Needs/Problems

Promotional interviewing
Promotional interviewing is a structured way of working during pregnancy and the postnatal period to help parents to explore their situation and develop problem-solving skills. It is also used to identify families in need of further support.

The limited evidence available suggests that promotional interviewing may improve the ability of professionals to identify families that need additional support.

Further research is needed to test the effectiveness of promotional interviewing as both a means of enabling practitioners to identify families in need of further support and to help families to develop problem-solving skills.

Prevention of antenatal depression
There is no evidence that antenatal interventions prevent the onset of depression during the ante-natal period, and as per NICE guidelines the routine, universal provision of these is not currently recommended.

Identification of antenatal depression
The use of simple questions to identify women with ante/postnatal depression has similarly low predictive validity to screening tools such as the EPDS, but appears to be more acceptable to women.

Treatment of antenatal depression
There is rigorous evidence available indicating the effectiveness of psychological treatments for women who have symptoms of depression and anxiety in the antenatal period. This shows that brief (4 – 6 sessions) inter-personal psychotherapy and cognitive behavioural therapy are effective for pregnant women who have had a previous episode of depression or anxiety and who have developed symptoms that do not meet diagnostic criteria but that significantly interfere with social and personal functioning.

Social support (individual, including support through antenatal home visiting, or group-based interventions) is effective for women who have not had a previous episode of depression or anxiety.

4.4.4 SUPPORTING PREGNANT WOMEN AT HIGH RISK

4.4.4.1 Domestic abuse

Identification of domestic abuse
Three systematic reviews evaluated the effectiveness of antenatal identification of domestic abuse.[57] A number of validated assessment tools for use by health workers were identified. Overall, the findings suggest that assessment using 1 - 3 questions is as reliable as more complex measures.

However, there is no adequate evidence about the potential harm associated with the assessment process.

Prevention/treatment of domestic abuse
A systematic review of interventions in primary health care settings, designed to prevent and treat violence against women, identified four types of intervention for abused women: shelters, post-shelter advocacy counselling, personal and vocational counselling and prenatal counselling.[60] With the exception of a single RCT that showed that women who had spent at least one night in a shelter reported a decreased rate of re-abuse and improved quality of life during the subsequent two years, there is insufficient rigorous evidence concerning the effectiveness of any other intervention in reducing women's exposure to violence.

A review of interventions to prevent and treat violence against women identified 10 studies of interventions that targeted male perpetrators alone or with their partners[58]. Only one of the ten studies was of sufficient methodological rigour to be reported here, and even this is of limited generalisability because the sample consisted entirely of US Navy staff. The study found limited empirical evidence of the success of interventions for victims of domestic abuse or in bringing about and sustaining change in victimisers. and it is concluded that there is probably no one 'successful' component in terms of the treatment of victims, and that specialist agencies are best placed to design appropriate intervention strategies.

4.4.4.2 Alcohol dependency

One systematic review of motivational interviewing interventions in prenatal clinics included 9 RCTs of motivational interventions aimed at the cessation of any form of alcohol consumption during pregnancy. None of the studies included women enrolled in formal alcoholism treatment, although four trials included participants with combined alcohol/drug dependence.[59] As health practitioners are likely to see women who are ambivalent about abstinence (either unaware that their level of consumption harms the infants, or uncertain as to how to change) motivational interviewing (MI) aims to increase their readiness for change. Interventions ranged from brief education, advice and self-help manuals, to more intensive programmes. A variety of brief motivational interventions (ranging from one to four sessions), delivered in the home or in clinical settings, were found to be effective in all but one study. Evidence of effect was reported for both 'lighter' and heavy drinkers. One study found that the provision of written information without an interview was enough to galvanise change in women in the sample, and that effects were not enhanced by the provision of a video and face to face advice.

In contrast, a Cochrane review of interventions for drug and alcohol addicted women which included 3 studies on MI, found no significant effects for MI on obstetric or neonatal outcomes[60]. The findings from this study had limited generalisability, however, due to the fact that they all involved poor, African-American women with low levels of education.

MI appears therefore to have some value in precipitating change in terms of addictive behaviour, but further research is needed to identify which factors (i.e. such as level of alcohol consumption or gestational age upon enrolment) are associated with treatment effectiveness.

One systematic review of Motivational Interviewing (involving 72 randomised trials not exclusively during pregnancy/the postnatal period) was included on expert advice.[61] This found a significant effect for MI on alcohol use abuse, drug addiction, smoking cessation, weight loss and increase of physical activity.

One Cochrane review of home visiting (HV) during and after birth for women with drug and alcohol problems (6 studies) included no interventions with a significant antenatal component, but found some evidence that postnatal home visits increased engagement in drug treatment services. However, the studies do not provide evidence to indicate that treatment adherence improved health outcomes for infant or mother.[62]

4.4.4.3 Drug addiction

Overall, four systematic reviews were identified evaluating the effectiveness of interventions to treat drug addicted women. Two further studies are included on expert advice.[63]

Methadone drug treatments
One Cochrane review was identified evaluating the effectiveness of attendance in methadone drug treatment in pregnancy. Results showed an increase in birth weight, increase in one minute APGAR score, and overall lower costs.[64]

Contingency Management and Motivational Interviewing
One systematic review of Motivational Interviewing (involving 72 randomised trials not exclusively during pregnancy/the postnatal period) was included on expert advice.[65] This found a significant effect for MI on alcohol abuse, drug addiction, smoking cessation, weight loss and increase of physical activity. In contrast, a Cochrane review of interventions for drug and alcohol addicted women which included 3 studies on MI, found no significant effects for MI on obstetric or neonatal outcomes[66]. Generalisability of this study was limited to poor, African-American women with low levels of education. Interventions of this nature may also be less effective among people who have been coerced into treatment.

MI therefore has value in motivating change, but further research is needed to establish which factors (such as level of drug consumption or gestational age upon enrolment) are associated with treatment effectiveness.

Home visiting
A Cochrane review of 6 home visiting programmes for drug or alcohol dependent women found no interventions with a significant antenatal component.[67]

Doula programmes
Two studies of enhanced Doula programmes were included on expert advice. These evaluated the effectiveness of a service delivered by local paraprofessional women to young mothers who met 3 of 8 risk factors (including addictions and poverty). The service comprised psychosocial support, training, and liaison with community networks, work with families and case management in the pre- and post-natal period and during childbirth where necessary. Findings showed that this service was effective in increasing the sensitivity of mothers in the postnatal period, and was associated with enhanced breastfeeding initiation and reduced caesarean birth rates.[68]

Parenting programmes
One systematic review of parenting interventions with drug-using mothers included 6 RCTs (see Postnatal period – Parenting Programmes, below).

4.4.4.4 Demographically high-risk mothers/parents

Certain demographic characteristics, including poverty and age (e.g. teenage pregnancy), are associated with poorer outcomes for parents and their children. In these circumstances, both parents and children may benefit most from intensive parenting interventions.

Home visiting programmes
One review of reviews and two systematic reviews have been included. Two further systematic reviews focused exclusively on delinquency/offending in intervention children, and on women's use of health services, were also included.

The review of reviews comprised of nine systematic reviews and presented a comprehensive overview of the effectiveness of antenatal and postnatal home visiting. This showed that home visiting programmes (many of which were began during the ante-natal period) undertaken by health professionals or adequately trained paraprofessionals were associated with higher levels

of mother-infant interaction, breastfeeding initiation, parenting knowledge, medical knowledge levels, support levels, health habits, prevention of injury, parenting satisfaction, some reduction of symptoms of maternal depression and anxiety and improvement of some child cognitive outcomes.[69] This review also found insufficient evidence to support the use of home visiting for low birth weight or pregnancy related outcomes, immunisation, hospital admission or children's diets. A separate systematic review also found limited evidence of effect of home visiting on birth complications or birth outcomes.[70]

Evidence of the effect of home visiting on child abuse outcomes is unclear partly because of the issue of surveillance bias whereby home visitors are more likely to detect child abuse and neglect as a result of the increased opportunities for surveillance resulting from intensive, regular visits.[71]

A second systematic review found some evidence of the effectiveness of home visiting programmes on prevention of disruptive behaviour problems in children in later childhood in three of seven studies that used this outcome measure.[72] The Nurse-Family Partnership home visiting programme developed by Olds (1986, 1998) showed significant effects on a range of measures including convictions/arrests and probation violations of intervention children when aged 15. A third review examined the effect of home visiting on women at risk of problem pregnancy / childbirth (e.g. premature birth / infant low birth weight).

Summary - Support for Pregnant Women at High-Risk

Domestic abuse
Simple questions should be used as part of the routine assessment of women presenting during pregnancy and the postnatal period, to identify women who are being exposed to domestic abuse.

There is, however, limited evidence concerning the effectiveness of specific interventions to prevent or treat domestic abuse.

Further research is needed to identify i) effective methods of supporting women who are exposed to domestic abuse, both in terms of the immediate safety and long-term well being of themselves and their children; ii) interventions with men who are and who are not mandated to treatment; and iii) to gauge the effectiveness of interventions beyond the healthcare setting (e.g. public awareness campaigns, community support initiatives, including those for women in ethnic minorities.

Alcohol consumption/addiction
There is some evidence that brief motivational interviewing can be effective in motivating mothers who are light to moderate drinkers to cease drinking during pregnancy.

There is good evidence that the treatment of alcohol abuse (as opposed to light to moderate drinking) should be tailored to the specific needs of the client and should involve a psychosocial component in addition to standard treatment. Treatment options include brief motivational interventions/motivational interviewing, behavioural couples-therapy (where there is a drug-free partner), family therapy, mutual aid (self-help) approaches, including community reinforcement

approaches and/or network therapy (exploration and development of network support). There is some evidence that treatment may be more effective if it includes the provision of rewards and incentives (contingency management). Information leaflets should include material for other family members.

Further research is required about the effectiveness of individual treatment enhanced by multimodal, community-based paraprofessional support, similar to the extended Doula model for teenage mothers in recovery from alcohol or drug dependence. Further research is also needed regarding the benefits of family counselling (which has been shown to increase engagement and retention of resistant problem drinkers and drug users) in the antenatal/postnatal period.

Drug addiction
As in the case of alcohol addiction (with which it frequently co-occurs) there is good evidence showing that the treatment of drug use should be tailored to the specific needs of the client but should involve a psychosocial component in addition to standard care (e.g. methadone and counselling). Treatment may be more effective if it includes the provision of rewards and incentives (contingency management). Information leaflets should include material for other family members.

As in the case of alcohol abuse, further research is required about the effectiveness of multimodal, community-based paraprofessional support, similar to the extended Doula model for teenage mothers in recovery from alcohol or drug dependence. Further research is also needed regarding the benefits of family counselling (which has been shown to increase engagement and retention of resistant problem drinkers and drug users) in the antenatal/postnatal period.

Demographically at-risk mothers/parents
There is extensive evidence evaluating the effectiveness of home visiting programme. This indicates that their effectiveness is dependent on a range of process factors such as the intensity and frequency of the service, and the skills of the programme provider. Programme effect sizes are stronger for interventions that last for six months or more and involve more than 12 home visits. Interventions that begin early (either antenatally or at birth) are more effective than those which begin in later parenthood, as are programmes that are delivered by professionals as opposed to para-professionals.

Home visiting interventions also appear to be most effective where they are focused on a broad range of outcomes and are multi-focused, targeted and of medium- to long-term duration.

The evidence suggests that enrolment based on demographic or community level risk factors is preferable to enrolment based on individual risk factors, due to the fact that individual assessment in the prenatal period to identify risk is both unreliable and potentially stigmatising.

4.5 SECTION TWO: POSTNATAL PERIOD

4.5.1 CHILDBIRTH

4.5.1.1 Debriefing following childbirth

Debriefing is a one-off semi-structured conversation that is used by psychologists to support individuals who have had a traumatic experience, with the aim of reducing the effects of the trauma. One systematic review assessed the effectiveness of formal debriefing about the birth experience in reducing postpartum emotional distress.[73] A total of three studies (n = 3404 women) reported in four papers examined the use of debriefing or non-directive counselling to prevent or reduce psychological morbidity following birth. The two largest RCTs show that a single debriefing session with the mother whilst in the postnatal ward has no statistically significant value in reducing psychological morbidity and may even be harmful. In contrast, women reported that an opportunity to talk with someone about the birth was helpful in facilitating recovery.

4.5.1.2 Breastfeeding promotion

1 review of reviews (NICE guidelines, which incorporates 3 systematic reviews) provides a summary of findings on the effect initiatives to promote initiation and continuation of breastfeeding.[74] The following summarises the key findings:
Postnatal hospital stay

Rooming-in (provision of a home-like, private room), has been shown to be effective in promoting breastfeeding, based on studies in developing countries. However, these studies are not of high quality.

There is strong evidence for the following, during the postnatal hospital stay: Skilled breastfeeding support proactively offered by trained peers or professionals, to women who want to breastfeed; unrestricted feeding from birth onwards; unrestricted kangaroo care/skin-to-skin care from birth onwards; regular breast drainage/treatment of mastitis; provision of antibiotics for infective mastitis.

Although the evidence is limited, the following interventions (which can be delivered in the postnatal hospital stay) show promise: basing prevention and treatment of sore nipples on principles of positioning and attachment; cabbage leaves/extract for treatment of engorgement; systemic antibiotics for infected nipples.

The following interventions have been found to have no effect, or a harmful effect, on the initiation of continuation of breastfeeding: separation of mothers and infants in hospital, following birth (e.g. for treatment of jaundice); restricting the timing and/or frequency of breastfeeds; restricting mother/baby contact from birth onwards; routine use of supplementary fluids; provision of discharge packs containing samples or information on formula feeding; breast pumping before the establishment of breastfeeding in women at risk of delayed lactation; topical agents for the prevention of nipple pain.

Peer support programmes:
Peer support programmes as stand-alone interventions have been shown to be effective in the postnatal period for women who expressed a wish to breastfeed, but not for women who had decided to bottle-feed. Women who have decided to bottle-feed are best served by individual, tailored breastfeeding education that begins in the antenatal period and continues postnatally.

As in the antenatal period, the most successful interventions are discursive and interactive. Qualitative research exploring why some women on low incomes do not want to breastfeed concluded that breastfeeding is a practical skill. The confidence and commitment to breastfeed successfully are therefore best achieved by exposure to breastfeeding rather than being told about it or reading about it.

Only one UK-based randomised controlled trial (RCT) was found, which evaluated the effect of social support, provided by midwives, for socially disadvantaged women. Support was provided in the form of home visits and telephone calls on hospital discharge. No significant difference was reported in initiation rates between the intervention and control groups. However, this finding may have been influenced by the support received by some of the control group as 'standard care'. Feedback given by women regarding the intervention was positive and suggested that a midwife listening to them was important.

There is no evidence to support the following interventions: GP clinic visit at one week postpartum; a single home visit by community nurse following early discharge; dopamine antagonists for 'insufficient milk'.

Although the evidence base is limited, the following interventions show promise: self-monitoring daily log for women from higher SES groups; combination of supportive care, teaching breastfeeding technique, rest and reassurance for women with 'insufficient milk'.

Breastfeeding promotion packs:
There is some evidence that the distribution of breastfeeding literature is not effective in promoting breastfeeding among women of different income and ethnic groups in the UK, Republic of Ireland and USA. Although the evidence was based on small-scale studies, the provision of breastfeeding promotion packs was not found to be effective even when provided as part of formal, non-interactive antenatal education among low-income groups in the US.

Multi-faceted interventions
Multi-faceted interventions have been shown to increase initiation rates. The majority of effective multifaceted interventions included a media campaign, in combination with health education programmes, training of health professionals and/or changes in government and hospital policies. The majority of effective multifaceted interventions included a peer support programme in combination with health education programmes, media programmes and/or legislative and structural changes to the healthcare system.

Initiatives in the health sector aim to change the organisation of health services and care received by women in favour of the promotion of breastfeeding. These interventions are mostly conducted in the hospital sector and have included evaluations of the training of health professionals, 'rooming-in', the reduced use of artificial milk, health education activities and studies conducted by the WIC programme (US Department of Agriculture's Program for

Women, Infants and Children). The large health sector initiative set up by the WIC programme, which focused on low income American women, reported increases for initiation and duration of breastfeeding. Interventions included group or individual health education and/or peer support programmes, delivered in both the antenatal and postnatal periods in either hospital or clinic settings. Again, programmes including a peer support component appeared to be most effective.

Training of health care professionals significantly improves women's breastfeeding initiation and continuation rates, with the WHO/UNICEF training package showing most effective results in developing countries. [75]

Summary - Childbirth

Debriefing
The evidence shows that a one-off debriefing session is not effective in reducing psychological morbidity in women who have experienced a traumatic childbirth and may even be harmful.

Opportunities to talk about the birth experience *that do not involve the use of formal debriefing techniques* are currently being recommended by NICE guidelines, particularly for women who have experienced a Caesarean birth or if their infant has spent time in a SCBU.

Breastfeeding promotion
Breastfeeding should be initiated as soon as possible post delivery (1 hour post delivery), using support from healthcare professional, or peers unless medically inappropriate; 24-hour rooming-in and continuing skin-to-skin contact where possible. On-going consistent sensitive expert feeding support about infant positioning. Provide information about the benefits of breastfeeding and colostrum and timing of first breastfeed. Support should be culturally appropriate.

Group classes on breastfeeding with an interactive component; peer support schemes (such as 'Best/Breast/Bosom Buddy') using local experienced breast feeders as volunteers In antenatal period; multimodal education/social support programmes combined with media campaigns. Recommend Breast/Bosom Buddy peer support initiatives; as per HDA Guidance.
The evidence does not support the use of written materials as a stand-alone intervention as per NICE Guidance. [76]

There is an urgent need for research into clinical problems, including 'insufficient milk', sore nipples, engorgement, and the breastfeeding needs of babies and mothers with particular health needs. There is very little research to inform any aspect of public policy. The impact of breastfeeding promotion programmes on breastfeeding practices among women of different ethnic groups in the UK should be evaluated. Most trials have taken place among low SES (usually African American) women in the US, or in developing countries; further robust trials are needed in UK settings. Further research is needed on the effect of the WHO/UNICEF Baby Friendly Initiative in UK contexts.

4.5.2 PROMOTION OF BONDING

4.5.2.1 Skin-to-skin contact (Kangaroo Care)

Skin-to-skin contact (also known as Kangaroo Care) involves the carer holding the baby so that there is close contact, and is used for both preterm and healthy babies. Two Cochrane reviews and one RCT in a review of interventions with fathers evaluated the effectiveness of SSC.[77]

Healthy full-term infants: One Cochrane review evaluated the effectiveness of Kangaroo Care interventions with healthy full-term infants and included 30 studies involving 1,925 participants (mother-infant dyads).[78] Kangaroo care by mothers of healthy, full term infants was associated with a range of improved outcomes including mother-infant interaction, attachment behaviours, infant behaviour and infant physical symptomatology. Data from more than two trials were available for only 8 out of 64 outcome measures. Significant effects of early kangaroo care were found for breastfeeding at one to four months post-birth (10 trials; 552 participants) (odds ratio (OR) 1.82, 95% confidence interval (CI) 1.08 to 3.07), and breastfeeding duration (seven trials; 324 participants) (weighted mean difference (WMD) 42.55, 95% CI -1.69 to 86.79). Trends were found for improved summary scores for maternal affectionate love/touch during observed breastfeeding (four trials; 314 participants) (SMD) 0.52, 95% CI 0.07 to 0.98) and maternal attachment behaviour (six trials; 396 participants) (SMD 0.52, 95% CI 0.31 to 0.72) with early SSC. SSC infants cried for a shorter length of time (one trial; 44 participants) (WMD -8.01, 95% CI -8.98 to -7.04). Late preterm infants had better cardio-respiratory stability with early SSC (one trial; 35 participants) (WMD 2.88, 95% CI 0.53 to 5.23). No adverse effects were found.

Fathers of healthy full-term infants: One RCT was identified in a review of interventions for fathers (see Support for Fathers).

Low birth weight infants: Three studies, involving 1,362 infants, were included in a Cochrane review that compared Kangaroo care with hospital care for LBW infants.[79] Comparison of Kangaroo care with standard clinical care for low birth weight infants showed that while it appeared to reduce severe infant morbidity without any serious side effects, there was insufficient evidence to recommend its use as an alternative to standard clinical care. However, as all interventions took place in developing countries the applicability of these findings to the UK is uncertain.

4.5.2.2 Information about sensory and perceptual capabilities of the infant

Information about the sensory and perceptual capabilities of infants is provided to parents with the aim of improving interaction, and the Brazelton Neonatal Behavioural Assessment Scale (NBAS) is one of a number of structured methods with which health care professionals can provide such advice to parents.

One systematic review was identified that assessed of the effect of the Brazelton Neonatal Behavioural Assessment Scale (NBAS) (training parents to administer the NBAS or having them observe an examiner administering NBAS) on later parenting.[80] This review included 13 studies with a total of 668 families. Eight studies involved mothers only, one study involved fathers only,

and four included both fathers and mothers. The meta-analysis found a small to moderate impact on parent behaviour, knowledge, parental representations and increases in mother-infant and father-infant interaction following the provision of information about the perceptual/sensory capabilities of their baby.

A systematic review of interventions that focused on fathers[81] contained an additional trial (RCT, reported as two papers) of parental education using a booklet on the capabilities of the foetus/newborn and modelling sensitive responsiveness to the foetus/newborn (see 'Supporting Fathers', below). This was provided both individually and in groups with low SES, first-time fathers (see section on Support for Fathers).

Further research with NBAS-based interventions is needed to identify the role of moderator variables including the frequency with which the NBAS is administered, and who administers it. For example, several researchers have discussed the possibility that parental administration of NBAS may be more effective than passive observation and explanation, and similarly, there has been little comparison to date of the effect of repeated administrations of the NBAS, in contrast to the more usual one-off application.

4.5.2.3 Infant carriers

Soft infant carriers can be used to promote closeness between mother and infant. One RCT (included in a systematic review of interventions to enhance maternal sensitivity/infant attachment security), evaluated the effectiveness of infant carriers in improving maternal sensitivity and infant attachment. The results showed that intervention mothers appeared more sensitive to infant vocalisations and infants appeared more securely attached at 13 months.[82] (See Parent Child Psychotherapy, below).

4.5.2.4 Infant massage

Infant massage involves the carer gently stroking the infant using rotational movements and sometimes oils, and is used in some Special Care Baby Units and more recently in the community, particularly with mothers experiencing postnatal depression.

Two Cochrane reviews and one RCT (in a systematic review of interventions with fathers) were identified that evaluated the effectiveness of infant massage (delivered by the mother or another caretaker) in improving a range of outcomes for both mothers and infants.

Healthy full-term infants
One Cochrane review of infant massage for healthy full-term infants was identified and included 23 studies (of which one was a follow-up and 13 were included in a separate analysis due to concerns about their rigour).[83] The nine remaining RCTs suggest that infant massage has no effect on growth, but provides some evidence suggestive of improved mother-infant interaction, sleep and relaxation, reduced crying and a beneficial impact on a number of hormones controlling stress. Results showing a significant impact on number of illnesses and clinic visits were limited to a study of Korean orphanage infants. It is concluded that in the absence of evidence of harm, findings are adequate to support the use of infant massage in the community,

particularly in contexts where infant stimulation is poor. Further research is needed, however, before it will be possible to recommend universal provision.

Preterm/LBW infants
One Cochrane review of massage for preterm infants found some evidence of benefit for developmental outcomes for low birth weight babies[84] - massage interventions improved daily weight gain by 5.1g (95% CI 3.5, 6.7g) and appeared to reduce length of stay by 4.5 days (95% CI 2.4, 6.5). There was also some evidence that massage interventions have a slight, positive effect on postnatal complications and weight at 4 - 6 months. However, serious concerns about the methodological quality of the included studies, particularly with respect to selective reporting of outcomes, however, suggests that these results should be treated with caution.
For fathers

One systematic review of 8 interventions with fathers from birth to early infancy[85] included 2 (RCTs) evaluating the effectiveness of teaching fathers infant massage (see section on Support for Fathers).

4.5.2.5 Supporting fathers

A range of interventions are now being used to support fathers during the postnatal period. One systematic review was identified comprising eight evaluations of interventions to support fathers from birth to early infancy.[86] The rigour of the included studies was, however, variable.

Increasing parental awareness of infant sensory and perceptual capabilities
One small-scale pre- and post-intervention study involved fathers and mothers of premature infants. Both parents observed their infants behaviour in hospital while a trained interventionist administered the Assessment of Premature Infant Behaviour (APIB) and gave parents verbal feedback. Fathers in the intervention group showed decreased anxiety and more realistic perceptions than those in the control group.
Two studies (one RCT and one pre- and post-intervention study) in this review, [87] and a separate RCT in a second review[88] assessed the effect of NBAS demonstrations with fathers. Results were mixed, ranging from no effects in one trial to small to moderate effects in two further trials.

Infant massage
Two RCTs evaluated the impact of teaching infant massage to fathers. Both found effects on father-infant interaction and fathers' increased involvement in child care tasks.

Parenting programmes
Three RCTs involved fathers of toddlers aged 24 – 64 months. One intervention (aimed at fathers of children aged 4+ assessed the effect of an enhanced Head Start programme, which included father-infant play groups. Intervention fathers who participated in a higher number of sessions (21.5 + hours) showed greatest positive change in father-infant interaction, and fathers support for children's learning. Children of intervention fathers also showed improvement in some measures of cognition over control children.

A second intervention involved parent education for fathers and children; group discussions and father-child structured and unstructured playtime over 10 weeks. Fathers in the parent education / support group reported greater involvement in child care tasks, more activities with children on non-working days and higher levels of competence on measures of skill/knowledge and value/comfort.

A third parent-training programme, which included both fathers and mothers in group discussion, involved viewing and discussing videotapes of parent-child interaction with feedback from a nurse. This programme was aimed at parents who reported infant behavioural problems. Post intervention and three months later no significant changes were reported in fathers self efficacy, parenting stress, depression or father reports of child behavioural difficulty; no significant change was noted in father-child interaction although father-child interaction worsened in one control group.

Infant massage
The evidence from one review is indicative that infant massage may improve mother-infant interaction, sleep and relaxation, reduce crying, and have a beneficial impact on a number of hormones controlling stress in healthy full-term babies. Further research is needed to confirm these findings, particularly in terms of their potential impact on mother-infant interaction. Concern about methodological quality precluded the possibility of reaching any conclusions about the effectiveness of infant massage with pre-term or low birthweight babies.

Supporting fathers
A range of interventions are being used to support fathers. One review that examined the effectiveness of such interventions showed that potentially effective methods of supporting fathers include father-toddler play groups, NBAS and infant massage, and parenting groups with enhanced sessions for men.

Effectiveness was associated with programmes that involved active participation with, or observation of the infant/child, and multiple exposures to the intervention.

More research is needed to determine the appropriate dose of effective interventions, their impact over time, and the differential impact of interventions with mothers and fathers.

4.5.3 SUPPORTING EARLY PARENTING

Parenting programmes comprise brief, manualised interventions aimed at improving the capacity of parents to support their children's emotional and behavioural development. They are underpinned by a range of theoretical approaches and may be offered using a range of media (e.g. leaflets, videos etc), on a one-to-one basis or in groups.

4.5.3.1 Media-based parenting programmes

One Cochrane review[89] included 11 studies involving 943 participants who received media-based advice (leaflets; videos with or without telephone support, or parent groups) on children's behavioural problems. Most included interventions based on behavioural interventions (e.g.

those designed by Webster-Stratton, or the Triple P programme), for which there is already a strong evidence base. No difference was found between the type of media-based approaches (booklet, video, audiotape) used in these studies.

Although four studies involved children from the age of two, most (six studies) were of trials with children aged three and over. In general, media-based therapies for behavioural disorders in children had a moderate, but sometimes variable, effect when compared with no-treatment controls. Effects sizes ranged from -0.12 (-1.65, 1.41) to -32.60 (-49.93, -15.27). Further improvements were made with the addition of up to two hours of therapist time. It is important to note that while significantly more participants reliably improved after using self-directed interventions than no-treatment controls, approximately two-thirds of participants showed no reliable improvement at all.

4.5.3. 2 Primary and secondary behavioural problem prevention programmes

See section on Antenatal Parenting Programmes for interventions provided during the perinatal period e.g. PIPPIN

One Cochrane review evaluated the effectiveness of parenting programmes in the primary and secondary prevention of behaviour problems in children under the age of 3 years.[90] Three individual studies (one non-randomised controlled study and two pre- and post intervention evaluations) have also been included on expert advice.

Five RCTs were included in the Cochrane review. Data were combined using a meta-analysis for both parent-reports and independent assessments of children's behaviour. There was a non-significant result favouring the intervention group (Effect size (ES) – 0.29, CI – 0.55 to 0.02) for parent-reports, and a significant result favouring the intervention group (ES – 0.54, CI – 0.84 to – 0.23) for independent observations of children's behaviour. A meta-analysis of the limited follow-up data available showed a small non-significant result favouring the intervention group (ES – 0.24, CI – 0.56 to 0.09).

These findings provide some support for the use of group-based parenting programmes to improve the emotional and behavioural adjustment of children under the age of three years. The review found insufficient evidence to reach any firm conclusions regarding the role that such programmes might play in the primary prevention of such problems due to the fact that there are limited data available concerning the long–term effectiveness of these programmes.

A repeat-measure pre-post study of the NEWPIN programme involving 64 women in experimental or waiting-list control groups was included on expert advice.[91] NEWPIN is a community based/peer support network which matches women with parenting and relationship difficulties with experienced volunteers, and combines a range of other psychological, therapeutic and practical supports. Women in the experimental group showed significant improvements in mental health, partner relationship, child symptoms, and mother-infant interaction at bath time, with stronger effects for clients with 6 – 12 months involvement with the programme. These effects contrasted with an actual deterioration in mental state, partner relationship, bath-time parent-child interactions and child behavioural problems in the waiting list control group over the same period.

4.5.3.3 Parents of children with behavioural problems

One systematic review was identified of behavioural interventions aimed at parents of preschoolers with behavioural problems and included 20 studies (RCTs with control groups or comparative treatment groups that involve standardised assessment measures).[92] Most of these involved children in the higher age range (2 years +).

- *Parent management training* (e.g. Incredible Years) - focus on the parent as the primary agent for change. Results of two trials showed that this programme was associated with a reduction in child problem behaviours and negative parent-child interaction.

- *Parent child interaction therapy (PCIT)* - focuses on parent and child simultaneously. Seven trials reported increased compliance of oppositionally defiant children, although findings for long-term effects were mixed. Enhanced or modified parent training for parents with multiple difficulties (e.g. couple communication training for parents with marital problems) also produced unclear results.

- *Enhanced or modified parent training interventions* – involved programmes that had been adapted for parental risk factors (such as marital distress). Six trials showed significant improvements in the parent-child relationship, and several aspects of parental competence and well-being. CBT-directed play therapy and psychiatric inpatient work were not evaluated.

- *Child specific interventions* - programmes were adapted in accordance with the child risk factors rather than parental ones. One trial used a temperament-based nine week group psycho-educational programme with behavioural management principles for mothers of four-year-old preschoolers. Significant effects were found in the treatment group on measures of child behaviour, child parent relationship, feelings of competence in parenting, the impact of the difficult child on the family and maternal symptoms of depression and anxiety.

- *Videotaped modelling* – programmes directed at parents of temperamentally difficult preschoolers. One study only included. Results showed that therapist contact was a necessary component and that self-administered videotape modelling or lay group discussion did not yield positive results at 1 – 3 year follow-up. The combination of telephone instruction and videotape improved parent behaviour and problem-solving strategies, but was less effective in influencing child behaviour.

- *Telephone interventions* - one trial compared training for self-referred mothers of infants with behavioural problems. The study compared home visits, group treatment or telephone contact with a no-treatment control. All training followed the same format over eight weeks. Compared with the control group, all active interventions resulted in significant improvements in child behaviour and parent-reported compliance. Very little difference in outcome was found between the three intervention groups.

A second, small-scale trial study compared the use of telephone and self-instructional methods in a rural population, with a waiting list control. The intervention group showed

improvements in parental reports of child behaviour, discipline practices and feelings about parenting competence.

4.5.3.4 Parents with learning difficulties/developmental delay

One review assessed the effectiveness of parenting education programmes for parents with low IQ measured intelligence. 20 published studies included 190 parents (188 mothers, 2 fathers) with IQs ranging from 50 to 79.[93]

The most common instructional approach was behavioural (e.g., task analysis, modelling, feedback, reinforcement) and focused on basic child-care, safety, nutrition, problem solving, positive parent-child interactions, and child behaviour management.

The most successful interventions, which report change in parenting behaviours and improved child outcomes, involved specific skill assessment using direct observational techniques, modelling, practice, feedback and praise, and were located in the home or a home-like environment rather than clinic settings.

4.5.3.5 Mothers with drug-addiction

One systematic review of parenting interventions with drug-dependant mothers included 6 RCTs.[94] The results show that mothers in treatment in three of six programmes were more likely to have periods of abstinence from drug use compared with the control mothers. Although interventions were generally effective in influencing maternal adjustment (e.g. depression, parenting stress, potential for child abuse) with the exception of one multi-component intervention for adolescent mothers, none achieved marked or sustained improvement in mother-child interaction. Several authors noted that multiple problems faced by mothers with addiction to drugs warranted more comprehensive and practical treatment. The occurrence of co-morbid psychiatric disorders, in particular, highlights the need for psychiatric diagnostic services.

4.5.3.5 Parents with severe mental health problems

One systematic review of interventions for parents with conditions such as schizophrenia, mood disorders, severe postnatal depression or puerperal psychosis has been undertaken, but identified no studies that met the inclusion criteria.[95]

Summary - Supporting Parenting

Media-based parenting programmes
Media-based interventions can be used to support parenting as part of universal provision or as the first stage of a stepped care approach for more complex problems.

One review showed a moderate, but sometimes variable, impact of a range of media-based parenting programmes on children's behaviour (e.g. booklet, video, audiotape). The addition of brief therapist input (e.g. 2 hours) appeared to increase their effectiveness.

Primary and secondary behavioural problem prevention programmes
The evidence supports the use of group-based parenting programmes to improve the emotional and behavioural adjustment of children under the age of 3 years, but there is currently no evidence about the effectiveness of such programmes in the prevention of emotional and behavioural problems.

Further research is needed to assess the effectiveness of parenting programmes for the primary and secondary prevention of emotional and behavioural problems.

Parents of children with behaviour problems
Behavioural parent training, and enhanced training focused on child-specific factors (including personalised telephone-based interventions) can be effective with parents of preschoolers with temperamental difficulties. Interventions delivered through video-tape modelling is more effective than no treatment, but families with multiple problems are likely to require further support.

Parents with learning difficulties/developmental delay
The evidence shows that one-to-one parent-training is effective in improving the care-giving of parents with a learning disability, and should involve specific skill assessment and training using direct observational techniques and modelling in the home or home-like settings.

Further research is needed to (i) identify variables associated with the responsiveness of parents with learning disabilities to the intervention; and (ii) to develop and compare innovative programs that teach parents with learning disabilities the necessary skills to demonstrate long-term beneficial effects for their children.

Drug abusing parents
Effective methods of improving parenting in drug abusing parents have not yet been identified and parenting programmes should only be used as part of a multi-component strategy with specialist services to support drug abusing parents.

Further research is needed on relational, attachment-based, parenting programmes, and interventions that focus on the relationship between the mother and baby and/or mother and therapist, for drug dependent women and their young children.

Parents with severe mental health problems
Some long-term, multimodal parenting support programmes for parents with severe mental health problems have been developed, but not yet evaluated.[96]

There is an urgent need for research to evaluate the effectiveness of parenting programmes with parents experiencing severe mental health problems.

4.5.4 PROMOTING CHILD COGNITIVE DEVELOPMENT

A range of methods are used to promote child cognitive development and early learning including book sharing, anticipatory guidance, and intensive centre-based interventions directed at disadvantaged children.

One systematic review was identified which evaluated the effectiveness of anticipatory guidance to promote child cognitive development through book sharing and reading. One systematic review evaluated the effectiveness of community-based early childhood development programmes. A large-scale study of a group-based intervention to promote parent-child interaction, play and book sharing, undertaken in the UK is included on expert advice.

Anticipatory guidance to promote child cognitive development: One review containing three studies (two RCTs, one CCT) of early intervention in US paediatric settings found that a book distribution program for promoting early literacy was effective in increasing parent-child book-sharing activities, particularly among poor ethnic minority families. Early book sharing was associated with higher child receptive language development.[97]

Peers Early Education Partnership programme: A quasi-experimental, repeat-measure study of the PEEP programme (Group-based activities to promote parent-child interaction through play and book sharing) was included on expert advice.[98] The results showed improved child cognitive skills (including verbalisation, language use and understanding of numbers) and self-esteem at age 3-5 years.

Community based early intervention programmes. One systematic review of early childhood promotion programmes included 11 large-scale, centre-based interventions.[99] Although there were methodological flaws in many of the included studies there is evidence that early intensive centre-based intervention programmes for disadvantaged children have significant potential for altering both child and maternal functioning. Five studies of centre-based programmes found significant improvements in maternal employment and education. Two centre-based programmes, which were designed specifically for teenagers, reported a lower incidence of repeat pregnancies in the intervention groups. Four evaluations of centre-based-interventions that reported on observed mother-infant interaction showed significant differences favouring the intervention group, but one study found that these were lost at follow up. Two of four programmes reported significant differences in the quality of the home environment, although two did not. One centre-based intervention assessed maternal mental health and self-esteem and reported a trend towards internal locus of control. Two of four programmes reported positive changes in maternal knowledge and attitudes about childrearing. Immediate cognitive effects were found in 90% of children taking part in most centre-based programmes. Studies that undertook longer term evaluation of cognitive effects found that these were sustained in 67% of cases at follow-up.

Summary – Supporting Child Cognitive Development

A small number of reliable studies found that a book distribution programme was effective in increasing parent-child book-sharing activities, particularly among poor ethnic minority families, and was associated with higher child receptive language development. One small study at risk

of bias indicated that group-based sharing of songs, music and books improved child cognitive skills (including verbalisation, language use and understanding of numbers), and self-esteem at age 3-5 years.

Studies of anticipatory guidance in US paediatric settings showed that the promotion of book sharing can lead to improved bed/bath sleep routines and child cognitive development. However, this context differs significantly from the UK GP and health visitor clinics in a number of respects. Further research is needed in UK primary care settings.

There was evidence from one review that early intensive centre-based intervention programmes for disadvantaged children can improve a range out outcomes including mother-infant interaction; home environment; child cognitive function; maternal employment and education; incidence of repeat pregnancies for teenage mums; and maternal knowledge and attitudes about child-rearing.

4.5.5 PREVENTING/ADDRESSING EARLY INFANT/TODDLER PROBLEMS

4.5.5.1 Anticipatory Guidance

The review of anticipatory guidance introduced in section 4.5.3.5 (above), included 10 trials of interventions aimed at preventing common problems. [100]

- *Temperament-based anticipatory guidance* (counselling and materials in a healthcare setting) involved discussion by physicians, about the child's temperament in order to increase parents' understanding of the child's individuality and promote better parent-child interaction. Two studies (one large-scale RCT, one CSS) examined the clinical use of temperament assessments in paediatric primary care. One large scale RCT involved tailoring anticipatory guidance materials to meet the needs of individual families. Expected temperament profiles were developed for six clinical issues occurring between the ages of five and twelve months. Parents completed temperament questionnaires when infants were 4 months old. A computer programme selected two clinical issues per month for the temperament profile that most closely resembled the study infant. Temperament measured at four months demonstrated significant predictability and 70% of the sample found anticipatory guidance helpful.

  In a second, large-scale RCT of the same procedure, parents were assessed over a two year period following the birth of healthy newborns. The intervention was of particular value to parents of challenging ("high-energy") infants. One study involved participants from a large health maintenance organisation, suggesting the feasibility of routine temperament-based anticipatory guidance in the child's first year. [101]

- *Anticipatory guidance to promote healthy sleep:* Three studies (two RCTs, one CCT) found that anticipatory guidance and written instructions were effective in promoting better infant sleep patterns, reducing stress and increasing parents' confidence during the first two months of life. A further five studies (four RCTs, one CCT) assessed the effect of anticipatory guidance in reducing night waking in infancy. Efficacy was demonstrated for different behavioural approaches to mild sleep problems, but behavioural modification

techniques were not always effective for children with severe sleep problems. The effectiveness of using written information in the management of night waking is also uncertain, with two studies showing different outcomes.[102]

- *Anticipatory guidance to reduce TV viewing/promote 'time out':* One large-scale RCT of anticipatory guidance to reduce TV viewing and promote 'time out' as an alternative to physical punishment (risk factors associated with violent behaviour in later childhood) was found to be effective in promoting use of 'time out' but did not affect TV viewing.[103]

4.5.5.2 Enhancing maternal sensitivity and/or infant attachment

Two systematic reviews encompassed studies that aimed at enhancing maternal sensitivity and/or infant attachment.

One review contained 81 studies, involving 7,636 families and 88 outcomes.[104] Interventions were coded according to their focus: interventions that aimed to enhance sensitivity; sensitivity and maternal representations; social support; or any combination of the three. For example, video-feedback was used to enhance parental sensitivity; parent-infant psychotherapy was used to transform maternal representations; and interventions focused on support involved experienced mothers befriending and offering practical help to highly anxious mothers. Several interventions combined different strategies.

- *Interventions to increase maternal sensitivity*

Findings reporting on a core set of 51 randomised studies, showed a moderate but significant effect of attachment-based interventions on maternal sensitivity.

Interventions with a clear behavioural orientation and focused on enhancing maternal sensitivity were found to be more effective in increasing sensitivity and infant attachment than those with other orientations (i.e. that focused on support and/or changing maternal representations). It is suggested that although infant attachment is slower to respond to intervention, there may be a 'sleeper' effect involved in the use of sensitivity-focused interventions.

Short-term interventions (with fewer than five sessions) were found to be as effective as those with 5 – 16 sessions and more effective than interventions of more than 16 sessions.

The effect of interventions conducted at home was not significantly different from those conducted elsewhere (e.g. community mental heath centres).

Four studies that did not rely on personal contact with the client, but on the provision of infant carriers, kangaroo care, and a workbook on responsiveness to a videotape showed the largest effect size.

Although only three studies involved fathers as well as mothers, these were significantly more effective than those involving mothers only.

- *Interventions to promote infant attachment*

29 intervention studies used infant attachment security as the primary outcome but a core of 23 randomised intervention studies, found that interventions aimed at enhancing maternal/parental sensitivity (without focusing on support and representation) were the only ones to show significant effect sizes. As with interventions to increase maternal sensitivity, interventions focused on increasing infant attachment security were most effective if they had fewer than five sessions, started after the age of 6 months, and did *not* use video feedback.

Meta analysis of 15 randomised studies of families with multiple problems showed that the effect size was comparable to that for families with fewer problems. Interventions aimed at sensitivity were most effective in improving infant attachment, and results once again favoured a reduced number of sessions, commencement postnatally, and behaviourally focused treatments.

A second review, which had a wider focus but also included 17 studies on promotion of maternal sensitivity/infant attachment, also concluded that effective interventions were brief, behaviourally-oriented and focused on enhancing maternal sensitivity.[105]

4.5.5.3 Interaction Guidance

Three studies (RCTs) were identified from a high quality systematic review.[106]
One RCT (2 papers) compared three groups who received (i) Video-feedback Intervention to promote Positive Parenting and Sensitive Discipline (VIPP) and brochures (VIPP-SD), (ii) video-feedback, brochures and discussion groups and; (iii) no-treatment controls. The results showed significant changes for both intervention groups in infant symptoms, mother-infant interactions, maternal intrusive behaviour and maternal representations.[107] Maternal sensitivity post-test in both groups was significantly higher than in the control group and the effectiveness of the two interventions did not differ. No significant effect was found for infant attachment.

One RCT evaluated the effectiveness of a video-feedback intervention in promoting positive parenting and sensitive discipline. VIPP-SD involved families with infants with externalising disorders. Significant improvements were found in maternal sensitivity and sensitive discipline, and a decrease in child overactive behaviours.[108]

One RCT (75 mothers with behaviourally disturbed infants) compared brief (maximum 10 sessions) psychodynamic therapy with interaction guidance. No major difference in outcome was found between the two forms of intervention. Results indicated a significant symptom reduction; dyadic interactions became more harmonious (mothers became less intrusive and infants more cooperative). Maternal self-esteem grew significantly and negative affect decreased.[109]

4.5.5.4 Parent-infant psychotherapy

One systematic review was identified comprising 20 studies (18 primary studies and two systematic reviews) evaluating the effectiveness of attachment-based interventions designed to promote mother-infant attachment.[110] This review included four trials of dyadic psychotherapy and three of videofeedback, outlined below. [111]

One study (RCT) compared Infant-Parent Psychotherapy (IPP), and a psycho-educational parenting intervention (PPI) to two control groups (community standard care and a normative, nonmaltreating comparison group). The results showed significant differences favouring the intervention groups compared to community standard care. Both psycho-education and parent infant psychotherapy were found to be effective in improving mother-infant interaction.[112]

One RCT (63 mothers) evaluated the effect of toddler-parent psychotherapy (TPP) as a preventive intervention for promoting secure attachment in the offspring of depressed mothers. The results showed that the infants in the intervention group attained rates of secure attachment that were comparable with those of youngsters in the non-depressed control group.[113]

One non-randomised, controlled multi-site trial of the Florida Infant Mental Health programme involved mothers of infants at reported risk for abuse and neglect.[114] The effects of an intervention combining mother-infant psychotherapy, psychoeducation and developmental guidance were assessed. The programme was designed to last a minimum of 25 weeks, with follow-on support where necessary. At three years, effects were found in the treatment group on measures of maternal sensitivity, responsiveness and reciprocity. However, difficulties in engaging and motivating this population are indicated by high rates of attrition: only 57 of 129 participating dyads completed treatment.[115]

One RCT with incomplete randomisation of 67 clinically referred mothers and infants aged 10 – 30 months) compared infant-led psychotherapy (Watch, Wait, and Wonder, WWW) with mother-infant psychotherapy (PPT).[116] A broad range of measures were used including qualities of the mother-infant relationship, maternal perception of parenting stress, parenting competence and satisfaction, depression, and infant cognition, and emotion regulation. Both WWW and PPT were successful in reducing infant presenting problems, decreasing parenting stress, and reducing maternal intrusiveness and mother-infant conflict. Some potential reasons for the differential treatment effects and the theoretical, clinical, and methodological implications from the findings are discussed. The WWW group showed a greater shift toward a more organised or secure attachment relationship and a greater improvement in cognitive development and emotion regulation than infants in the PPT group. Mothers in the WWW group reported a larger increase in parenting satisfaction and competence and decrease in depression compared to mothers receiving PPT.

One RCT (2 papers) evaluated the effectiveness of parent-child psychotherapy with children aged 3 – 5 years who were exposed to marital violence.[117] Seventy-five multiethnic preschool-age child-mother dyads from diverse socioeconomic backgrounds were randomly assigned to (1) dyadic psychotherapy or (2) case management plus community referral for individual treatment. Children were 3 to 5 years old. Follow-up at 6-months found enduring effects on children's behaviour problems and mothers' general distress.

Summary – Preventing/Addressing Early Infant Problems

Anticipatory guidance
The evidence suggests that anticipatory guidance and written instructions can be effective in promoting better infant sleep patterns, reducing stress, and increasing parents' confidence during the first two months of life, although further studies showed that behavioural modification techniques were not always effective for children with severe sleep problems. They can also increase the use of time-out as an alternative to physical punishment,

Temperament-based anticipatory guidance (involving physicians in discussions about the child's temperament as a way of imparting an understanding about a child's individuality to the parent and promoting better interaction between them), appears to be highly acceptable to parents but there is limited evidence concerning its role in improving outcomes.
Further research is needed about the effectiveness of anticipatory guidance in UK settings, and on its potential role in preventing mental health problems in children.

Interventions to enhance maternal sensitivity
Interventions to promote maternal sensitivity and infant attachment are diverse and range from parent-infant psychotherapy to home visiting programmes. One review showed that interventions with a clear behavioural orientation and that focused on enhancing maternal sensitivity were more effective in increasing sensitivity and infant attachment than those with other orientations (i.e. that focused on support and/or changing maternal representations). It is suggested that although infant attachment is slower to respond to interventions focused on changing maternal sensitivity, there may be a 'sleeper' effect involved in the use of sensitivity-focused interventions.

This review also suggests that short-term interventions (with fewer than five sessions) are as effective as those with 5 – 16 sessions and more effective than interventions of more than 16 sessions.

Interaction Guidance
Interaction guidance involves a professional videotaping up to ten minutes of interaction between carer and baby, and then returning subsequently to examine the tape with the parent, and using the videotape to point out examples of positive parent-infant interaction. A number of studies showed that this method can be effective in improving infant symptoms, mother-infant interaction, reducing maternal sensitivity and improving maternal representations. There is no evidence about its effectiveness in improving attachment.

Parent-infant psychotherapy
Parent-infant psychotherapy involves specialists (parent-infant psychotherapists) working with both mother and baby using psychotherapeutic methods to a range of problems including faltering growth, attachment difficulties and abusive parenting, by focusing on the relationship between the parent and infant and mothers representations and parenting practices. The results of four rigorous studies showed that parent-infant psychotherapy can be effective reducing infant-presenting problems, decreasing parenting stress, and reducing maternal intrusiveness and mother-infant conflict. The results of one study also showed improvements in maternal

sensitivity, responsiveness and reciprocity, and another showed improvements in infant attachment. Further research is needed.

4.5.6 PROMOTING THE MENTAL HEALTH OF CHILDREN AND FAMILIES

4.5.6.1 Identification, prevention and treatment of postnatal depression

The most comprehensive review addressing the identification and treatment of postnatal depression is contained within NICE guidelines. Three further systematic reviews were also identified.

Identification of postnatal depression: See section 4.4.3.1 (Identification of antenatal depression) above.

Prevention of depression: 16 studies (RCTs) of interventions aimed at preventing the development of mental disorders in populations with specific risk factors in both the antenatal and postnatal period were identified in the NICE review.[118] Risk factors included childhood abuse and relationship difficulties or factors related to delivery. Providing treatments for women with risk factors for depression particularly existing sub- threshold symptoms was found to have some benefit. No evidence was found for any intervention that aimed at preventing depression in low-risk populations.

Sixteen studies evaluated the effect of psychosocial interventions such as group psychoeducation designed to prevent the onset of mental health disorders among women at low risk. Treatments aimed at preventing depression in the postnatal period that are not directly targeted at populations at high risk were not found to have any effect on future depression.

Treatment: 15 studies of treatment of depression in the postnatal period were included in the NICE review. Eight compared standard care or waiting-list control with psychodynamic psychotherapy, non-directive counselling and social support. Treatments with at least moderate quality evidence, that showed an effect, included cognitive behavioural therapy (CBT), interpersonal psychotherapy (IPT), psychodynamic psychotherapy and non-directive counselling. Very little evidence was found of differential effectiveness.

Four studies included in the NICE review compared psychosocial and psychological interventions with other treatments. IPT was found to be more effective than psychoeducation; six sessions of counselling more effective than one session; group exercise was more effective than social support alone; psychoeducation with women's partners more effective than psychoeducation with women alone; and individual counselling more effective than group counselling.

Three studies compared physical non-psychological treatment (infant massage, exercise, acupuncture). The evidence is not of high quality, but one study supports the view that exercise may be of some benefit for depression. No evidence was found to support the use of infant massage or acupuncture to treat postnatal depression.

There is some evidence (from six RCTs included in NICE review on postnatal mental health) that dyadic interventions which involve depressed mothers, and which are designed to improve mother-infant interactions, can alleviate or prevent depressive symptoms even if the intervention was not designed specifically to target this.[119]

Two further systematic reviews also assessed the effectiveness of interventions to treat postnatal depression and reached consistent findings.[120] A Cochrane review, which comprised nine trials and reported outcomes for 956 women found that any psychosocial or psychological intervention, compared to usual postpartum care, was associated with a reduction in the likelihood of continued depression, at the final assessment within the first year postpartum. Trials selecting participants based on a clinical diagnosis of depression were just as effective in decreasing depressive symptomatology as those that enrolled women who met inclusion criteria based on self-reported depressive symptomatology.

The third systematic review searched for parenting interventions for women with mental health problems (e.g. schizophrenia, mood disorders, postnatal depression, psychosis) who have young children, but identified only programme descriptions.[121]

4.5.6.2 Targeting and focusing services

One systematic review was identified of interventions to enhance the mental health of children and families and included interventions underpinned by the following theoretical models: i) enhancing bonding, ii) highlighting infant skills; iii) psychodynamic psychotherapies; iv) attachment based work; v) developmental guidance; vi) interactional guidance; vii) transactional interventions; viii) infant led psychotherapy; ix) community based supports; x) community development aimed at reducing ecological risk factors xi) parent training.

The following recommendations are made:

i. Target high risk communities, rather than specific families. If targeting parents, selection of first time parents should be a priority where resources are limited.

ii. The reduction of attrition can be accomplished through offering incentives (e.g. meals or free transport) and by using outreach to understand local issues and circumstances, including barriers to participation.

iii. No single approach to mental health promotion is effective with all populations. For example, brief interventions such as NBAS are effective with both high and low risk families. However, impact may be brief with high-risk families unless they are offered additional, ongoing support. Longer term, more intensive psychodynamic therapies are less effective with young high-risk mothers but are effective with families at lower risk. Interventions should respond to the circumstances of individual families.

iv. A range of services is needed to work with children, parents and parent child pairs or family groups. Interventions that span at least two generations (providing services for parents and for children) are recommended in high-risk populations.

v. High-risk families will benefit from trained paraprofessionals and professionals working together.

vi. Pre- and post-natal interventions are both effective with weekly contact continuing for the first year. Important work attending to primary engagement factors before the child's birth is likely to enhance involvement postnatally. Offering a small number of high intensity services to a family is likely to be more effective than a large number of low intensity components.

Summary – Promoting mental health of children and families

Prevention of postnatal depression:
There are currently no effective interventions to prevent postnatal depression in low risk populations.

Identification of postnatal depression:
The use of simple questions to identify women with postnatal depression appear to have similarly low predictive validity to screening tools such as the EPDS, but appear to be more acceptable to women.

Treatment of postnatal depression:
Inter-personal psychotherapy, cognitive behavioural therapy or listening visits in the home are effective for women who have developed symptoms of depression. One-to-one therapy appears to be more effective than group work. Treatments should be combined with patient education about the illness, the treatment selected, and other mechanisms for promoting health such as social support and a healthy lifestyle.

Women requiring psychological treatment should be seen for treatment normally within 1 month of initial assessment, and no longer than 3 months afterwards.

Social support (individual, including home visiting, or group-based interventions) is recommended for women who have subthreshold symptoms and who have not had a previous episode of depression or anxiety.

Dyadic treatment is recommended to improve parent-child interaction in women experiencing depression in the postnatal period.

Targeting and focusing services:
Targeting should focus on high risk communities, rather than specific families. The reduction of attrition can be accomplished through offering incentives (e.g. meals or free transport) and by using outreach to understand local issues and circumstances, including barriers to participation. No single approach to mental health promotion is effective with all populations. A range of services is needed to work with children, parents and parent child pairs or family groups. High-risk families will benefit from trained paraprofessionals and professionals working together. Pre- and post-natal interventions are effective with weekly contact continuing for the first year. Offering a small number of high intensity services to a family is likely to be more effective than a large number of low intensity components.

4.5.7 PREVENTING AND TREATING OBESITY IN YOUNG CHILDREN

4.5.7.1 Infant feeding

The evidence relating to the impact of infant feeding on later obesity is inconclusive. A recent review showed no effect of infant feeding, but only three included studies examined energy intake in infancy (as opposed to breast vs. formula feeding and age at introduction of solids), and follow-up to adulthood was rare with none of the three studies measuring adiposity after 6 years of age.[122]

4.5.7.2 Preventing and treating obesity in infants and young children

Two systematic reviews of interventions targeted at parents of overweight children under the age of 5, or at overweight young children alone, were identified.

The first systematic review of interventions to prevent or treat obesity in preschool children identified seven studies which assessed changes in weight status or body fat. [123] These interventions involved a range of designs and were underpinned by a variety of theoretical frameworks.

- *Preschool exercise:* One RCT involved a preschool exercise programme for children in the older age range. Some changes in BMI were reported for girls, but not for boys.

- *Parenting support alone:* One RCT reported on a parenting support programme. Borderline significant changes were reported at 16 weeks.

- *Preschool training of children alone:* One RCT reported on a 39 week programme involving children alone, in preschool and day school facilities, aimed at reducing TV viewing and promoting healthy eating. No statistically significant effects were found in intervention groups.

- *Preschool/community based parent and child behavioural training programmes:* One RCT reported on a dietary and physical activity, pre-school based diet and exercise programme, which involved parents and children enrolled in a Head Start centre. Parents received training on promoting children's physical activity and reducing sedentary activities. At 1 and 2 year assessments, BMI scores for the intervention group showed a statistically greater reduction than controls.

- One cohort study evaluated the adaptation of a programme designed for adolescents, for preschool children. This involved a combination of calorie reduction with increased exercise. The programme involved pre-intervention training of mothers. Significant decreases in weight for height were reported at 6-, 12- and 24-months follow-up, with no compromise in growth.

- One controlled trial contrasted reduction in fat content of school meals alone, with and without adjunctive child/family nutrition/safety training. Differential effects were found among ethnic groups, with a statistically significant difference in the change of with

weight to height ratio of white intervention children, but not among Black or Hispanic children.

- *Primary healthcare based parent and child behavioural training programmes:* A further cohort study (in Singapore) involved a 1 year programme developed for a primary health care setting in response to increasing obesity. The programme involved counselling overweight children and families (at baseline, 1, 4 and 7 months) on diet and behavioural change. Statistically significant reductions in all categories of obesity were found at the end of 1 year follow-up.

A second systematic review of 9 studies involved obesity reduction interventions for low SES preschool children under the age of 5.[124] All Interventions were high intensity (repeated contacts) and underpinned by behavioural theory.[125] These point to the potential of early intervention that involves training parents to use behavioural reinforcements to regulate children's diet and exercise, the small number of studies (and diversity of ethnic groups involved) limits interpretation.

- *Group based interventions in child-welfare based setting (Special Supplementary Programme for Women, Infants and Children, WIC):* One pre- and post test study involved mothers of infants in WIC special nutritional clinics. It involved 6 educational groups and 2 individual contacts to promote physical activity, limit sedentary behaviours, promote active play and improve diet. Intervention group mothers were significantly more likely to report active child play and reduction of child's consumption of sweetened drinks. No effect on other intended behavioural changes, including TV viewing, consumption of fruit and vegetables or monitoring mealtime behaviour.

- *Primary care interventions:* 1 prospective RCT (2 studies) in a primary care setting (in Finland) aimed at reducing fat intake involved parents' (and later children's) meeting with a nutritionist at 1 – 3 month intervals for individualised dietary counselling from child age 8 months until the child was 2 years old, and then biannually until child reached age 10. The intervention had significant effect on the reduction of children's saturated fat and cholesterol intake and maintenance of recommended dietary intake of other nutrients (although desired ratio of fats was not achieved. Early changes (to 4 years of age) persisted between 4 and 10 years of age.

- *Preschool/childcare based settings:* One RCT compared the effect of intensive vs. non-intensive intervention targeted at parents of children in a preschool childcare setting and aimed at decreasing children's TV viewing and improving diet and exercise. The intervention group received an intensive, 7 session interactive education programme (20 mins/week over 8 weeks) while the control group's education programme received the same intervention over an 8 month period. The intervention was effective in reducing TV viewing but did not impact significantly on children's diet or exercise. However, the sample was small and the intervention was part of a broader health promotion programme, which may have affected results. A second RCT involved parents of children aged 3 – 5 who were enrolled in a Head Start programme. The intervention involved 3 x 40 minute sessions a week for 14 weeks (20 min education and 20 min aerobic exercise, and appeared to help reduce of body mass index (BMI) but did not impact significantly on diet and physical activity.

- *Mixed-setting interventions:* One RCT involved families of infants (mean age 19.3 months) enrolled in Head Start programmes taking part in nutrition lessons, which included sessions on adult modelling of eating behaviours. The intervention involved 18 individually structured training activities, as well as training on cognitive and affective reinforcements to promote the toddler's self-regulation. The results of this trial are unclear because parents' increased knowledge did not necessarily result in changes in targeted behaviour.

4.5.7.3 Promotion of healthy eating

One review included 2 studies (1 of which had taken place in the UK) aimed at the parents of preschool children aged 1 – 5[126]

- *Advice on diet and mealtime planning* for mothers of 1 – 4 year olds in the UK, delivered in the home by health visitors and general practitioners, delivered in the home and in GP surgeries (9 hours over a 4 – 5 month period). A pre- and post-intervention study found improvements in maternal reports of children's diets, mothers' organisation of meal planning, eating as a family and provision of regular meals, and slight improvements in maternal self-esteem.

- *Group based interventions in child-welfare based settings:* 1 non-randomised trial involved mothers of children involved in Head Start in two US cities. One group was primarily Hispanic-American. The intervention comprised 2-hour nutrition education workshops (with incentives for attendance) and provision of weekly newsletters. Results indicate an improvement in diet quality and diversity in one group, and reduction in salt and sugar consumption in a second group. Differences between groups raise questions about the effect of demographic differences (ethnicity and level of education) on compliance and outcomes.

4.5.7.4 Growth Monitoring

i) Infant weight and growth monitoring

No systematic reviews of weight and growth monitoring of infants and preschool children were identified.[127]

ii) Faltering growth

The term faltering growth (or failure to thrive) is applied to infants/children whose current weight or rate of weight gain is significantly below that of other children of similar age, sex and ethnicity. Parents and infants should be referred to specialist treatment which simultaneously aims at enabling infant feeding and weight gain while treating the underlying causes of the infants' condition.[128]

iii) Weight and growth monitoring (children aged 2+)

Body Mass Index (BMI) has been adopted as a proxy measure for obesity within the UK.[129] (BMI) (adjusted for age and gender) is recommended as a practical estimate of overweight in children over the age of 2, but needs to be interpreted with caution because it is not a direct measure of adiposity.

The following recommendations on weight and growth monitoring are based on NICE guidelines for postnatal care.[130]

Routine growth monitoring, including height (length) and weight measurements are standard components of postnatal and infant health surveillance. While weighing can enable identification of certain rare but potentially dangerous conditions (including forms of jaundice) it may cause harm because of: unwarranted intervention caused by errors in measurement (e.g. not taking urination or defecation into account), associated anxiety with parents, and the potential to interfere with exclusive breastfeeding.

The NICE review recommends the following policies for normal newborns:

1. The separation of a mother and her baby within the first hour of the birth for routine postnatal procedures, for example, weighing, measuring and bathing, *should be avoided* unless these measurements are requested by the mother, or if it is necessary for the immediate care of the baby.
2. Birth weight should be recorded as it relates to gestational age.
3. Babies should be weighed (nude) at immunisation and surveillance contacts. Routine attendance at the GP surgery at ages 2, 3, 4, 8 and 12 months (standard immunisation and surveillance contacts) provides an opportune time to weigh a child if this is indicated and if there is any concern for the infant's health. Normally growing babies should not be weighed more than once per fortnight under the age of six months and no more than monthly thereafter, in order to avoid parental anxiety. There Is no evidence that regular weighing of a thriving baby brings added benefit.
4. Routine recording of length is not justified in the first two years of life.
5. Further research is needed on the generalisability of standard growth charts (e.g. Cole, Paul & Whitehead 2002; and WHO (http://www.who.int/childgrowth/en/index.html), and on the effect of weighing on identification of risk factors, parents anxiety levels, and interruption of breastfeeding.[131]

Summary – Preventing/treating obesity in young children

Infant feeding
The evidence in relation to breast-feeding and later obesity is inconclusive.

Preventing/Treating Obesity
There is currently limited evidence about the effectiveness of obesity prevention and reduction interventions for infants and children aged 0-3 years.
The small number of studies of interventions with preschool children, which primarily involve low SES US children at the higher age range (2.5 years+) shows that multicomponent programmes

can be successful in helping parents to help their children to reduce weight. This suggests that parents are receptive to, and capable of, behavioural changes that may promote healthy weight in their young children.

There is an urgent need to identify effective interventions to prevent and treat obesity in children aged 0 – 3 + years.

Promotion of healthy eating
Interventions include traditional, video or computer-based teaching methods, behaviour modification techniques, one-to-one counselling and nutrition education workshops. Most studies showed some positive effect on nutrition knowledge but impact on eating behaviour was less frequently assessed and outcomes were mixed. There are currently no long term studies evaluating the effectiveness of these interventions on knowledge or behaviour.

Weight/Growth Monitoring
NICE recommends that routine growth monitoring, including height (length) and weight measurements are standard components of postnatal and infant health surveillance. While weighing can enable identification of certain rare but potentially dangerous conditions (including forms of jaundice) it may cause harm because of: unwarranted intervention caused by errors in measurement (e.g. not taking urination or defecation into account), associated anxiety with parents, and the potential to interfere with exclusive breastfeeding.

4.5.8 SMOKING CESSATION

One systematic review included studies in the postnatal period. [132]

Client-centred counselling
Customised behavioural interventions geared at helping women understand why they smoke and their motivation to do so have been effective in reducing smoking. The development of individual smoking cessation plans based on patient beliefs is associated with higher rates of smoking cessation than the provision of information alone. Effective treatment options include motivational interviewing.[133]

Behavioural interventions focused on parental self-efficacy
The post-natal smoking cessation intervention with the strongest demonstrable effect, developed by Strecher and Greenberg, is client-centred and grounded in the concept of self-efficacy (belief in one's ability to achieve behavioural change). It is focused on helping parents believe they can take action to protect children from cigarette smoke rather than smoking cessation. One study involved four nurse home visits to work with parents to arrange smoke free environments for their children rather than smoking cessation. 4 home visits of about 45 minutes took place during the child's first six months. The intervention has been associated with significant decreases in children's tobacco exposure. However, increasing evidence on the risks of environmental smoke point to the need to motivate parents to cease smoking rather than achieve a partial reduction.

Clinic-based provision of information on smoking risks
The provision of information on the dangers of smoking, including paediatricians reports to mothers about children's cotinine levels, have not shown any significant effect.

4.5.9 SUPPORTING FAMILIES AT RISK

4.5.9.1 Domestic abuse
See section one and sections on Parent-infant relationship problems - Psychotherapy and Video-feedback, above.

4.5.9.2 Alcohol dependency
See Section One.

4.5.9.3 Drug abuse
See Section One and section on 'Supporting Early Parenting – mothers with drug-addiction.

4.5.9.4 Home visiting
See Section One.

4.5.9.4 Teenage parents

Multimodal interventions/enhanced home visiting for adolescent mothers
Three systematic reviews were identified.

One review evaluated the effectiveness of multimodal interventions (including home visiting, peer education, parenting groups, and practical guidance) on teenage mothers' parenting, return to education and other aspects of the life course.[134] Multimodal parenting support programmes for adolescent mothers included group work, home visiting and treatment in primary health care settings, combined with a variety of practical adjunctive supports. However, weaknesses in the design of included studies, and in particular, high rates of attrition (particularly among control groups) limit the reliability of findings.

The review found some effects on increased social support (access to child care services) in a programme specifically designed to enhance coping skills. Support education aimed at enhancing contraceptive knowledge and sexual behaviour appeared to be beneficial for participants who stayed the course. One peer-mentored programme with a specific focus on increasing contraceptive knowledge and behaviours produced positive changes in attitudes towards sexual behaviour among programme 'completers' who attended the greatest number of sessions. The authors speculated that teenagers who dropped out of treatment were likely to have different characteristics from those who remained, although these differences were not made explicit. Authors of the review note elsewhere that young mothers under the age of 16, or adolescents with depression, do not necessarily respond well to programmes that serve older adolescents or those who are not depressed. Interventions grounded in self-efficacy theory and delivered by a combination of professionals and peer mentors, combined with access to child care and other adjunctive services were also associated with increased levels of school graduation and employability, but were most effective with participants who had higher initial education or skills.[135]

A second review of interventions aimed at increasing maternal/infant attachment, found mixed evidence for the effect of parenting programmes delivered through a combination of home visits and adjunctive support for adolescent mothers.[136] Again, high rates of attrition, inversely associated with parents SES, were a significant problem in one large scale intervention that reported no effects on outcomes measured.[137] One RCT compared home visiting for multi-problem adolescent mothers/families with usual care, and found no effect on attachment, but improved scores on the HOME inventory, which are related to optimal development in children, particularly mother-infant attachment.[138] However, no significant effects were found at 18-month follow-up. In one study, a single, intensive home visit that focused exclusively on mother-infant interaction was found to have a positive impact on the quality of the mother-child relationship but had no effect on 25% of participating mothers.[139] Studies that reported significant effects included (i) an intervention that aimed at promoting better parent-infant interaction by helping adolescent mothers interpret infants' behaviour and cues; (ii) the UCLA Family Development project (a home visiting programme that involved high-risk mothers); and (iii) nurse home visiting compared with paraprofessional support.

A third review focused on 'Teen-Tot' initiatives in the US, comprising clinic-based programmes offering a 'one stop shop' range of services in a single setting alongside treatment, advice and liaison with social and community supports.[140] Only four studies were included, and all reported decreased repeat pregnancy rates. Outcomes for school attendance varied. Reported infant health outcomes were favourable, with increased rates of clinic attendance, immunisation and height for weight. None of the studies evaluated their effect on parenting practices. A composite score for 10 outcomes showed significantly better outcomes for participants than for controls, and that effects were cumulative: mothers with better scores at 12 months also had a low score at 26 months postpartum. However, the results may be biased due to high attrition rates (i.e. more motivated participants continued with the programme).

Recent reports on the Illinois Doula model (included on expert advice) which includes home visiting, shows potential to increase the sensitivity of adolescent mothers at high risk, including those in recovery from drug dependence towards infants after birth[141] (see section on Drug Dependence, above, for further details). However, this needs to be rigorously tested for its relevance and effectiveness in the UK.

Summary – Supporting at risk families

Teenage parents

The evidence suggests that multimodal support/education interventions are effective as a means of supporting young mothers. They should begin before or soon after birth, provide demonstrations with real infants, have frequent home visits (e.g. visits 2 – 3 times a month) with hands-on parental education, using video therapy and group discussions, and continue for at least one year.

Such interventions should, as far as is possible, be tailored to meet the needs of individual young parents in terms of their developmental stage, coping strategies and exposure to stressful situations.

5. DISCUSSION

5.1 SCOPE OF THE REVIEW AND LIMITATIONS

This review of the available evidence has been limited to interventions that were health led' in the sense that they were all potentially deliverable by healthcare practitioners, and were aimed i) at supporting parenting and thereby parents, to undertake the task of parenting; and ii) were focused on the parents of children up to five years of age. We have, as such, included interventions that were directed at improving outcomes for parents (in addition to parenting), such as interventions to improve maternal psychological problems, or address domestic abuse and drug/alcohol abuse, because the evidence shows that children of such parents have much poorer outcomes. Smoking, obesity and growth monitoring were also included because they are a high public health and policy priority. The focus on 'health led' interventions reflected the fact that we were searching for evidence that would underpin the Child Health Promotion Programme, which is in essence delivered by health care practitioners. However, some of the interventions and services that have been highlighted could also be provided by a range of early years practitioners who have been appropriately trained and supported. For example, increasing a parent's awareness of the sensory and perceptual capabilities of their baby, could be undertaken within nursery type settings. Similarly, while some of the evidence reviewed interventions that were delivered in specialist centres (e.g. anticipatory guidance that was delivered by paediatricians in paediatric clinics), many of these could also be delivered in primary care settings by appropriately trained practitioners.

This review was conducted in a shorter timescale than normally required for a full systematic review in order to ensure the findings were available to inform the implementation of the CHPP. Experts have been consulted to identify key references not identified by the search strategy and to comment on the critical appraisal and interpretation of findings in order to minimise the risk that the studies included do not adequately reflect the evidence base.

Overall, while this has identified a large a number of relevant reviews, there is a paucity of *high-quality rigorous* evidence for this particular age group. Many of the reviews included non-controlled studies, or failed to provide quantitative data with details regarding the accuracy of the results (e.g. significance levels or confidence intervals). There was also a lack of follow-up evaluation making it difficult to know whether changes that had been identified were sustained in the longer-term, and the majority of reviews did not address the harms or costs of the interventions evaluated.

While we identified several promising British interventions, most had not been tested using rigorous research methodology (e.g. RCT), and there is an urgent need for funders to begin to invest in research to evaluate the effectiveness of support for parenting during the perinatal period. It is important to test and develop interventions within the UK because the context for service delivery is changing rapidly, largely as a result of increasing demographic mobility and cultural diversity, and also because the service context is not comparable to that of the USA, where much of the research has been conducted.

It has been observed that:

> *'…a significant proportion of some of the most difficult and costly problems faced by young children and parents today, are a direct consequence of adverse maternal health related behaviours during pregnancy, dysfunctional infant care-giving, and stressful environmental conditions [our emphasis] that interfere with parental and family functioning' (Olds, 1993).*

The success of many of the interventions that have been discussed in this document will depend on a range of stressful environmental conditions that make the task of parenting more difficult including poverty, poor housing, the absence of safe space for children's play and recreation, unemployment and a range of other sources of community and environmental stress. A truly 'ecological' approach[142] that is underpinned by a clear commitment to tackle poverty and other hardships (which have been clearly demonstrated to impact both on parenting and child health[143]) is necessary to ensure that all children have the opportunity to realise their potential. As Pithouse (2007: 17) has observed, 'prevention' does not simply involve focusing on children's outcomes, but on promoting and enabling family and community well-being as well, because the reduction of risk clusters is necessary to reduce the likelihood of future problems.[144]

The following conclusions are based not only on the evidence that has been summarised by this review, but on the broader evidence base including the conclusions of existing reviews of reviews,[1] and on other publications including NICE guidelines.

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1 Some of the text in this section has been adapted from the following publication Tennant R, Barlow J, Goens C, Stewart-Brown S (2007). A systematic review of interventions to promote mental health and prevent mental illness in children and young people. University of Warwick.

5.2 WHICH PROGRAMMES, SERVICES AND INTERVENTIONS THAT REQUIRE HEALTH LEADERSHIP OR DELIVERY WOULD BRING GREATEST BENEFIT FOR CHILDREN AND FAMILIES WITH DIFFERENT LEVELS OF NEED?

This review has summarised evidence regarding interventions aimed at supporting early parenting. What is clear from the findings is that no single approach has all the answers, and a range of services is needed to work with parents, their babies, and the family.

Effective interventions come in many shapes and sizes, but a number of factors appear to be important in terms of the capacity of programmes to bring about benefit for children and families during the pregnancy and postnatal period:

Defined focus on the parent-infant relationship
There is a clear consensus that the *focus* of support that is provided to both mothers and fathers during the perinatal period should be the *parent-infant relationship.* Even during pregnancy health care professionals should have as a central focus of their care, the parents' feelings about the pregnancy, and the developing baby. During the postnatal period, health care professionals should again focus their attention on the *relationship between the parent and infant.* For example, there is a range of *dyadic* methods of treating postnatal depression now available including infant massage, video feedback, and parent-infant psychotherapy (for more severe problems), which have a greater potential in terms of the wellbeing of the infant, than therapies such as listening visits that focus on the parent in isolation.

Clarity around who programmes are for, with appropriate targeting
In terms of whether a programme is successful it is important that it is being targeted at the right population and a clear recruitment strategy that takes account of the specific needs of the target population is used.

Work with fathers is under-reported but shows promising results. The findings suggest that support for fathers should not be treated as an 'add on', and that there is a need to target interventions at both parents, focusing on the father-infant relationship in addition to the mother-infant relationship; to identify strategies that are particularly helpful in meeting the specific needs of fathers; and to focus on their experiences including that of depression and anxiety.

High risk families may benefit from lay workers and professionals working together.

Theoretical basis
Several reviewers have noted that programmes with a clear theoretical focus are more likely to be successful than those that lack such a focus. Nation et al (2003) point to two distinct theoretical foci; first, aetiological theory that focuses on the causes (risk or protective factors or processes) of the targeted problem; and intervention theories that are concerned with the best way of changing these aetiological risks. Ideally, programmes should be underpinned by both a clear aetiological model that ensures appropriate targeting of risk factors, and a clear intervention model in terms of how the intervention will work to bring about change.

Consistency and quality of delivery
Programme providers also need to pay careful attention to the fidelity with which programmes are implemented locally. There is a clear consensus in the literature about the importance of

adhering to manualised programmes, and participants receiving all components of the intervention protocol. Recent research has indicated, however, that there is currently a strong tendency for staff to ‘mix and match’ from different programmes and there appears to be a need to distinguish between "planned" deviation from programme manuals (which may be a necessary way of adapting programmes to fit local circumstances or populations) and an unplanned "implementation gap" which may arise from insufficient resources, inadequately trained staff or ineffective management practices or staff training. Although "planned" deviations may be necessary, it is important that the reasons for this are clear, that quality is not compromised, that there is still a clear and plausible hypothesis between the intervention and the outcome of interest, and that any changes to programmes are evaluated.

There is evidence to suggest that ‘less can be more’ but that the quality of an intervention is important. For example, there is some evidence that deprived children benefit disproportionately from high quality care but that they also suffer disproportionately from low-quality services. Some services such as infant massage are becoming ‘routine’, but a number of recent reports have suggested that the quality of current provision is poor, with inadequate attention being paid to factors such as the way in which such services are delivered (e.g. staff modelling good practice; offering continuity of care; focusing on the parent-infant relationship; ongoing training and support of staff etc). The provision of routine services of this nature provide staff with a *key* opportunity to support the developing infant’s needs and to identify parent-infant dyads for whom such support is insufficient, and who are need of additional input. This suggests that staff need to develop a new ‘mindset’ in which universal provision is recognised as being a key opportunity to identify families in need of further support, and early intervention as a key opportunity to identify families for whom referral to treatment services is required.

Related to this, there appears to be some consensus that programmes are more effective when they are multi-component, using different forms of delivery or combining more than one therapeutic approach. Barnes & Freude-Lagevardi (2003) note that each component of multi-component programmes should be of a similar intensity to that of the best single component programme if they are to be effective. Related to this, there appears to be some consensus that programmes are more effective when they are multi-component, using different forms of delivery or combining more than one therapeutic approach. Barnes & Freude-Lagevardi (2003) note that each component of multi-component programmes should be of a similar intensity to that of the best single component programme if they are to be effective, and stress that multiple intervention programmes are required to cover the multiple risk and protective factors that are associated with mental health but careful co-ordination is necessary between the different programme components, and between programmes and other relevant local services.

Workforce requirements

There is a clear consensus about the importance of ‘working in partnership with parents’ and of staff having the necessary skills to do this, including the ability to listen effectively, motivate families to change, and plan problem-solving strategies. This suggests the importance of staff being selected for their qualities and skills (particularly where the intervention involves intensive therapeutic work), and provided with appropriate training, *and* ongoing support.

Other staffing factors that are important in terms of whether a programme is successful include staff being in receipt of ongoing training and support

Clarity around programme purpose and expectations
The success of a programme requires professionals, commissioners and indeed parents to having a clear understanding of the purposes, aims and mechanisms of the intervention. It is also important that all involved are clear what parents will receive.

Other factors that are important in terms of whether a programme is successful include it being evidence-based; the fit of the programme with other services being provided locally and the use of effective signposting; the use of monitoring to assess whether the programme appears to be working alongside the implementation of feedback from service users.

Figure one comprises a checklist that service providers and commissioners should be asking of each programme that they plan to implement.

Figure 1: Successful programme checklist

Is this programme supported by research evidence?
Is the programme well defined?
Who is the programme for?
- What is the target population for this programme?
- What are the target outcomes for this programme?
- Are there clear recruitment processes in place and will these reach our target audience?
- What mechanisms are in place so that participants are able to access the programme?

Is there a clear theoretical basis for the programme?
- Is there a clear hypothesis linking the intervention to a specific outcome or outcomes?

What mechanisms are in place to ensure it is implemented consistently and to the quality intended?
- Is there a manual?
- How can commissioners/providers ensure that quality of delivery is not compromised?
- What mechanisms are in place to monitor programme outcomes? Does this include a process of collecting and acting on feedback from participants?

Do all involved in the programme (providers, parents, commissioners) have a clear idea of the programme?
- Are its purpose and aims clear?
- Is it clear what parents will receive?

Are workforce requirements clear?
- Is on-going training and supervision in place for staff?

Integration with other services
- How does this programme fit with other relevant local programmes and services and are there processes in place to signpost participants to other programmes or services?

5.3 WHEN IS THE BEST TIME TO PROVIDE SERVICES (E.G. PREGNANCY; FIRST YEAR OF LIFE ETC), AND WHAT IS THE OPTIMAL 'DOSE' NEEDED TO ACHIEVE CHANGE?

There is a lack of consensus about the optimal onset, duration and intensity of programmes. This is in part due to a lack of research that is specifically designed to test these factors.[145] We are therefore reliant on largely qualitative assessments of quite different programmes (i.e. that start at different developmental stages, last for different lengths of time and are of different intensities).

There is a lack of consensus about the appropriate time to begin programmes. Bull et al (2004) suggest that home visiting programmes are more effective when begun ante-natally, principally because this allows professionals to build a relationship with parents before their child is born. Barnes & Freude-Lagevardi (2003) also suggest that ante-natal interventions can help to build families' resilience by promoting a positive environment. However, Bakermans-Kranenburg et al (2003) found that interventions starting after 6 months of age were more effective than those that started antenatally or in the first 6 months. However, recent research showing an adverse programming effect on fetal neurodevelopment with long-term consequences for later child development (e.g. ADHD and cognitive development) point to the value of starting during the antenatal period.[146]

There is also a lack of consensus about the optimal intensity and duration. One review found that longer (more than a year), more intensive programmes were more effective than less intensive programmes. Similar findings were evident for some reviews of parenting programmes,[147] although as Bull et al (2004) note there is no clear evidence about the optimal duration and intensity of home visiting programmes. However, Bakermans-Kranenburg et al (2003) found that shorter sensitivity- and attachment-based interventions were more effective than longer ones, and they conclude that offering a small number of high intensity services to a family (especially multi-risk low SES) is likely to be more effective than a large number of low-intensity components.

As both Davis (in press) and Moran et al (2004) note, the duration and intensity of a programme is likely to be related to need: intensive sessions, with booster sessions to reinforce messages after the programme has finished may be more suitable for families with multiple problems, whereas short interventions may be more appropriate for less complex problems.

5.4 WHAT PRODUCES THE MOST COST-EFFECTIVE OUTCOMES?

Overall, there is a paucity of evidence about cost and cost-effectiveness. Much of the data that are available come from evaluations of parenting programmes and to a lesser extent, intensive centre-based, and home visiting programmes. This suggests a number of conclusions:

First, many of the interventions aimed at supporting parenting can be provided as part of *routine care* during the ante- and post-natal periods. For example, anticipatory guidance, and techniques to promote parents awareness of the perceptual and sensory capabilities of their baby can be provided to parents as part of the first and subsequent birth visits to the family. Early intervention of this sort may be effective in preventing later problems in the parent-child relationship.

Second, there is good evidence to support the use of a range of media-based (i.e. self-administered leaflets; videos/DVDs) interventions with parents both as part of universal and a stepped approach to progressive provision. While the available cost data is limited it suggests that media-based interventions are less costly than behavioural therapy or clinic-based services. This is significant given that many media-based interventions may be effective without further intervention with many parents.

The evidence also suggests that many of the group-based formats for providing support to parents are significantly less expensive than clinic-based intervention. This is, once again, a significant finding given that many parents appear to obtain significant benefit from taking part in a group with other parents such as, for example, group-based infant massage programmes, perinatal and postnatal parenting programmes, toddlers and dads programmes etc.

The evidence also supports the use of brief, intensive community-based one-to-one interventions such as videotape feedback and parent-infant psychotherapy. There is currently little evidence about the associated costs, but the brief and focused nature of such programmes, means that they are not likely to be prohibitive and could in the long-term be associated with considerable cost savings.

There are, however, higher costs associated with some of the interventions for which there is evidence of effectiveness, and in particular home visiting programmes and early centre-based interventions to support the cognitive development of disadvantaged children. Most of the available cost data for these programmes has been obtained from programmes evaluated in North America. Many of the long-range estimates show significant cost savings at a societal level, provided that they are directed at high-risk families.[148] For example, an extrapolation of the 15-year follow-up study of the Family Nurse Partnership Home Visiting programme showed that cost savings to government and society were only likely to be accrued for families in which the mother was low-income and unmarried at registration, where the savings exceeded the cost of the programme by a factor of 4 over the life of the child. This points to the importance of ensuring that intensive and costly programmes of this nature are appropriately targeted.

5.5 What is the best means of identifying and prioritising users who Can potentially benefit from services?

There is a wide-ranging debate about whether preventative services should be offered universally or targeted (i.e. both secondary and tertiary prevention) to groups at greatest need. Some programmes show the greatest effect when they are directed at the population with the highest level of need and with the greatest capacity to benefit (secondary and tertiary prevention). There is, however, no clear consensus across the reviews included in this report. One study of attachment interventions[149] found no evidence that interventions were more or less effective with higher-risk families. Other commentators suggest that although universal parenting interventions may be effective (and cost-effective) for less severe parenting problems, targeted interventions may be required for families with higher levels of need. Certainly, the evidence on intensive home visiting programmes suggests the need to target families in order to realise long-term cost savings.

There are several arguments in favour of universally provided programmes. First, they may be less stigmatising. Second, universal programmes may be better able to address problems before they reach clinical levels, and are therefore more genuinely preventive than programmes that become available only after problems have developed. Third, the 'population paradox' refers to a situation in which a relatively large number of lower risk individuals carry the main burden of disease of the population as a whole, such that while people living in a specific area may be at high risk, the majority of high-risk people are actually spread out across a range of areas. Programmes that focus on a specific location will not therefore reach the majority of those who could benefit from such programmes. Although area-based programmes may be a cost-effective solution, universal programmes are likely to have greater reach.

The evidence from the included reviews suggests the following:

- Brief inexpensive interventions can be effective with parents with low to moderate problems, but may also be effective with high-risk families as well. This points to the potential value of a 'stepped care' approach to service provision;
- Targeting should focus on 'at risk' communities rather than the individual characteristics of specific parents. Where targeting is being used, it should focus on the selection of first-time parents, and should be a priority where resources are limited.

The evidence also points to the value of:

- Individual assessment of need – depression, addiction, or maternal age <16 – in order to ensure that programmes are adapted to address the specific needs of individuals and their families;

It should also be borne in mind that:

- Some interventions are time-sensitive – e.g. attachment-focused interventions should be targeted at appropriately aged children etc.

Progressive universalism is one potential solution to the issue of identifying and prioritising users, and comprises universal provision with options to proceed to more intensive services as required. This has the advantages of:

- Providing the context (i.e. universal services) within which an assessment of need can be conducted;
- Reducing the stigma associated with targeting that is undertaken outside the context of universal provision.

5.6 What messages can be drawn from the evidence about the qualities and skills needed by the workforce?

Several commentators[150] have noted that poor relationships between parents and staff delivering programmes may be a key reason for low recruitment and high attrition rates. The commitment of staff to working with parents and/or children as partners in a shared process is likely to be crucial to the success of a programme in terms of achieving its outcomes.[151]

Several reviews[152] suggest that programmes that combine professional and para-professional or voluntary input may be able to draw on a wider skills-set than programmes that just employ

one group: local community members acting on a voluntary or paid basis may have good links to the target community and may be able to help overcome community distrust towards professionals.

Although staff characteristics, training and supervision are crucial to the success of programmes, there is still relatively little in the research literature about the role of these factors. Even where staff have a sufficient degree of formal knowledge to deliver a programme, low morale and lack of 'buy-in' to new programmes may be a major obstacle.[153] Staff should have a clear idea about the purpose of the programme, their role in delivering it, the theoretical and evidence-base for the programme, and be able to share their ideas and experiences with colleagues and supervisors.

There is also a need for a 'skilling-up' of the workforce[154] and for an increase in the availability of health professionals (such as midwives) who can deliver these services:

> *If we are to achieve the goal of helping parents to promote the type of care during the early years that will help the baby to develop regulatory capacities that we now recognise to be central to effective later functioning (including the management of anger and stress), we need to provide core groups of professionals with the expertise to work in partnership with families. Working alongside families to support mental health and well-being involves sensitivity and special skills, and will involve changing aspects of the training programmes of core groups of professionals who work with young children (including midwives, health visitors and doctors), in addition to providing the existing workforce with new skills.*

A number of evidence-based methods of working with parents were identified as part of this review including the Family Partnership Model and the Solihull Approach. These training programmes provide professionals with the necessary skills to become effective listeners; to work in partnership with families; and to help families develop problem-solving skills. These are core skills that should inform all work with families, and be embedded with the development of respectful, warm, and trusting relationships, which we now recognise to be crucial to helping families to change.[155] In addition, professionals need the *observational skills* to be able to recognise when things are not going well between a mother/father and baby, the *intervention skills* to enable them to undertake preliminary work with parents experiencing minor difficulties (e.g. videotape feedback methods), and the skills to know when and how to refer onto more specialist services (parent-infant psychotherapy services) (ibid).

5.7 WHAT FACTORS ARE ASSOCIATED WITH 'ENGAGEMENT'?

Barnes & Freude-Lagevardi (2003) have identified 'primary' or 'threshold' factors, such as the recruitment of participants and encouragement to help families to continue with a programme, as being crucial to the success of the programme. This suggests that programme providers need to give careful consideration to how participants are to be recruited (where will the programme be advertised? how can the programme be advertised to people most likely to be benefit from the programme?) and to the potential barriers to participation. These could be real (people may not be able to afford to get to the programme venue, the venue may be difficult to get to by public transport or the programme may not be held at a suitable time) or perceived (taking part in a programme may be stigmatising or may be felt to be racist or culturally

inappropriate). All these factors need to be considered locally prior to the implementation of a programme.

Figure 2: Threshold factors.

A. Programme recruitment
Engaging participants Removing barriers (perceived or actual) to participation
B. Programme content & delivery
Developing a positive therapeutic relationship between client & intervener Client involved in decision-making Programme sympathetic to clients' cultural background

Adapted from Barnes & Freude-Lagevardi, 2003

Figure 3: A model for providing early intervention to enhance children's mental health

Primary engagement factors:

- Shared decision-making (intervener-client interface)
- Quality of the therapeutic relationship (intervener-client interface)
- Matching model with needs (model-client interface)
- Non-stigmatising community focus (model-client interface)
- Cultural awareness/ sensitivity (model-intervener-client interface)
- Flexible settings/ hours (programme characteristic-client interface)
- Crisis help prior to other intervention aims (programme characteristic-client interface)

Secondary factors

Model-participant interface -Positive/ non-deficit approach based on client strengths -Ecological/ systems approach	Programme characteristics-Participant interface -**Non-fragmented case management**	Intervener-participant interface -Non-expert, partnership approach, recognition of clients as experts of their own lives/ children

Adapted from Barnes, J. & Freude-Lagevardi, A. (2003)

CONCLUSIONS

Key findings of the review are as follows:

There is a lack of high-quality, particularly UK-based, research about the effectiveness of interventions delivered during the postnatal period in supporting parenting to promote optimal outcomes for children;

A number of methods of supporting parenting can be recommended as part of a model of progressive provision beginning ante-natally and continuing through the first two post-natal years, and later;

The evidence suggests that the *focus* of support that is provided to both mothers and fathers during the perinatal period should be the *parent-infant relationship.*

A range of services are required and should be underpinned by a clear theoretical model and/or model of change; provide an assessment of the individual needs within the family in order that the appropriate level of services can be provided; and offer a 'stepped approach' to provision.

There is indicative evidence to support the use of a range of innovative and dyadic methods of supporting the parent-infant relationship such as video-feedback; infant massage; methods of increasing the parents awareness of the infants perceptual and sensory capabilities; parent-infant psychotherapy. Many of these techniques (e.g. skin-to-skin care; infant carriers; anticipatory guidance etc) should be part of the *routine guidance* that is offered to parents.

Targeting of services should as far as is possible be undertaken within the context of universal provision. Promotional interviews provide an exemplar of the type of strategy that staff could use to identify families in need of further support.

Primary care practitioners (particularly midwives and health visitors) have a number of key opportunities to identify 'deep-seated' problems such drug-abuse and domestic abuse, which are strongly associated with poor outcomes for children. The identification of these problems should be undertaken *routinely* and on a *universal* basis, as part of the process of working in partnership with women and their families, and as part of the process of establishing a problem-solving relationship with clients, using simple, focused questions.

There is an urgent need for further research in a number of areas:

- The best methods of providing antenatal preparation for childbirth and the transition to parenting;
- Best methods of supporting fathers;
- Methods of supporting alcohol and drug abusing parents, and parents with serious mental health problems during pregnancy;
- Prevention and treatment of obesity.

While cost data are limited, the available evidence suggests that many of the interventions reviewed can be provided as part of standard provision or with minimal costs implications using

group- and community-based methods. This could be facilitated through de-investment in activities that are not currently well-supported by the evidence, and through primary care staff being helped to change the focus of routine visits particularly the booking-in visit during pregnancy and the birth- and subsequent postnatal visits. Intensive and costly centre-based or home visiting programmes should be carefully targeted to ensure that societal cost savings are realised in the long-term.

Further skilling-up of the primary care workforce is needed to enable them to provide some of the parenting interventions/services identified as part of this review. Staff should have core qualities, skills and understanding (irrespective of the intervention or service) to enable them to work effectively with families including listening, partnership working, and the ability to help families to develop problem-solving skills. These should be provided as part of the *core training* of groups of professionals such as midwives and health visitors, and offered as part of continuing professional development for trained staff.

Factors associated with ‘engagement’ and ‘retention’ should be addressed.

Appendix 1: Included studies

i) Antenatal interventions

Antenatal classes: focus on pregnancy and childbirth

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Gagnon (2000)	Individual and/or group-based antenatal education primarily focused on childbirth	To help prospective parents prepare for childbirth.	Educators, primarily nurses/health professionals.	Interventions ranged from one/two contacts, to a series of sessions delivered over several weeks. Session length ranged from one hour to two and a half hours.	Expectant mothers and fathers. Range of settings.	Antenatal

Critical Appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Gagnon (2000)	Yes	RCTs	Yes	Yes	Meta-analysis	Confidence intervals	Yes	Not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Gagnon (2000)	Five trials of largely 'traditional' antenatal education focused on childbirth and care of baby in the immediate postnatal period.	Knowledge acquisition; anxiety; maternal self confidence; labour pain and use of medication; partner involvement at birth; breastfeeding; infant care abilities; general social support; psychological adjustment to parenthood; obstetric interventions.	Increased vaginal birth among women who had had caesarean delivery, as a result of face to face or media based education. Otherwise no consistent results found.	There is a lack of high quality evidence and the effects of antenatal preparation for childbirth remain largely unknown.

Antenatal parenting programmes: focus on parenting

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Gagnon (2000)	Individual and / or group antenatal education for parenthood	To help prospective parents prepare for childbirth and/or parenting.	'Educators'; primarily nurses/health professionals.	Group based parent education. Duration varied.	Expectant couples/fathers. Structured antenatal education.	Intervention delivered antenatally.

Critical Appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Gagnon (2000)	Yes	RCTs	Yes	Yes	Meta-analysis	Confidence intervals	Yes	Not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Gagnon (2000)	Four studies of interventions that included focus on parenting as well as preparation for childbirth, and which involved either fathers alone, or fathers and mothers.	Knowledge acquisition; anxiety; maternal self confidence; labour pain and use of medication; partner involvement at birth; breastfeeding; infant care abilities; general social support; psychological adjustment to parenthood; obstetric interventions.	1 trial (men only) found increased paternal sensitivity and empathy. 1 trial reported increased knowledge but unclear whether this translated into changed behaviour.	The review found a lack of high quality evidence from trials and the effects of antenatal education remain largely unknown.

Preparation for fatherhood

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Magill-Evans (2006)	Interventions targeting fathers of newborn infants or toddlers.	To promote positive parent- child relationships and optimal child development.	Health professionals; self administered; unspecified.	Variety of interventions ranged in duration from one-time to activities over several months.	Fathers (not exclusively) of children <5 years old, predominantly middle class families, although 2 studies specifically addressed low income families. Clinic, community or home setting.	From antenatal period to child age 5+.

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Design of included studies	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Can the results be applied to the UK?	Do benefits outweigh harms and costs
Magill-Evans (2006)	Yes	Range of study designs.	Yes	Yes	Effect of individual studies	No measures of precision provided	Yes	Not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Authors' conclusions
Magill-Evans (2006)	14 papers describing 12 ante, neo-, post-natal and early childhood interventions with a focus on fathers. Studies included: infant massage; observation and modelling behaviour; kangaroo care; participation with child in a pre-school programme; discussion groups; parent training programmes.	Primary outcomes included: father's sensitivity, engagement with child, parenting, self-efficacy, knowledge of childcare, anxiety . Few studies used the same outcome measures	Some interventions for fathers that involve active participation with, or observation of his child, enhance father-child interactions. Intervention is more likely to be effective if the father has multiple exposures to the intervention. More research is needed to determine the appropriate dose of effective interventions, their impact over time, and the differential impact of interventions with mothers and fathers.	More research is needed to determine the appropriate dose of effective interventions, their impact over time, and the differential impact of interventions with mothers and fathers.

Promotion of breastfeeding

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Renfrew (2005)	3 systematic reviews of health-sector led interventions to promote breastfeeding. Peer support programmes; professional support. Health education; combined health education and professional support; combined professional and peer support. Professional training; hospital practices; multisectoral interventions; media programmes; breastfeeding literature.	To promote initiation/ continuation of breastfeeding	Health professionals; peers/volunteers; media campaigns; multimodal.	Varied	Pregnant women, mothers of newborn infants and women who may decide to breastfeed in future. Variety of settings including home; clinic/hospital.	Women during ante-natal and/or postnatal period
Dyson (2005)	6 interventions to promote the initiation of breastfeeding during pregnancy: included antenatal health education; written information; antenatal paediatric visits	To promote the uptake of breastfeeding	Health professionals	Varied	Pregnant women, mothers of newborn babies and women who may decide to breastfeed in the future. Five of the seven trials were with low income US women. Interventions delivered in the home, clinic or hospital.	Women during ante-natal period

Critical appraisal

Author (Year)	Focus of the review	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Renfrew (2005)	Effectiveness of interventions on initiation and/or continuation of breastfeeding.	Systematic reviews	Yes	Yes	Quantitative - Effect sizes, not combined	No measures of precision provided	Yes	Not assessed
Dyson (2005)	Effectiveness of interventions on initiation of breastfeeding.	RCTs	Yes	Yes	Quantitative - meta-analysis	Confidence intervals	Yes	Not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Renfrew (2005)	4 systematic reviews of interventions to promote breastfeeding (antenatal and postnatal period) included which include 210 studies. Studies include: health sector initiatives; training of health professionals; social support from health professionals; peer support; media campaigns; multifaceted interventions.	Primary outcome: initiation of breastfeeding. Secondary: duration and exclusivity of breastfeeding.	Three types of intervention have been shown to be effective in promotion of breastfeeding -Interactive health education in small groups for women who have decided to breastfeed -One to one health education for women who have not decided to breastfeed -Interventions that involve peer support - Packages of interventions (combinations of the above) combined with structural changes to the health sector, and/or health education initiatives can be effective.	Peer support programmes, particularly for women from low income groups; implementation of a package of interventions with emphasis on peer support, good practice health education activities and structural changes to maternity practices; revision of good practice guidance on breastfeeding.
Dyson (2005)	6 RCTs (of 7 included studies)	Initiation rate of breastfeeding.	Antenatal breastfeeding education had a significant effect on increasing initiation rates compared to routine care.	Antenatal breastfeeding education was effective at increasing breastfeeding initiation rates, but all included studies involved low income women in the USA .

Antenatal smoking cessation and reduction

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Arborelius (2000)	Interventions to protect infants from tobacco smoke. These include smoking cessation/reduction and initiatives to reduce child risk / create smoke free areas in the home. Interventions involve one or both partners.	Protection of infants and small children from exposure to tobacco smoke.	Health professionals; further details not provided for most studies.	Ranged from brief counselling to home visits over several months, depending on the nature of the intervention	Pregnant women or new mothers who smoke. Clinic, group and home setting.	Antenatal or postnatal.
Lumley (2004)	Smoking cessation programmes for pregnant women.	Smoking cessation	Health professionals: peer counsellors;	Ranged from one session to a series of sessions, additional telephone support and media based educational material, and/or peer support of varying frequency	Participants were healthy pregnant women smokers. Usual setting was hospital or community antenatal clinics. Some home support.	Antenatal, sometimes continuing postnatally.
Melvin (2000)	Smoking cessation counselling for pregnant women.	Smoking cessation.	Trained pre-natal professionals with additional self help materials in some cases.	Between 5-15 minutes brief counselling during antenatal period, plus some self-help materials.	Pregnant women who smoke. Clinic or community setting.	Antenatal
Park (2004)	Enhancing partner support to improve smoking cessation	Smoking cessation.	Health professionals: peer counsellors;	Cessation techniques included nicotine gum, psychotherapy, television programmes, self-help manuals, group meetings, and/or quitting guides. Partner support interventions included empathy	Partners of smokers; smoking cessation ‘buddies’; colleagues.	Interventions are not specifically for parents of young children.

				exercises, video tapes, strategy booklets, group meetings with support manuals, monitoring booklets, behavioural technique sessions, social support guides, telephone calls from a counsellor, and/or a telephone contact system		
Windsor (2003)	Smoking cessation for pregnant women.	Smoking reduction or cessation.	Wide ranging; midwife; doctor; self-help booklet/pamphlet; health educator.	Wide ranging duration and frequency.	Targeted to women who smoke during pregnancy. Setting; clinic; home; community.	Antenatal

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Arborelius (2000)	Yes	Mixed study designs	Yes	Not clear	Narrative summary - no data	No measures of precision provided	Yes	Not assessed
Lumley (2004)	Yes	RCTs	Yes	Yes	Quantitative - meta-analysis	Confidence intervals	Yes	Not assessed
Melvin (2000)	Yes	RCTs	Yes	Not clear	Quantitative - meta-analysis	Confidence intervals	Yes	Not assessed
Park (2004)	Yes	RCTs	Yes	Yes	Quantitative - meta-analysis	Confidence intervals	Yes	Not assessed
Windsor (2003)	Yes	RCTs	Yes	Yes	Narrative summary - no data	No measures of precision provided	Not clear	Not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Arborelius (2000)	Antenatal smoking cessation / reduction interventions in the antenatal period (number of trials not stated). These include: provision of information; counselling; interventions with a behavioural focus; interventions geared to: changing adults' beliefs; reduction of stress; promoting parents' self-efficacy.	Primary outcomes were smoking cessation or continued smoking.	Antenatally the greatest effect is from interventions based on behavioural strategies. These can lead to a doubling of the number of women who stop smoking during pregnancy. Factual information has no significant effect. The most decisive factors for children not being exposed to passive smoking are a concentration on strengthening parents' faith in their ability to create a smoke-free environment, and behavioural strategies to achieve this goal, rather than focusing primarily on encouraging smoking cessation.	Further studies are needed of different types of interventions aimed at smokers with small children, before specific recommendations can be given regarding tobacco-preventative work in relation to child healthcare.
Lumley (2004)	64 trials included: provision of written and verbal information; advice/counselling by a health professionals; supplementation of advice with group counselling/antenatal visits/individual advice sessions on smoking cessation; provision of pregnancy-specific methods of quitting smoking.	Principal outcome measure was continued smoking in late pregnancy. Other outcomes include: smoking reduction; smoking cessation in the ante/postnatal period; infant birthweight; breastfeeding; measures of anxiety and depression.	Despite considerable variation in the intensity of the intervention and the extent of reminders and reinforcement during pregnancy, there was an increase in the median intensity of both 'usual care' and interventions over time. There was a significant reduction in smoking in the intervention group of the 48 trials included in the meta analysis. Smoking cessation interventions indicated a reduction in low birthweight babies and preterm birth. One strategy – behavioural interventions that included provision of incentives plus social support (2 trials) resulted in a significantly greater smoking reduction than other strategies.	Smoking cessation programmes in pregnancy can reduce the proportion of women who continue to smoke, and reduce low birthweight and preterm birth. The pooled trials had inadequate power to detect reductions in perinatal mortality or low birthweight.

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Melvin (2000)	16 trials of smoking cessation counselling.	Primary outcome measure; cessation of smoking.	Brief cessation counselling session of 5-15 minutes, when delivered by a trained provider with the provision of pregnancy-specific self help materials, significantly increases rates of cessation among pregnant smokers.	The use of antenatal counselling is recommended. This intervention is feasible in most office or clinic settings and can be provided without inhibiting other important aspects of prenatal care.
Park (2004)	10 trials of interventions that compared with and without an adjunctive partner support component	Smoker's self reported abstinence; biochemical measures.	No evidence found of increase in smoking cessation rates in programmes that involved partner support.	No conclusions can be made about the impact of partner support on smoking cessation
Windsor (2003)	23 intervention studies included in the review.	Primary outcome measure; quit rates.	The review focuses on internal validity of intervention studies, rather than on the overall results of the included studies. Eleven of the twenty three included studies were methodologically strong. Poor measurement of smoking status, patient selection biases and incorrect calculation of quit rates were identified as major methodological weaknesses.	A number of studies in the review had serious methodological weaknesses. Future research reports need to be more systematic in their approach to providing information about content, theoretical frameworks, frequency and duration of intervention, mode of delivery and cost/benefits.

Psychosocial interventions to prevent low birth weight

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Lu (2003)	Prenatal care for preventing low birth weight. Clinical, psychosocial and health promotion interventions included.	Prevention of low birth weight.	Mainly unspecified. Clinicians.	Unspecified.	Targeted at pregnant women. Setting largely clinical.	Antenatally.

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Design of included studies	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Can the results be applied to the UK?	Do benefits outweigh harms and costs
Lu (2003)	Yes	Not specified	Yes	Yes	Quantitative - Effect sizes, not combined	Confidence Intervals provided	Not certain	Not fully assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Lu (2003)	Not specified. Early and continuing risk assessment; health promotion; medical and psychosocial interventions.	Clinical and psychosocial outcomes. Very varied.	Neither preterm birth nor intrauterine growth restrictions can be effectively prevented by prenatal care in it's present form.	Preventing LBW will require a longitudinally and contextually integrated strategy to promote optimal development of women's reproductive health, not only during pregnancy, but over the life course.

Treatment of antenatal depression and anxiety

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Dennis (2007)	Psychosocial and psychological interventions.	The treatment of antenatal depression.	Trained therapist.	16 x 45 minute weekly individual sessions.	Depressed pregnant women, setting not identified.	Delivered during antenatal period.
NICE (2007)	Psychological and psychosocial interventions for prevention / treatment of depression in the antenatal and postnatal period.[1]	Identification and treatment of mental health problems including anxiety and depression in the ante/postnatal period.	Wide ranging, primarily health professionals. See full report.	Varied. See full report.	Women with, or at risk of mental health problems in the ante/postnatal period.	Antenatal and/or postnatal period.

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Design of included studies	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Can the results be applied to the UK?
Dennis (2007)	Yes	RCTs	Yes	Yes	Individual test statistics	Confidence intervals	Only one trial; limits generalisability of findings.
NICE (2007)	Yes	Range of study designs, including RCTs, cohort studies, non-randomised controlled trials.	Yes	Yes	Quantitative - Effect sizes, not combined	Confidence intervals	Yes

[1] NICE systematic review/ guidelines also cover pharmacological treatments, and prevention / treatment of a range of mental health problems including psychosis, schizophrenia which are beyond the scope of this review.

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Dennis (2007)	One RCT comparing psychosocial and psychological interventions.	Maternal outcomes relating to depressive symptomatology.	Interpersonal psychotherapy effective in reducing depressive symptoms in pregnant women.	Evidence is inconclusive to enable recommendations for interpersonal psychotherapy for the treatment of antenatal depression. The one trial included was too small, with a non-generalisable sample.
NICE (2007)	16 studies of psychological and psychosocial treatments of populations at identified risk. 16 studies of psychological and psychosocial interventions aimed at preventing mental health disorders for women at no identified risk.	Maternal mental health, maternal-infant interaction.	Brief identification measures (e.g. 3 questions) effective in identifying symptoms of depression in ante- post-natal period. Some evidence that psychosocial interventions to prevent the onset of depression are effective with women in women at risk, particularly those who have sub-threshold symptoms of depression/anxiety. No evidence that such interventions are effective with women at low risk. Brief psychological treatment e.g. interpersonal psychotherapy or CBT effective in alleviation of symptoms of depression/anxiety. Very little evidence of differential effectiveness. Good evidence for individual therapy; mixed results for group treatment.	CBT or interpersonal therapy for treatment Psychosocial interventions for women with sub-threshold symptoms and at identified psychosocial risk

Domestic abuse

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
MacMillan (2001)	Interventions to detect violence against women that has already occurred and programmes that attempt to reduce violence by the male partner.	Detection of domestic abuse, and prevention/reduction of domestic abuse.	Health professionals, counsellors and paraprofessionals.	Wide variation including; - counselling plus outreach support; 4-6 weeks x 1 hour one on one advocacy counselling for battered women. 20 weekly group sessions of 2.5 hours; 12 weekly group sessions of 2.25 hours; weekly group session for 9 months; 4 x 2 hour information sessions for abusers.	Women who are battered and male abusers. Treatment in emergency rooms; community health settings; primary care settings. For men: above plus criminal justice settings.	Review is not limited to interventions for women during pregnancy and neonatal period.
Ramsay (2002)	Surveys that elicited attitudes of healthcare professionals and women about the identification of domestic abuse in women in healthcare settings Comparative studies measuring rates of identification of domestic abuse Interventions for women identified in healthcare settings who experience abuse from a male partner or ex partner	To assess evidence for acceptability and effectiveness of screening for domestic abuse in healthcare settings, and for treatment.	Health professionals.	Screening: Programmes with multiple questions and with single questions. Screening programmes with and without substantial additional education and training for staff. Interventions: advice about services, advocacy and counselling in antenatal clinics.	Women in healthcare settings.	Wide range.

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
MacMillan (2001)	Yes	RCTs, cohort studies, non-randomised controlled trials.	Yes	Yes	Individual test statistics	Significant levels of individual studies	Possibly	Uncertain - harms and/or costs not assessed
Ramsay (2002)	Yes	Time series; pre and post intervention parallel groups.	Yes	Yes	Individual test statistics	Significant levels of individual studies	Yes	Uncertain - harms and/or costs not assessed

Results

MacMillan (2001)	23 studies were included. Wide variation in type of studies including evaluations of interventions working with male abusers, and those focused on abused females included evaluations of shelter accommodation; post shelter advocacy counselling; personal counselling; prenatal counselling.	Incidence of physical, sexual or emotional abuse by men against their female partners; women's use of safety behaviours; social support, community resources etc following intervention. Other outcomes included in individual studies (e.g. assessment of psychological status; substance abuse status) were not considered primary outcomes for this review.	There is insufficient evidence to recommend for or against screening/assessment for violence against non-pregnant or pregnant women. There is insufficient evidence to recommend for or against any specific interventions for women exposed to violence, other than referral to post-shelter advocacy counselling. The effectiveness of shelters in preventing violence against women is unknown. There is conflicting evidence regarding the effectiveness of batterer interventions in reducing rates of further domestic abuse.	The review identifies the need for additional research employing rigorous designs to test the effectiveness of domestic abuse interventions on important clinical outcomes.

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Ramsay (2002)	20 papers on attitudes of healthcare professionals and women about screening/assessment; comparative studies of screening/assessment; interventions for battered women in healthcare settings	To assess evidence regarding the acceptability and effectiveness of screening/assessment for domestic abuse in healthcare settings and the effectiveness of interventions on outcomes including women's further exposure to violence and access to services.	Six studies found that screening/assessment detected higher levels of domestic abuse than no screening/assessment. However, little evidence exists for changes in important outcomes (e.g. decreased exposure to violence) as a result of screening/assessment/assessment. No studies measured quality of life, mental health outcomes or potential harm to women from screening/assessment/assessment programmes. No differences in detection sensitivity found for assessment with or without significant additional staff training. No difference found between use of single questions and more complex measures. Two studies measured effect of interventions in healthcare settings on further exposure to domestic abuse. These found mixed results, with some evidence of the effect of combined counselling and advocacy. Five studies of referral to other agencies found limited evidence of further use of community resources.	Evidence of the benefit of specific interventions and lack of harm from screening/assessment is needed; as a result, resistance to universal screening/assessment from healthcare providers. Some evidence of effect of combined counselling and advocacy in one study only.

Alcohol consumption/addiction

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Doggett (2005)	Home visiting.	Improving outcomes for pregnant or postpartum women with drug or alcohol problems.	A range of health professionals including doctors, nurses, social workers, counsellors, trained lay people.	Majority started postpartum and continued for up to six months; four studies continued beyond six months. Frequency ranging from less than weekly, to weekly.	Pregnant or newly delivered mothers with a drug or alcohol problem. Intervention delivered in the home.	No studies provided a significant antenatal component. Predominantly focused on postnatal home visiting.
Handmaker, (2001)	Motivational interviewing and brief motivational interventions.	Reduction or cessation alcohol consumption in pregnancy.	Therapists; health practitioners.	Varied including; 10 minute education session combined with self help; one to two home visits;	Pregnant women identified with alcohol problems. Clinical, residential or home/community settings.	Antenatally.
Rubak (2005)	Motivational interviewing.	Change in a range of behaviours associated with health outcomes including drug use, alcohol use throughout the life course.	Therapists; health practitioners.	Individual interviews lasting between 10 minutes and 2 hours. Duration between 3 months to 2 years.	Targeted towards people who need/wish to change health behaviours. Setting - counselling setting.	Varied.
Terplan (2007)	Psychosocial interventions for treating illicit drug use in pregnancy; six studies involved treatment of both drug and alcohol abuse.	Improved neonatal and birth outcomes, clinic adherence and abstinence.	Not specified.	Wide range of duration and frequency, ranging from 2 weeks to 31 weeks, most interventions involved weekly meetings and interviews/monitoring.	Clinical inpatient and outpatient settings. Targeted at women involved in illicit drug use during pregnancy.	Antenatal period.

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Doggett (2005)	Yes	RCTs	Yes	Yes	Meta-analysis	CI	Uncertain	Uncertain - harms and/or costs not assessed
Handmaker (2001)	Yes	Demonstration projects and controlled trials	Yes	Yes	Narrative summary - no data	CI	Yes	Uncertain - harms and/or costs not assessed
Rubak (2005)	Yes	RCTs	Yes	Yes	Meta-analysis	CI	Yes	Uncertain - harms and/or costs not assessed
Terplan (2007)	Yes	RCTs	Yes	Yes	Meta-analysis	CI	Uncertain	Uncertain - harms and/or costs not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Doggett (2005)	6 studies on postnatal home visits for women with alcohol or drug problems.	Drug and alcohol related outcomes; pregnancy and pueriperium outcomes; Infant/child outcomes; Psychosocial outcomes.	Evidence that home visits after the birth increased the engagement in drug treatment services but insufficient data that this improved health outcomes for infant or mother.	Insufficient evidence to recommend routine use of home visits for women with drug or alcohol problems. Further large high quality trials are needed, and women's views on home visiting need to be assessed.
Handmaker (2001)	22 studies of motivational interventions and MI aimed at reduction/cessation of alcohol consumption in pregnancy. Nature of alcohol consumption ranged from social to heavy drinking. 4 studies included women with co-occurring drug and alcohol use.	Reduction or cessation of alcohol consumption; drug consumption; treatment retention; pregnancy outcomes; infant outcomes.	Evidence that interventions by obstetric caregivers can help reduce drinking even among heavy consumers of alcohol.	By combining these interventions with a stepped-care approach, practitioners will be able to intervene to prevent drinking during pregnancy, while minimising demands for limited clinic resources.
Rubak (2005)	72 trials on MI throughout the life course, including treatment of addictions.	Clinical outcome measures.	Motivational interviewing showed a significant effect in a number of clinical areas with an equal effect on psychological diseases. More than one encounter increases the effectiveness of motivational interviewing.	Motivational interviewing in a scientific setting outperforms traditional advice-giving in the treatment of a broad range of behavioural problems and diseases.
Terplan (2007)	9 studies included in the review. Two interventions evaluated: Contingency Management (CM) (based on positive reinforcement to influence behaviour change), and manual-based Motivational Interviewing (directive, counselling style intervention to elicit behaviour change).	Obstetric outcomes; birth weight; gestational age at birth; placental abruption. Neonatal outcomes; admission to NICU; neonatal abstinence syndrome. Substance usage; maternal toxicology; maternal self report; newborn toxicology.	Of 9 included studies, 5 focused on contingency management (CM) and 4 on motivational interviewing interventions (MI). Contingency management led to better treatment retention but minimal effect on illicit drug consumption. MI led towards poorer study retention. No difference found in birth or neonatal outcomes.	Insufficient evidence to assess the effects of psychosocial interventions on obstetric and neonatal outcomes. CM effective in improving retention of pregnant women in illicit drug treatment programmes as well as in transiently reducing illicit drug use. Insufficient evidence to support the use of MI.

Drug addiction

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Doggett (2005)	Home visiting.	Improving outcomes for pregnant or postpartum women with drug or alcohol problems.	A range of health professionals including; doctors, nurses, social workers, counsellors, trained lay people.	Majority started postpartum and continued for up to six months; four studies continued beyond six months. Frequency ranging from less than weekly, to weekly.	Pregnant or newly delivered mothers with a drug or alcohol problem. Intervention delivered in the home.	No studies provided a significant antenatal component. Predominantly focused on postnatal home visiting.
Handmaker, (2001)	Motivational interviewing and brief motivational interventions.	Reduction or cessation alcohol consumption in pregnancy.	Therapists; health practitioners.	Varied including; 10 minute education session combined with self help; one to two home visits;	Pregnant women identified with alcohol problems. Clinical, residential or home/community settings.	Antenatally.
Rubak (2005)	Motivational interviewing.	Change in a range of behaviours associated with health outcomes including drug use, alcohol use throughout the life course.	Therapists; health practitioners.	Individual interviews lasting between 10 minutes and 2 hours. Duration between 3 months to 2 years.	Targeted towards people who need/wish to change health behaviours. Setting – counselling.	Varied.
Terplan (2007)	Psychosocial interventions for treating illicit drug use in pregnancy; six studies involved treatment of both drug and alcohol abuse.	Improved neonatal and birth outcomes, clinic adherence and abstinence.	Not specified.	Wide range of duration and frequency, ranging from 2 weeks to 31 weeks, most interventions involved weekly meetings and interviews/monitoring.	Clinical inpatient and outpatient settings. Targeted at women involved in illicit drug use during pregnancy.	Antenatal period

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Doggett (2005)	Yes	RCTs	Yes	Yes	Meta-analysis	CI	Uncertain	Uncertain - harms and/or costs not assessed
Handmaker, (2001)	Yes	Demonstration projects and controlled trials	Yes	Yes	Narrative summary of results	No sig. levels	Yes	Uncertain - harms and/or costs not assessed
Rubak (2005)	Yes	RCTs	Yes	Yes	Meta-analysis	CI	Yes	Uncertain - harms and/or costs not assessed
Terplan (2007)	Yes	RCTs	Yes	Yes	Meta-analysis	CI	Uncertain	Uncertain - harms and/or costs not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Doggett (2005)	6 studies on postnatal home visits for women with alcohol or drug problems.	Drug and alcohol related outcomes; pregnancy and pueriperium outcomes; Infant/child outcomes; Psychosocial outcomes.	Evidence that home visits after the birth increased the engagement in drug treatment services but insufficient data that this improved health outcomes for infant or mother.	Insufficient evidence to recommend routine use of home visits for women with drug or alcohol problems. Further large high quality trials are needed, and women's views on home visiting need to be assessed.
Handmaker, (2001)	22 studies of motivational interventions and MI aimed at reduction/cessation of alcohol consumption in pregnancy. Nature of alcohol consumption in included studies ranged from mild social to heavy drinking. 4 studies included women with co-occurring drug and alcohol use.	Reduction or cessation of alcohol consumption; drug consumption; treatment retention; pregnancy outcomes; infant outcomes.	Evidence that interventions by obstetric staff can help reduce drinking even among heavy consumers of alcohol.	By combining these interventions with a stepped-care approach, practitioners will be able to intervene to prevent drinking during pregnancy, while minimising demands for limited clinic resources.
Rubak (2005)	72 trials on MI throughout the life course, including treatment of addictions.	Clinical outcome measures.	Motivational interviewing showed a significant effect in a number of clinical areas with an equal effect on psychological diseases. More than one encounter increases the effectiveness of motivational interviewing.	Motivational interviewing in a scientific setting outperforms traditional advice-giving in the treatment of a broad range of behavioural problems and diseases.
Terplan (2007)	9 studies included in the review. Two intervention types were included; Contingency Management (based on positive reinforcement to influence behaviour change), and manual based Motivational Interviewing (directive, counselling style intervention to elicit behaviour change).	Obstetric outcomes; birth weight; gestational age at birth; placental abruption. Neonatal outcomes; admission to NICU; neonatal abstinence syndrome. Substance usage; maternal toxicology; maternal self report; newborn toxicology.	Of the nine included studies, 5 focused on contingency management (CM) and 4 on motivational interviewing interventions (MI)Contingency management led to better treatment retention but minimal effect on illicit drug consumption. MI led towards poorer study retention. No difference found in birth or neonatal outcomes.	Contingency management strategies are effective in improving retention of pregnant women in illicit drug treatment programmes as well as in transiently reducing illicit drug use. Insufficient evidence to support the use of Motivational interviewing. The available evidence has low numbers and it is impossible to accurately asses the effects of psychosocial interventions on obstetrical and neonatal outcomes.

Supporting mothers/parents at demographically higher risk – Home visiting

Content

Author	Intervention being reviewed	Intervention aim	Who delivers the intervention?	Intervention frequency and duration	Intervention target and setting	When intervention is delivered
Bernazzani (2001)	Early parenting and home visitation programmes.	Improvement of parenting skills.	Not identified for the majority of included studies. Nurse and GP were identified in two studies.	Interventions commencement ranging from prenatal to less than 12 months, to age 2. Overall duration ranged from more than 2 - 6 years. Follow-up ranged from end of intervention, to 13 years post-intervention.	Families with a child under age 3, including antenatal.	Antenatal and postnatal. Where child is less than age 3.
Blondel (1995)	Antenatal home visiting programmes	To improve pregnancy outcome, through increased medical care or social support.	Ante and postnatal home visiting programmes	Extensive range of programmes	Women with obstetric, social or demographic risk factors, or who presented complications of pregnancy.	Antenatally
Bull (2004)	Ante and postnatal home visiting programmes	Range of outcomes to improve parent, child, parent-child interaction	Ante and postnatal home visiting programmes	Extensive range of programmes contained in 9 systematic reviews	Mothers and families during pregnancy and/or early years	Antenatal and postnatal.

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Bernazzani (2001)	Yes	RCTs	Yes	Yes	Quantitative - Effect sizes, not combined	Significance levels reported	Yes	Uncertain - harms and/or costs not assessed
Blondel (1995)	Yes	RCTs	Yes	Yes	Quantitative - Effect sizes, not combined	Significance levels/ CI reported	Yes	Uncertain - harms and/or costs not assessed
Bull (2004)	Yes	Systematic reviews	Yes	Yes	Quantitative - Effect sizes, not combined	Significance levels/ CI reported in included reviews	Yes	Yes

Author	Included studies	Outcomes measured	Results	Author's conclusions
Bernazzani (2001)	Seven RCTs included. Universal and targeted interventions included. Parent training or support was a major component of the included programmes.	Child disruptive behaviour	Of the seven trials identified, four studies reported no evidence of effectiveness, two reported beneficial effects, and one reported mainly beneficial effects with some harmful effects (late for school). Studies varied greatly on outcome measures, child age at evaluation, nature and duration of intervention and sample size.	Caution is suggested on the interpretation of findings due to a limited number of adequately designed studies; where positive results are reported they are often modest in magnitude, and very few studies (two of seven) were specifically designed to prevent disruptive behaviour in children.
Blondel (1995)	Eight trials, plus one unpublished study. Two types of trials included; visits intended to provide social support to high risk women; visits providing medical care to women with complications.	Pregnancy outcomes e.g. pre-term deliveries; use of health services; women's knowledge of health issues, behaviour, access to social support.	In both categories (social support for high risk women, and medical care for women with pregnancy complications) pregnancy outcome was not improved when women received home visits. Home visits did not decrease the rate of hospital admission for women with complications of pregnancy. In some trials home visits had positive effects on women (medical knowledge, support levels, health habits, satisfaction).	Little evidence that programmes offering home visits are effective in improving pregnancy outcomes or use of health services. A better integration of hospital and home visiting might enable a more rational use of health services for women with potential complications. It is necessary to more precisely define the content of home visits providing social support.
Bull (2004)	Nine systematic reviews.	A range of outcomes including: neotnatal outcomes; mother-infant interaction, parenting, breastfeeding, medical knowledge, prevention of child injury, health habits, maternal satisfaction, anxiety, depression; maternal education and life course, child cognitive measures, child health, child abuse and neglect,	Improvements in parenting; reported improvements in some child behavioural problems; Improved cognitive development, especially among some sub-groups of children such as those born prematurely or born with low birth weight; A reduction in accidental injury among children; Improved detection and management of post-natal depression. Limited evidence of long-term effect on maternal life course (employment and welfare dependence). Evidence of reduction of child abuse and neglect unclear, partly because HV increases likelihood that child abuse will be detected.	Home-visiting programmes to parents of young children have been associated with: Improvements in parenting; reported improvements in some child behavioural problems; improved cognitive development, especially among some sub-groups of children such as those born prematurely or born with low birth weight; a reduction in accidental injury among children; Improved detection and management of post-natal depression. There is either no evidence or inconclusive evidence for impact of home visiting on other outcomes including child abuse, increased uptake of immunisation, reduced hospital admissions or maternal participation in education or in the workforce. There is an urgent need to further develop the UK evidence base in this area.

ii) Postnatal interventions

Debriefing following childbirth

Contents

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Gamble (2001)	A single debriefing session (non- directive counselling)	To reduce depression and trauma symptoms in women following birth.	Midwife.	One session whilst the woman is in hospital following birth.	Newly delivered women. Hospital setting.	Within 1 week of childbirth

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Gamble (2001)	Yes	RCTs	Yes	Yes	Effect sizes of individual studies	Confidence intervals	Yes	Uncertain - harms and/or costs not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Gamble (2001)	Three RCTs evaluating midwife led debriefing sessions for women following childbirth.	Measures of maternal depression.	Two of the three studies included in the review indicated that a single debriefing session with the woman whilst in the postnatal ward is of no statistically significant value in reducing psychological morbidity, and may even be harmful. In contrast, women reported that an opportunity to talk with someone about the birth was helpful and facilitated their recovery.	Insufficient evidence to draw conclusions about the effectiveness of debriefing following childbirth because it is unclear whether a standardised debriefing intervention was used.

Breastfeeding promotion

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Renfrew (2005)	Interventions to promote initiation or continuation of breastfeeding. Peer support programmes; professional support. Health education; combined health education and professional support; combined professional and peer support. Professional training; hospital practices; multisectoral interventions; media programmes; breastfeeding literature.	To promote initiation/ continuation of breastfeeding	Health professionals; peers/volunteers; media campaigns; multimodal.	Varied	Pregnant women, mothers of newborn infants and women who may decide to breastfeed in future. Variety of settings including home; clinic/hospital.	Women during ante-natal and/or postnatal period

Critical appraisal

Author (Year)	Focus of the review	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Renfrew (2005)	Effectiveness of interventions on initiation and/or continuation of breastfeeding.	Systematic reviews	Yes	Yes	Quantitative - Effect sizes, not combined	Sig. and CI not stated in this review.	Yes	Not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Renfrew (2005)	3 systematic reviews of interventions to promote breastfeeding (antenatal and postnatal period).. Studies include: health sector initiatives; training of health professionals; social support from health professionals; peer support; media campaigns; multifaceted interventions.	Primary outcome: initiation of breastfeeding. Secondary: duration and exclusivity of breastfeeding.	Three types of intervention have been shown to be effective in promotion of breastfeeding: Rooming in; promotion of skin to skin contact (kangaroo care) post-birth; skilled professional or peer support, offered proactively post-birth; prompt treatment of problems such as mastitis and cracked nipples. Interactive, discursive breastfeeding support groups One to one needs based support to women who have specific difficulties Interventions that involve peer support Combined interventions involving the above plus media campaigns and training of health practitioners.	The following are recommended: Breastfeeding education (including informal, practical discussion of prevention of nipple pain and trauma) to increase initiation and duration rates. In the immediate postnatal period: promotion of skin to skin contact; professional support available to mothers; breastfeeding-specific support available to women. Peer support programmes, particularly for low income women. Combined interventions; structural changes to maternity practices and training of health professionals; revision of good practice guidance on breastfeeding.

Kangaroo care/ skin-to-skin contact

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Conde-Aguedo (2003)	Kangaroo mother care – defined as: skin-to-skin contact between mother and newborn, frequent and exclusive or nearly exclusive breastfeeding for LBW infants discharged from hospital. KMC compared with standard hospital care for LBW infants.	To increase mother infant bonding and improve health and developmental outcomes of LBW infants.	Mothers guided by health professionals	Provided after the initial period of stabilisation for low birthweight infants. Duration and frequency not identified.	Mothers and infants with low birthweight (less than 2500g) regardless of gestational age, discharged from hospital. Intervention in hospital and home.	After initial conventional stabilisation period in hospital.
Moore (2007)	Skin-to-skin contact at birth.	Improved bonding and attachment, and initiation of successful breastfeeding.	Mothers guided by health professionals	Not specified.	Healthy mother-infant dyads Hospital setting	Immediately after delivery.

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Conde-Aguedo (2003)	Yes	RCTs	Yes	Yes	Meta-analysis	Confidence Intervals provided	Uncertain	Uncertain - harms and/or costs not assessed
Moore (2007)	Yes	RCTs	Yes	Yes	Meta-analysis	Confidence Intervals provided	Yes	Uncertain - harms and/or costs not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Conde-Aguedo (2003)	3 studies comparing early KMC with routine hospital care. All in developing countries.	Primary outcomes measured: Mortality; severe illness; infant growth; psychomotor development.	The majority of results consist of the results of a single trial. There is currently no sound evidence to support the use of KMC in low birthweight infants as an alternative to standard care after the initial period of stabilisation with conventional care. Concerns expressed over the quality of the trials included within the review.	Some evidence that KMC appears to reduce infant morbidity but insufficient evidence currently to recommend KMC as an alternative to hospital care for LBW infants.
Moore (2007)	30 studies comparing early SSC with routine hospital care.	Varied, including - breastfeeding duration; maternal affectionate love/touch during breastfeeding (observed); maternal attachment behaviour; length of crying time.	SSC may benefit breastfeeding outcomes, early mother-infant attachment, infant crying and cardio-respiratory stability, and has no apparent long-term or short-term negative effects.	SSC contact between mother and baby at birth reduces crying, improves mother-baby interaction, keeps the baby warmer and helps women breastfeed successfully.

Sensory and Perceptual Capabilities of Infant

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Das Eiden (1996)	Application of the Neonatal Behaviour Assessment Scale (NBAS).	To enable parents to become aware of infant's developmental and interactive capabilities and improve parental sensitivity/ responsiveness.	A trained examiner demonstrated NBAS or enabled parents to administer the procedure	Primarily single-session NBAS applications; 4 studies included in the review used repeated sessions.	Parents during the immediate postnatal period.	Postnatal.

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Das Eiden (1996)	Yes	Randomised and non-randomised controlled studies.	Yes	Yes	Meta-analysis	Confidence intervals	Yes	Uncertain - harms and/or costs not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Das Eiden (1996)	13 studies were included.	Measures of parenting quality/sensitivity.	Brazelton based interventions during the neonatal period have a small-moderate beneficial effect on the quality of later parenting.	Demonstrations or parental administrations of the NBAS with detailed explanations have a small to moderate effect on the quality of parenting.

Infant massage

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Underdown (2006)	Infant massage.	Physical and mental health of infants, improved adult-infant interactions.	Research associates; trained researchers; parents; trained group leaders; nurses.	Group duration weekly 45-60 minutes over 4 weeks, 5 weeks. Massage frequency; wide range from one 8 minute session, once; 30 minutes per day over 14 days; 15 minutes twice a day for 4 weeks; 10 minutes per day for 16 weeks; 5-7 minutes daily over 3 months; 15 minutes periods 3 times per day over 3 months.	Infants under 6 months, group based setting.	During first six months.
Vickers (2004)	Infant massage.	Growth and development of premature and low birthweight (LBW) babies.	Nurses or parents trained to massage infants.	In most studies babies were touched or stroked for about 15 minutes, three or four times a day, usually for five or ten days.	Infants born before 37 weeks gestation, or weighing less than 2500 grams. Setting; hospital and at home.	Postpartum for up to 10 days.

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Benefits greater than harms and/or costs
Underdown (2006)	Yes	RCTs	Yes	Yes	Meta-analysis	Confidence intervals	Yes	DK – not assessed
Vickers (2004)	Yes	RCTs	Yes	Yes	Meta-analysis	Confidence intervals	Yes	DK – not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Underdown (2006)	23 studies included. 13 of these analysed separately due to high risk of bias. Nine studies were included in the main analysis. Studies evaluated effectiveness of infant massage irrespective of the theoretical basis or cultural practice underpinning the massage.	Infant mental health (e.g. CARE-index) or on physical growth (e.g. growth monitoring).	9 included studies showed no effect of massage on infant growth, but provided some evidence of improved mother-infant interaction, sleep and relaxation, reduced crying and beneficial impact on stress-controlling hormones. No evidence of effects on cognitive and behavioural outcomes, infant attachment or temperament.	The only evidence of a significant impact of massage on growth was obtained from a group of studies regarded to be at high risk of bias. There was some evidence of benefits on mother-infant interaction, sleeping and crying, and on hormones influencing stress levels. In the absence of evidence of harm, these findings may support the use of infant massage in the community, particularly in contexts where infant stimulation is poor.
Vickers (2004)	14 studies of massage to promoting growth and development of preterm and/or low birth-weight infants	Weight gain; length of hospital stay; behavioural and developmental outcomes.	Massage interventions improved daily weight gain by 5.1g. There is no evidence that gentle still touch is of benefit. Massage interventions appeared to reduce length of stay in hospital by 4.5 days, though there are some methodological concerns about the blinding of this outcome. There was some evidence that massage interventions have a slight positive effect on postnatal complications and weight at 4-6 months. However serious concerns about methodological quality of the included studies weaken the credibility of these findings.	Evidence of beneficial effects is weak and does not warrant wider use of preterm infant massage. Where massage is currently given by nurses consideration should be given as to whether this is cost-effective use of nurse time.

Supporting fatherhood

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Magill-Evans (2006)	Range of interventions focused on supporting fathers during the ante/postnatal period and early years.	To promote positive parent- child relationships and optimal child development.	Health professionals; educators; self administered.	Ranging from one, one hour home visit; a series of daily/weekly/monthly sessions up to 10 sessions. Duration from one day to 8 months.	Fathers (not exclusively) of children <5 years old, predominantly middle class families, although 2 studies specifically addressed low income families. Clinic, community or home setting.	Antenatally. During infancy or early childhood

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Design of included studies	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Can the results be applied to the UK?	Do benefits outweigh harms and costs
Magill-Evans (2006)	Yes	RCTs, cohort studies, pre and post-intervention studies.	Yes	Yes	Narrative summary	No quantitative analysis	Yes	Not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Authors' conclusions
Magill-Evans (2006)	12 interventions (2 prenatal) including: Infant massage; observation and modelling behaviour; kangaroo care; participation with child in a pre-school programme; discussion groups; parent training programmes.	Few studies used the same outcome measures. Outcome measures were frequently developed for specific studies and there was limited information on reliability or validity of the measures.	Some interventions for fathers that involve active participation with, or observation of his child, enhance father-child interactions. Intervention is more likely to be effective if the father has multiple exposures to the intervention. More research is needed to determine the appropriate dose of effective interventions, their impact over time, and the differential impact of interventions with mothers and fathers.	More research is needed to determine the appropriate dose of effective interventions, their impact over time, and the differential impact of interventions with mothers and fathers.

Media-based parenting programmes

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Montgomery (2001)	Media-based versions of parenting programmes. Interventions delivered by means of audio, video, books, leaflets, computer-based programmes with and without telephone, face to face support by therapist and / or parent group. Majority of included interventions already had a strong evidence base.	Improvement of diagnosed child behavioural problems.	Self administered; health professionals/therapists; educators; unspecified.	Interventions with media-based resources only not timed; average 8 – 10 sessions involving therapist/group support for parents receiving a combination of media and personalised support.	Parents or caregivers of children with behavioural problems. The review evaluates media-based therapy, some are delivered or discussed in group settings. Treatment is generally self-administered in the home setting.	4 studies involving children aged 2+; majority focused on age 3 and over.

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Montgomery (2001)	Yes	RCTs	Yes	Yes	Meta-analysis	Confidence intervals	Yes	Not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Montgomery (2001)	11 media-based behavioural parent training to address a range of behavioural disorders including conduct disorder, sleep problems; bed wetting; ADHD.	Effect of intervention on diagnosed child behavioural disorders.	Impact on child emotional and behavioural problems and parent competence Media-based interventions effective without further intervention with a proportion of parents (estimated ¾ of the population surveyed in one study).	Media-based behavioural interventions are more effective than no treatment for children with behavioural problems and are recommended as part of stepped-care provision.

Group based parenting programmes for children under age 3

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Barlow (2004)	Group-based parent training programmes.	Improvement of emotional and behavioural adjustment of children.	Not specified.	8 - 10 weekly sessions, some provided additional home/telephone support.	One or both parents of child/ren age 1-3. Some interventions continued to child age 5.	Child aged 1- 3

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Barlow (2004)	Yes	RCTs	Yes	Yes	Meta-analysis.	Confidence intervals	Yes	Not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Barlow (2004)	5 group-based parenting programmes that used at least one standardised instrument to measure emotional and behavioural adjustment.	Infant/child emotional and behavioural adjustment.	The result for parent reported measures showed a non significant result favouring the intervention group. The results for independent observations of children's behaviour showed a significant result favouring the intervention group. A meta analysis of the limited follow-up data shows a small non-significant result favouring the intervention group.	The results provide some support for the use of group-based parenting programmes to improve the emotional and behavioural adjustment of children under 3 years of age. There is insufficient evidence to reach any firm conclusions about their role in the primary prevention of such problems. Long term data exploring effectiveness is limited; included studies showed findings of borderline significance.

Parenting programmes – Parents of young children with behavioural problems

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Nixon (2002)	Enhanced or modified parent training.	Change in child externalising behaviour; parent behaviour associated with the above.	Primarily therapists / trained educators. Some self-help programmes.	Wide ranging; variation on number of weeks from 6 weeks to 6 months. average 1-2 hour sessions.	Parents of pre-school children identified with conduct problems. Clinical setting; group setting; home setting - varied.	Pre-school, following identification of conduct problems

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Nixon (2002)	Yes	Randomised design with either control or comparative treatment group	Yes	No	No quantitative analysis	No measures of precision provided	Yes	Not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Nixon (2002)	Studies included: parent management training; parent-child interaction therapy; enhanced or modified parent training, e.g. focused on parent or on child specific factors; interventions delivered through telephone or video.	Child behaviour measures.	Parent management training and child specific interventions had significant effect on child behaviour and parent child interactions. Unclear results for training that addressed parent risk factors. PCIT increased compliance of oppositionally defiant children but mixed findings for long term effects. Insufficient evidence for effect of telephone and videotape delivered training due to small sample sizes.	Behavioural parent training, and enhanced training focused on child risk factors, for parents of preschoolers with behavioural difficulties can improve child externalising problems. However, this must be adapted to the context, as attrition tends to be highest among families with multiple problems.

Parenting programmes: Parents with learning difficulties/developmental delay

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Feldman (1994)	Parent training for parents with intellectual disabilities.	Improve parenting skills	Not identified.	Not identified.	Parents with IQs ranging from 50 - 79 (below normal level)	Not identified

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Feldman (1994)	Yes	Range of study designs	Yes; details of database searches not given.	Yes	Narrative summary	No quantitative analysis	Yes .	Not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Feldman (1994)	20 studies of parent training for parents with low IQ. The most common instructional approach was behavioural (e.g., task analysis, modelling, feedback, reinforcement) and focused on basic child-care, safety, nutrition, problem solving, positive parent-child interactions, and child behaviour management.	Parenting skills; child measures; family functioning.	The most successful interventions involved specific skill assessment using direct observational techniques, modelling, practice, feedback and praise, and were located in the home or a home-like environment rather than clinic settings.	Parent education that involves specific skill assessment, modelling, feedback and praise, in a home like environment, can lead to improvements in range of parenting skills and moderate improvements in child cognitive outcomes.

Parenting programmes – Mothers with drug addiction

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Suchman (2006)	Outpatient and home visit parenting interventions for drug abusing and Substance addicted mothers.	Improvement of child outcomes for infants/children with Substance addicted mothers.	Health professionals/ therapists.	Varied, including; weekly 2 hour sessions for 8 weeks; 2 weekly home visits from pregnancy to 18m postpartum; 2 weekly visits in first year postpartum and group sessions; 4 hours daily intervention based in high school.	Drug using/dependent mothers. Varied settings including clinic, community, school, home.	From birth to five years of age.

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Suchman (2006)	Yes	RCTs Quasi experimental designs also included.	Yes	Uncertain	Narrative summary	No quantitative analysis	Yes	Not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Suchman (2006)	Six studies included in the review. Four of these took a cognitive behavioural, psychoeducational curriculum-driven approach. Two adopted approaches emphasising relationship quality.	Parent outcomes included; attendance; drug use; parental adjustment. Parent-child outcomes included; maternal sensitivity; home observations; family relations	Cognitive behavioural parent skills training and advocacy programmes have not yet demonstrated measurable improvement in the quality of mother-child interactions or children's developmental outcomes in families affected by maternal drug use. Programmes that demonstrated the most promise focused on improving the quality of relationships between mother/child or mother/therapist.	Further research is needed on relational (attachment based) parenting programmes for drug dependent women and their young children.

Promoting child cognitive development

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Benasich (1992)	Educationally orientated early intervention programmes.	Intervention aim is to enhance child competence. However, this review explores the effects of programmes on the mothers, focusing on maternal outcomes.	Generally not reported, nurse practitioners mentioned in one study.	Varied duration but at least 6 months. Wide variation in frequency including; twice annually for the first 54 months; newborn period through to school entry; weekly meetings for seven months followed by tailored educational input over subsequent 8 month period; weekly 1 hour home visits for 9 months.	Largely focused on disadvantaged families, disproportionate focus on poor black families.	Beginning prior to age 3, through to school entry in some cases.
Regalado (2001)	Services provided in a general paediatric setting as part of routine well-child care and health supervision. Divided into four categories; assessment; education; intervention; care coordination.	Promoting optimal development in children from birth to 3 years of age.	Health and/or educational professionals; instructional videotapes; clinicians.	Very wide ranging, four different intervention types reviewed within this review.	Children age 0-3 in a routine paediatric setting.	Anytime between age 0-3 years.

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Benasich (1992)	Yes	RCTs and quasi-experimental controlled studies.	Yes	Yes	Narrative summary	No quantitative analysis	Uncertain	Uncertain - harms and/or costs not assessed
Regalado (2001)	Yes	Range of study designs	Yes	Yes	Narrative summary	No quantitative analysis	Uncertain	Uncertain - harms and/or costs not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Benasich (1992)	27 programmes reviewed. 11 offered regular centre-based programmes. 16 offered home visits and/or centre-based programmes.	Focus on maternal outcomes; maternal education and employment; subsequent fertility; observed mother-infant interactions; home environment; maternal mental health and self esteem; maternal attitudes/knowledge of child rearing.	The programmes had the most benefit on maternal employment and education, subsequent fertility, and on mother infant interaction. Maternal outcomes are often evaluated in early intervention studies but tend to go unreported. Intervention programmes do have the potential for immediate and long lasting benefits to disadvantaged families, over and above the benefits to children.	Positive changes in maternal outcomes may serve to ameliorate the effects of poverty and early childbearing, and thus have major implications for later family functioning. The findings suggest that families should continue to be the focus of early intervention programmes and that future evaluations should target and assess maternal benefits.
Regalado (2001)	47 studies of anticipatory guidance in paediatric settings, 3 of which focused on promoting early book sharing and reading among low SES minority families.	Child cognitive outcomes; promotion of early literacy; bedtime/ sleep routines	Significant differences in parents' reading to children, book sharing at bedtime, and better bed/bath/sleep routines.	Anticipatory guidance on book sharing/reading/bath, book, bed routines recommended.

Prevention of early problems

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Regalado (2001)	Services provided in a general paediatric setting as part of routine well-child care and health supervision. Divided into four categories; assessment; education; intervention; care coordination.	Promoting optimal development in children from birth to 3 years of age.	Health and/or educational professionals.	Very wide ranging, four different intervention types reviewed within this review.	Children age 0-3 in a routine paediatric setting.	Anytime between age 0 – 5 years.

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Regalado (2001)	Yes	Range of study designs	Yes	Yes	Some significance levels provided within the narrative summaries.	Significance levels provided In some instances.	Uncertain	Uncertain - harms and/or costs not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Regalado (2001)	47 studies, 10 of which evaluated temperament-based anticipatory guidance, promotion of healthy sleep; reduction of child exposure to violence (TV viewing) or promotion of alternatives to physical punishment.	Self-reported parent responsiveness to child temperament; parenting satisfaction; anxiety; Child bedtime/ sleep routines; Infant night waking Child exposure to TV; disciplinary practices;	Parents self-reported increased understanding of child temperament; effect on behaviour unclear; Effective promotion of child sleep Improvements with mild, but not severe, sleeping problems Effective in promoting non-violent discipline but not in reduction of TV viewing	Anticipatory guidance in healthcare settings recommended on sleep habits, discipline, and promoting child cognitive development (see above). Further research needed on temperament based AG. There is also a need to develop more specified service-delivery pathways to improve the feasibility of wide-scale implementation. Wide-scale, multi-site effectiveness research is needed.

Identification / treatment of postnatal depression /anxiety

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Dennis (2004)	Psychological and psychosocial interventions to prevent and treat postpartum depression	Prevention of postpartum depression.	Health professionals/ therapists or paraprofessionals.	Interventions ranged from one debriefing session to treatment over several months.	Pregnant women and new (less than six weeks postpartum) mothers, including those at no known risk, and those identified as at risk to develop postpartum depression. Setting; delivered via telephone, home or clinic visits, individual or group sessions.	Antenatally and/or postnatal during first month after month.
Gjerdingen (2003)	Group therapy/individual therapy and nurse home visiting for postnatal depression[1];	Treatment of postnatal depression.	Health professionals/ therapists or paraprofessionals.	Intervention duration and frequency Drug treatments; varying according to diagnosis needs. Therapeutic interventions; weekly sessions approx 1 hour duration ranging from 4 to 12 weeks.	Mothers diagnosed with postpartum depression. Clinical setting (drug treatments); individual/ group setting; home visits.	Following diagnosis of postpartum depression.
NICE (2007)	Psychological and psychosocial interventions for prevention / treatment of depression in the antenatal and postnatal period.[2]	Identification and treatment of mental health problems including anxiety and depression in the ante/postnatal period.	Health professionals/ therapists or paraprofessionals..	Varied. See full report.	Women with, or at risk of mental health problems in the ante/postnatal period.	Antenatal and/or postnatal period.

[1] Review includes pharmacological treatments and alternative treatments which are beyond the scope of this study.

[2] NICE systematic review/ guidelines also cover pharmacological treatments, and prevention / treatment of a range of mental health problems including psychosis, schizophrenia which are beyond the scope of this study.

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Dennis (2004)	Yes	RCTs	Yes	Yes	Meta-analysis	Confidence Intervals	Yes	Uncertain - harms and/or costs not assessed
Gjerdingen (2003)	Yes	Range of study designs	Yes	Yes	Narrative summary	Percentage change; some significance levels of individual studies.	Yes	Uncertain - harms and/or costs not assessed
NICE (2007)	Yes	RCTs, cohort studies, non-randomised controlled trials.	Yes	Yes	Effect sizes	Confidence intervals	Yes	NICE (2007) Antenatal and postnatal mental health. London: National Institute for Clinical Excellence.

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Dennis (2004)	15 trials included. Types of studies; comparing standard or usual care with a variety of non pharmaceutical interventions including; psychoeducational strategies; CBT; interpersonal psychotherapy; non directive counselling; various supportive interventions.	Maternal outcomes relating to depression. Infant health and developmental outcomes.	Psychological and psychosocial interventions compared with usual care provided antenatally or postnatally do not reduce the risk of postpartum depression.	Whilst no clear beneficial effects in the prevention of postpartum depression was found, intensive professionally based postpartum support may be helpful. Individually based programmes appeared to be more beneficial than group based programmes. Interventions targeting 'at risk' mothers may be more beneficial than those targeting general population.
Gjerdingen (2003)	7 studies of individual or group psychotherapy, 2 studies of nurse home visits	Maternal depression.	Evidence for effect of individual psychotherapy; 1 trial showed value of including partner in psychotherapy sessions; mixed results for group therapy. Evidence of effect of nurse / midwife home visiting.	Individual psychotherapy and listening visits (nurse home visiting)can improve postpartum depression; evidence for group treatment mixed. Treatments should be combined with patient education about the illness, the treatment selected, and other mechanisms for promoting health such as social support and a healthy lifestyle.

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
NICE (2007)	8 studies on the predictive value of the Edinburgh Postnatal Depression Scale (EPDS). 16 studies of psychological and psychosocial treatments of populations at identified risk. 16 studies of psychological and psychosocial interventions aimed at preventing mental health disorders for women at no identified risk. . 6 studies of treatment focussed on mother-infant interaction.	Maternal mental health, maternal-infant interaction.	No screening/assessment method has strong positive predictive value. However, the use of 3 brief questions are not less reliable than the longer EPDS scale, are less expensive, can be used in the ante- and postnatal periods and appear to be more acceptable to women. Some evidence that psychosocial interventions to prevent the onset of depression are effective with women at risk, particularly those who have sub-threshold symptoms of depression/anxiety. No evidence that such interventions are effective with women at low risk. Brief psychological treatment e.g. interpersonal psychotherapy or CBT effective in alleviation of symptoms of depression/anxiety. Very little evidence of differential effectiveness. Good evidence for individual therapy; mixed results for group treatment. Some evidence that dyadic interventions (parent-infant psychotherapy) can improve parent-child interaction in parents with depression in postnatal period (see below).	2 – 3 question assessment for depression. Women requiring psychological treatment should be seen for treatment normally within 1 month of initial assessment, and no longer than 3 months afterwards. Psychosocial interventions (psychoeducation, home visiting) for women with sub-threshold symptoms and at identified psychosocial risk CBT, interpersonal therapy or non-directive counselling delivered at home (listening visits) for treatment Dyadic treatment to improve parent-child interaction in women with depression in the postnatal period

Promotion of maternal sensitivity/infant attachment

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Bakermans-Kranenburg (2003)	Parent training and family interventions aimed at improving sensitivity and attachment.	Improvement of maternal sensitivity and infant attachment.	Health professionals/ therapists or paraprofessionals.	Duration range between <5 sessions to >16 sessions. Frequency not reported.	Vulnerable, high risk psychosocial or preterm or clinically referred.	Antenatal and/or postnatal.

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Bakermans-Kranenburg (2003)	Yes	Range of study designs	Yes	Yes	Meta-analysis	Confidence Intervals	Uncertain	Uncertain - harms and/or costs not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Bakermans-Kranenburg (2003)	70 studies describing 88 interventions on parental sensitivity or infant attachment.	Sensitivity outcome measures; Ainsworth/Erickson, HOME, NCATS, other. Attachment outcome measures; Strange Situation Procedure, Attachment Q sort (mother or trained advisor); other.	Randomised interventions appeared more effective in changing insensitive parenting and infant attachment security. The most effective interventions used a moderate amount of sessions and a clear cut behavioural focus in families with and without multiple problems.	Interventions that were more effective in enhancing parental sensitivity were also more effective in enhancing attachment security which supports the notion of a causal role of sensitivity in shaping attachment. Interventions with an exclusively behavioural focus on maternal sensitivity appear to be the most effective not only in enhancing maternal sensitivity, but also in promoting children's attachment security.

Parent-infant and infant-parent psychotherapy

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Doughty (2007)	Parent training or educational programmes; group based parenting programmes; home visiting with clearly identified parent training component; dyadic therapies including video-feedback.	Promoting attachment between young children and their parents.	Health professionals/therapists or paraprofessionals	Wide range of interventions	Infants and children aged 0-4 Parents or primarily caregivers of sample children. Setting; community (home or clinic).	Between age 0-4

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Doughty (2007)	Yes	RCTs	Yes	Yes	Effect sizes, not combined	Significance levels of individual studies; meta-analysis of 2 secondary studies.	Yes	Uncertain - harms and/or costs not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Doughty (2007)	Two secondary studies and 18 primary studies.	Key socio-emotional outcomes relating to the relationship with the maternal parent must have been reported in either of the following categories; 1.parental sensitivity or responsiveness to infant needs 2.infant parent attachment security.	Effective interventions that do not always use a large number of sessions and have fewer contacts may be more effective. Behaviourally focused interventions delivered one-to-one with mothers are effective. Changes in attachment security reported were generally in a direction consistent with attachment theory, but modest. Less broad interventions that target sensitive maternal behaviour are among the most successful both at improving insensitive parenting and promoting better infant attachment security. Infant-parent psychotherapy shows some promise, while group educational interventions generally do not.	A variety of types of intervention for enhancing maternal sensitivity, and to a lesser extent attachment security are effective, with nearly all of the different approaches involving home visiting to deliver the intervention.

Promoting mental health of children and families

Content

Author (Year)	Intervention(s reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Barnes (2002)	Interventions that involve t i) enhancing bonding, ii) highlighting infant skills; iii) psychodynamic psychotherapies; iv) attachment based work; v) developmental guidance; vi) interactional guidance; vii) transactional interventions; viii) infant led psychotherapy; ix) community based supports; x) community development aimed at reducing ecological risk factors xi) parent training;	Enhancing children's behavioural or emotional development, parent and/or family wellbeing.	Health workers, paraprofessionals, social and educational services.	Wide variation, from pregnancy to early childhood.	Primarily parents/children at some demographic and/or psychosocial risk. Some universal interventions in home, community, centre and/or clinic settings, group based and individual.	Antenatal and/or postnatal; early years.

Critical review

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Barnes (2002)	Yes	Range of study designs	Yes	No	Summary of effect of individual studies	Narrative summary	Yes	Not assessed.

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Barnes (2002)	90 studies focused on promoting mental health of families / children, primarily focused on those at high risk.	Infant health, developmental and emotional outcomes; maternal, paternal emotional and psychological functioning; parenting sensitivity; parenting skills; parent-child interaction.	See conclusions	Recommendations include; 1. Targeting at risk communities, or first time parents may be more effective than universal service provision. 2. Incentives to ameliorate attrition may be effective. 3. No single approach will be appropriate for all. Understanding levels of risk, and goals is the key. 4. A range of services is needed to work with children, parents and parent-child pairs, or family groups. 5. Videofeedback/ interactional guidance is an effective component of dyadic work. 6. High risk families benefit from lay workers and professionals working together and sharing decision making. 7. Pre and postnatal interventions are both effective, with weekly contact continuing through the first year. 8. A smaller high intensity intervention package is more likely to be effective compared with a large number of low intensity components.

Parenting programmes – obesity reduction in infants

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Bluford (2007)	Interventions focused on increasing physical activity, reducing sedentary behaviours (e.g. TV watching) and/or nutritional strategies to prevent or treat child obesity.	Weight reduction or prevention of obesity.	Health professionals including dietician, nutritionist And/or PE instructor working either with parent, parent and child, or child alone. Unspecified in some instances.	Varied from 10 to 39 weekly sessions, with up to two years follow-up.	Children between 2 and <6 years of age. and their parents. Interventions in home, community, centre and/or clinic settings	Varied
Campbell (2007)	Primarily multi-level, intensive interventions.	To prevent obesity through the promotion of healthy eating and/or physical activity, or reduced sedentary behaviours in 0-5yr old children.	General health service providers; nutritionist/dieticians. Unspecified in majority of studies.	Wide variation in duration and frequency, depending on mode of delivery. Ranged from; media-based information provision; weekly, monthly or bimonthly home visits; six group meetings plus two individual contacts; 1-3 month intervals; 3x40 minute sessions for 14 weeks.	Children aged 0- 5 years of age. Most studies targeted socio-economically at risk families. Family/home based; group based; primary care based; preschool/childcare centre based; mixed settings.	Varied
Tedstone (1998)	Interventions aimed at promotion of healthy eating targeted at: preschool children; educators; parents.	To promote health eating by 1-5 year olds.	Interventions that targeted parents involved individual and group based advice in home, childcare and/or clinic settings.	Nutrition education using face to face contact and/or media.	Targeted children age 1-5, or parents/primary caregivers. Preschool and/or home settings.	Varied

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Bluford (2007)	Yes	RCTs, assigned intervention/control trials, pre-post test cohort studies	Yes	Yes	Effect sizes, not combined	Confidence intervals or significance levels	Uncertain as some studies focused on US minority groups. 2 studies from Thailand and Singapore.	Not assessed.
Campbell (2007)	Yes	Range of study designs	Yes	Yes	Meta-analysis	Significance levels	Uncertain as some studies focused on US minority groups.	Not assessed.
Tedstone (1998)	Yes	Range of study designs	Yes	Yes	Individual test statistics Narrative summary - no data	Significance levels provided in some instances.	Uncertain as some studies focused on US minority groups.	Not assessed.

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Bluford (2007)	Seven studies included; treatment programmes and prevention programmes.	Primary outcomes; weight status, BMI or body fat.	Four of the seven studies documented significant reductions in body fat or weight status. Multi-component programmes with 1-2 year follow up in clinics or child care settings were successful in their impact on weight, and were likely to be enhanced by parental involvement. Three of these incorporated a framework/theory, and all four monitored behavioural changes. Other significant changes reported were reductions in TV viewing, cholesterol, and parental restriction of child feeding.	Limited evidence suggests the value of interventions involving parents which are grounded in behavioural theory. Since obesity has a variety of causes, a multicomponent intervention programme, focusing on more than one strategy, in a variety of settings, and involving parents and other adults including teachers is recommended. However, further research is needed, including assessment of different intervention durations, longitudinal effects and the comparative value of interventions among different racial/ethnic groups.
Campbell (2007)	Nine studies involving multi-level, intensive programmes, primarily focused healthy diet/exercise patterns.	Dietary, physical activity, sedentary behaviours.	Nine included studies varied widely in their objectives, designs and subsequent quality. Overall most studies were able to show some level of effectiveness on some obesity-promoting behaviours in children. A number of methodological issues, such as lack of sample size calculations limited the ability for the reviewers to accurately interpret the impact of the included studies.	Some evidence that parents are receptive to, and capable of, behavioural changes that may promote healthy weight in their young children. Given the potential for early intervention to have long lasting impacts upon individual and population health, authors recommend building the evidence base further.
Tedstone (1998)	2 trials of interventions targeted at parents in childcare or community settings.[158]	Biomedical, anthropometric and dietary indices. Knowledge, attitudes, food choice and food behaviour.	1 study of clinic and home based advice to mothers on diet and meal planning reported improvements in both after 4 – 5 months. Weak design of the trial limits reliability of findings. 1 study of group based training and additional supports to low SES mothers with children in Head Start in 2 US cities programmes showed some effect on dietary habits but that these effects differed between the two groups. Authors speculate that demographic differences between participants affected the outcome.	There is limited evidence that intensive and personalised interventions can improve meal planning and preparation or reduce poor nutritional habits. Further UK based trials are needed.

Smoking cessation and reduction - postnatal

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Arborelius (2000)	Counselling; self help manuals; parent/community groups; home visits.	To protect infants and small children from exposure to tobacco smoke.	Paediatrican; nurse; Not identified for the majority of studies.	Not identified routinely. Where identified; ranging from brief counselling during developmental checks at 6 wks, 3 yrs and 4 yrs; to a few minutes counselling during first 6 months; to 4 home visits approx 45 minutes during the first 6 months.	Pregnant women or new mothers who smoke. Clinic, group and home setting.	Antenatal or postnatal.
Park (2004)	Enhancing partner support to improve smoking cessation	Smoking cessation.	Health professionals: peer counsellors;	Cessation techniques included nicotine gum, psychotherapy, television programmes, self-help manuals, group meetings, and/or quitting guides. Partner support interventions included empathy exercises, video tapes, strategy booklets, group meetings with support manuals, monitoring booklets, behavioural technique sessions, social support guides, telephone calls from a counsellor, and/or a telephone contact system	Partners of smokers; smoking cessation 'buddies'; colleagues.	Interventions are not specifically for parents of young children.
Roseby (2003)	Family and carer smoking control programmes for reducing children's exposure to environmental tobacco smoke.	Reducing children's exposure to tobacco smoke.	Parents (in interventions involving children aged 0 – 6)	Smoke-free policies and legislation, health promotion, social-behavioural therapies, technology, education and clinical interventions	Parents and caregivers who smoke near children.	Postnatal

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Arborelius (2000)	Yes	mixed study designs	Yes	Not stated	Narrative summary - no	No measures of precision	Yes	Not assessed.

					data			
Park (2004)	Yes	RCTs	Yes	Yes	Quantitative - meta-analysis	Confidence intervals	Yes	Not assessed
Roseby (2003)	Yes	RCTs	Yes	Yes	Quantitative - meta-analysis	Confidence intervals	Yes	Not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Arborelius (2000)	Number of included studies not identified. All studies included pre and post intervention measures, the majority but not all were RCTs.	Primary outcomes were smoking cessation or continued smoking.	Postnatally the intervention with strongest effect is client-centred, underpinned by self-efficacy theory and delivered using home visits to promote smoke free environments for children. Information provision along has not been shown to be effective.	Further studies are needed of different types of interventions aimed at smokers with small children, before specific recommendations can be given regarding tobacco-preventative work in relation to child healthcare.
Park (2004)	10 trials of interventions that compared with and without an adjunctive partner support component	Smoker's self reported abstinence; biochemical measures.	No evidence found of increase in smoking cessation rates in programmes that involved partner support.	No conclusions can be made about the impact of partner support on smoking cessation
Roseby (2003)	18 trials of programmes to reduce children's exposure to environmental tobacco smoke. 9 studies involved children in infancy and preschool.	Changes in parents' smoking behaviours (eg smoking cessation); biological verification of exposure to or absorption of ETS	2 of 9 trials involving parents of children aged 5 or below produced robust evidence (including biological verification) of reduction in children's exposure to nicotine smoke. Both interventions had a behavioural orientation and involved 1 session of face to face motivational counselling / interviewing followed by a few sessions of brief telephone counselling.	Brief, behavioural interventions are recommended as part of parents' routine health care.

Multimodal interventions/enhanced home visiting for young mothers

Content

Author (Year)	Intervention reviewed	Intervention aim	Intervention delivery	Intervention frequency and duration	Intervention target and setting	Timing
Akinbami (2001)	Teen-Tot programme; a comprehensive clinical programme for teenage mothers and their children.	To prevent poor outcomes for teenage parents and their children. Typically these programmes offer health care, family planning, counselling, help with education, parenting advice and social support.	Health care workers.	Each programme limited duration of participation either by infant or maternal age (no further details reported). High attrition rates were reported.	Targeted to teenage mothers. Setting in hospital clinics, or urban academic centres.	Delivered postnatally (not mentioned if there was an antenatal component); evaluation continued until infants reached 18 months
Doughty (2007)	Parent training or educational programmes; group based parenting programmes; home visiting with clearly identified parent training component; relationship based interventions.	Promoting attachment between young children and their parents.	Wide range including; child health nurse; lay women; therapist; paraprofessional home visitors;	Very varied. See report.	Infants and children aged 0-4 Parents or primarily caregivers of sample children. Setting; community (home or clinic).	Between age 0-4
Letourneau (2004)	Parenting and other types of intervention designed to provide support to young parents including; Informational support; social support; videotape instruction; parenting workshops/groups; family counselling; affirmational support.	To provide support to young parents - educational, social, parenting. Varied. The review is not entirely focused on efficacy of interventions, it also explores other sources of support including family and partner provided support.	Professionals; social workers; nurses; lay workers and volunteers; paediatrician; therapists.	Wide ranging including; 3 sessions per week for 8 weeks (group and one-to-one); 4 sessions on alternate weeks (group); weekly mentor contact; Duration from 4 weeks to 4 years.	Adolescent mothers/parents. Variety of settings including home, community, school.	During the early years. Not specified in most cases

Critical appraisal

Author (Year)	Review addresses a clearly focused question	Type of studies included	Comprehensive search undertaken	Quality of included studies assessed	What results are presented?	Precision of results	Applicable to UK settings	Do benefits outweigh harms and costs
Akinbami (2001)	Yes	Longitudinal evaluations	Yes	No	Narrative summary	No measures of precision provided	Uncertain	Uncertain - harms and/or costs not assessed
Doughty (2007)	Yes	RCTs	Yes	Yes	Quantitative - Effect sizes, not combined	Significance levels	Yes	Uncertain - harms and/or costs not assessed
Letourneau (2004)	No	Range of study designs	Yes	No	Summary of effects of individual trials	No measures of precision provided	Uncertain	Uncertain - harms and/or costs not assessed

Results

Author (Year)	Included studies	Outcomes measured	Results	Author's conclusions
Akinbami (2001)	Four studies were included. These evaluated comprehensive programmes of care including a clinical component as well as social and parenting support.	Outcomes included: data on repeat pregnancies and school drop out; infant and teen health; teenager's parenting skills/practices.	Moderate success reported in preventing repeat pregnancies, helping teen mothers to continue their education and improving teen and infant health over 6 to 18 months. However, evaluations had limitations that may have reduced or accentuated observed effectiveness.	Teen-Tot programmes will continue to face the challenges of sustaining adequate long-term interventions and evaluations, as well as reducing the high attrition rates among programme participants. Increased funding and support for these programmes, and more complete evaluations are warranted.
Doughty (2007)	Two secondary studies and 18 primary studies. Two systematic reviews were identified and discussed.	Key socio-emotional outcomes relating to the relationship with the maternal parent must have been reported in either of the following categories; 1.parental sensitivity or responsiveness to infant needs 2.infant parent attachment security.	Results suggest that the most effective interventions do not always use a large number of sessions with families, fewer contacts may be more effective. Behaviourally focused interventions delivered one-to-one with mothers are useful and effective. Changes in attachment security reported were generally in a direction consistent with attachment theory, but modest. Less broad interventions that target sensitive maternal behaviour are among the most successful both at improving insensitive parenting and promoting better infant attachment security. Infant-parent psychotherapy shows some promise, while group educational interventions generally do not.	Overall, evidence from primary and secondary research suggests that a variety of types of intervention for enhancing maternal sensitivity, and to a lesser extent attachment security are effective, with nearly all of the different approaches involving home visiting to deliver the intervention.
Letourneau (2004)	19 interventions were included in the review; one-to-one, group based and home visiting interventions. Described as 'support-education intervention programmes'. Other types of informal intervention were also considered including family and partner support, and other support resources.	Measures of social support; contraceptive knowledge/behaviour; employability; parental confidence and psychological wellbeing; parenting skills/knowledge; child health and development measures.	Data revealed that typical sources of support for adolescent parents are families, partners and friends, and to a lesser extent, professionals. Evaluation of existing studies is hampered by problems such as small sample sizes and attrition, lack of suitable comparison groups and measurement inconsistencies. Largely a narrative review.	When planning support-education interventions, content, duration, intensity, mode, level, intervention agents and targets should be considered. Future research must address these challenges.

Appendix 2 Included studies

Reviews

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Appendix 3 Critical appraisal of individual studies

Name	Type of study	Clear focus	Allocation to groups	Coder blinding	Accounting	Follow up	Levels of precision
Abramson, 2007	Qualitative	Yes	No	No	Not reported	Not reported	None
Anisfeld, 1990	RCT	Yes	Yes	No	Yes	Yes	significance levels
Cox, 1991	Quasi experimental controlled	Yes	No	Yes	Yes	Yes	percentages
Cicchetti, 1999	RCT	Yes	Yes	No	Yes	Yes	significance levels
Cohen, 1999	Two group comparison	Yes	Yes	No	Yes	Yes	significance levels
Cox 1990	One group pre/post	Yes	No	Yes	Yes	Yes	significance levels
Davis, 2005	Quasi experimental multi site controlled	Yes	No	Yes	Not reported	Yes	significance levels
Diemer, 1997	Quasi experimental controlled	Yes	No	No	Yes	Yes	significance levels
Egeland, 1990	RCT	Yes	Yes	No	Yes	Yes	significance levels
Evangelou, 2003	Quasi experimental controlled	Yes	No	No	Yes	Yes	significance levels
Ickovics, 2003	Non randomised controlled.		No	No	Yes	Yes	significance levels
Ickovics, 2007	RCT	Yes	Yes	Yes	Yes	Yes	confidence intervals
Lieberman, 2005	RCT	Yes	Yes	Yes	Yes	Yes	significance levels
Lieberman, 2006	RCT	Yes	Yes	Yes	Yes	Yes	significance levels
Madigan, 2006	One group pre/post	Yes	No	Yes	Yes	Yes	significance levels
Matthay 2004	RCT	Yes	Yes	Not clear	Yes	Yes	significance levels
Mayer, 2005	Qualitative	Yes	No	No	Not reported	Not reported	None

Midmer, 1996	RCT	Yes	Yes	Can't tell	Yes	Yes	significance levels
Mills, 1996	Two group comparison	Yes	No	Yes	Yes	Yes	significance levels
Osofsky, 2007	Quasi experimental multi site controlled	Yes	No	Yes	Yes	Yes	significance levels
Papadopolou, 2005	Quasi experimental multi site controlled	Yes	No	Yes	Not reported	Yes	significance levels
Parr, 1998	Non randomised controlled.	Yes	No	Yes	Not reported	Yes	narrative summary
Puura, 2005	Quasi experimental multi site controlled	Yes	No	Yes	Not reported	Yes	significance levels
Robert-Tissot, 1986	RCT	Yes	Yes	Yes	Yes	Yes	significance levels

Appendix 4 Progressive Universalism

ANTENATAL PERIOD					
TARGET	**INTERVENTION**	**LEVEL OF PROVISION AND STRENGTH OF EVIDENCE**	**RESULTS**	**COST IMPLICATIONS**	**PROPOSED RECOMMENDATIONS**
PREPARATION FOR CHILDBIRTH/PARENTHOOD					
Antenatal classes – preparation for childbirth/parenthood	Parenting programmes with a range of designs, parenting programmes, primarily delivered by health practitioners.	1 Cochrane review, of 9 studies. 3 focused exclusively on pregnancy and childbirth, 6 included a postnatal/ preparation for parenthood component	No conclusive results.	No information on costs.	Recommend use of antenatal group-based parenting programmes to promote attachment and parenting skills, as per NICE guidance (see parenting programmes, below)
	Clinic based antenatal classes with adjunctive components for mothers at high risk	1 RCT (2 studies) included on expert advice	Better prenatal knowledge and preparation for childbirth/parenting roles. Intervention aimed primarily at reducing preterm birth		

	Father-focused perinatal classes compared to standard antenatal classes	1 quasi experimental study included on expert advice[159]	Significant improvements in fathers' involvement in partner support and involvement with infant postnatally.		
Breastfeeding initiation	Group, interactive, culture-specific education sessions	Universal and targeted (1 review; 1 review of reviews[160])[161]	Evidence of effectiveness	Further work is required to more fully clarify cost-effectiveness issues surrounding infant feeding. The DH has calculated that the NHS could save £10 for every extra mother who breastfed due to the reduction in child onset diabetes mellitus and £35 million each year in treating babies with gastroenteritis (DoH 1995). However, the basis for such calculations is preliminary and speculative.	Group classes on breastfeeding in the antenatal period; peer support schemes (such as 'Best/Breast/Bosom Buddy') using local experienced breast feeders as volunteers In antenatal period; multimodal education/social support programmes combined with media campaigns As per HDA guidelines.
	Group education sessions on positioning and attachment		Promising but limited evidence to date		
	Antenatal education individually tailored to the needs of low-income women		Promising but limited evidence to date One to one education may be more effective with low SES women who are unsure about breastfeeding.		
	Self-help manual used alone		No evidence of effectiveness		
	Antenatal education by a paediatrician		No evidence of effectiveness		

	Providing materials produced by formula milk companies on infant feeding in early pregnancy		Evidence that this may inhibit breastfeeding initiation		
	Conditioning nipples in pregnancy		Evidence that this may inhibit breastfeeding initiation		
	Hoffman's exercises for inverted and non-protractile nipples in pregnancy		Evidence that this may inhibit breastfeeding initiation		
	Breast shells for inverted and non-protractile nipples in pregnancy		Evidence that this may inhibit breastfeeding initiation		
Parenting programmes that focus on the transition to parenthood	Preparation for parenthood programmes that included	1 Cochrane review, of 9 RCTs. 6 included a postnatal/preparation for parenthood component[162]	No consistent effects.	No information on costs	Recommend use of antenatal group-based parenting programmes to promote attachment and parenting skills, as per NICE guidance
	Parenting programmes with a range of designs, parenting programmes, in clinic or community settings, focused explicitly on the transition to	Universal and targeted (range of studies in 1 review[163])	Reduced postpartum anxiety; less rigorous evidence shows support for a range of outcomes		

	parenthood e.g. infant-parent relationship etc Parenting programmes focused on increasing partner communication and decreasing anxiety in second and third trimester. Clinic-based, structured group parenting programmes aimed at enabling greater provide-patient interaction, address clinical, psychological and behavioural factors and enable peer and social supports. Attachment based parenting programmes - PIPPIN which begins antenatally	1 RCT[164] Targeted – low-income women under 25, with normal pregnancies (2 good quality RCTs included on expert advice).[165] Universal - 1 nonrandomised controlled trial in 1 review[166]	Significant lower anxiety and improved dyadic adjustment in intervention group. Significantly lower preterm birth compared to standard care, significant improvement in prenatal knowledge, preparation for labour and delivery, initiation of breastfeeding and greater satisfaction with care. Mixed results on infant birth weight. Increased parental wellbeing, confidence, lowered risk of anxiety/depression, better couple and parent-child interaction post-partum	Group treatment resulted in equal or higher gains than individual clinic-based support at no added cost. Reduction in preterm births has cost implications, given high cost of care of premature infants.	
Fatherhood promotion: interventions with men only	Interventions to support fathers:	Universal 1 review with 2 weak to moderate quality studies on antenatal interventions (3 trials)[167]		No detailed cost information	Recommend antenatal preparation and skill-training should be offered to fathers to help adjust to their new role and responsibilities as per NICE guidance

	Father focused discussion groups compared to traditional antenatal classes 'Preparation for Parenthood' antenatal classes, with and without enhanced sessions on play with babies. Antenatal classes with an enhanced component for fathers, continuing postnatally Individualised antenatal guidance on how to respond to infants, using infant training dolls	Targeted 1 RCT[168] Quasi-randomised controlled study included on expert advice[169] 1 quasi-experimental study (2 papers);[170] 1 small scale pre and post intervention study[171]	Significant increase of reasoning during partner conflicts and share of household tasks. Both groups associated with improved maternal satisfaction with men's involvement in domestic and care tasks. No other main effects. Moderately significant father sensitivity in infant feeding postnatally Increase in observed infant stimulation activities postnatally		
Smoking reduction and cessation	Smoking prevention – Counselling; self-help manuals; patient-centred customised counselling; counselling, groups and home visits, and practical support	Targeted (5 good quality reviews) [172]	Behavioural training and media-based information effective in reducing smoking; most effective if it begins in pregnancy and includes rewards plus social support, based on 2 trials. Interventions using motivational one-one interviewing, based on 'stages of change' were not effective.	Cost benefit of all successful smoking prevention programmes can be inferred from studies on costs of smoking to public health. 2 studies appear to report on cost benefit of smoking cessation: Ershoff 1983 Windsor 1983 in	Targeted behavioural therapy based on self-help manuals; motivational interviewing/motivational interventions. Group sessions which offer combination of 'rewards plus social support'.

				Lumley; Windsor 1983 in Arborelius However, cost effectiveness of different interventions is not analysed in either review.	
IDENTIFICATION OF NEED/PROBLEMS					
Identification of need	Promotional Interviewing, (European Early Promotion Project) = home visiting plus two structured interviews 1 month before and 1 month after birth to assess for risk.	Universal (1 large-scale non-randomised study[173])	Evidence to support significant improvements in knowledge and perceived self-efficacy, and significant improvement in accuracy of need identification in families. Significant differences in children's psychological adaptation and family development.	No detailed cost information.	Recommend promotional interviewing be used to identify women in need of further support during the ante- and post-natal period

PREVENTION/TREATMENT OF COMMON MENTAL HEALTH PROBLEMS					
Identification and treatment of depression	Edinburgh Postnatal Depression Scale (EPDS) vs use of 2 – 3 questions on mood, motivation and desire for help. Support groups/CBT/Interpersonal psychotherapy for anxiety/depression	Universal (NICE guidelines) Targeted – depression NICE guidelines and 1 review[174]	EPDS and 2 – 3 questions have reasonably strong negative, but limited positive, predictive value. i) Prevention No evidence that either psychosocial or psychological interventions can reduce the number of women at low risk who develop depression. Some evidence of effect for women with sub-threshold symptoms of depression and anxiety. ii) Treatment Good evidence to support talking therapies, increasing midwifery antenatal preparation and extended supportive postnatal care Relationships that have been fostered in pregnancy are valuable for women and their families where there is mental dysfunction.	Detailed information of costs in NICE guidelines.	In the absence of more effective assessment tools, NICE recommends the use of 2 – 3 questions in ante and postnatal periods. Use of EPDS may be considered by practitioners. Prevention Do not recommend the use of psychosocial interventions to prevent postnatal depression as per NICE guidance. Treatment Recommend the use of brief (4-6 weeks) psychological treatments (such as IPT or CBT) for women with previous episodes of non-clinical symptoms of depression and anxiety as per NICE guideline. Recommend social support (individual or group-based) for women who have not had a previous episode of depression or anxiety as per NICE guideline.

	Home visiting	1 review of reviews[175]	Moderate effects of HV on antenatal anxiety and depression		

SUPPORTING FAMILIES AT RISK					
Domestic abuse	Identification of domestic abuse	2 good quality reviews [176]	Valid assessment tools for use by health workers identified. Identification using a single question as effective as multiple questions.	No detailed cost information	Identification of domestic abuse in healthcare settings as part of routine antenatal care. Women should have opportunity to discuss concerns in a secure environment and be referred to specialist services as part of an interagency network.
	Psychosocial interventions, including care in shelters, counselling of women domestic abuse	1 good quality review [177]	Insufficient evidence of effectiveness of psychosocial interventions in healthcares settings psychosocial and physical health of women screened for domestic abuse.		Urgent research needed on effectiveness of psychosocial interventions for women and for perpetrators of violence. See DH guidelines on domestic abuse.[180]
	Counselling / treatment of male perpetrators of domestic abuse	1 good quality reviews;[178] 1 non-systematic review;[179]	Insufficient evidence of effectiveness of counselling/group treatment of male perpetrators of domestic abuse at any point, including antenatal and postnatal period.		
Alcohol abuse	No systematic reviews of alcohol treatment were found that focus specifically on the postnatal treatment,	1 systematic review of Motivational Interviewing (MI) to encourage cessation of drinking in pregnancy[181]; studies involved women with a wide range of	Significant effect of MI in motivation of women to cease drinking during pregnancy. DH guidelines on alcohol treatment recommend cognitive-behavioural therapies, motivational interviewing / enhancement therapy, 12-	No costing information on antenatal period available	MI as part of treatment to reduce alcohol consumption. Identification and referral to multidisciplinary specialist services for more severe addiction, as per DH guidelines. Creation of local, interdisciplinary contingency management plans for

		drinking patterns (i.e. social drinkers) 1 systematic review of MI throughout the life course [182]	step facilitation therapy, coping and social skills training, community reinforcement approach, social behavioural and network therapy by appropriately skilled staff. When alcohol abuse co-occurs with other problems (psychiatric disorders, housing problems) these need to be addressed concurrently.		treatment of referrals. See DH guidelines on alcohol abuse.[184]
	1 review of home visiting (6 studies) for pregnant women with alcohol addiction;	No interventions were identified with a significant antenatal component.[183]	Insufficient evidence of effect of standard HV for alcohol-addicted pregnant women		
Drug addiction	Contingency management (positive reinforcement of desired behaviour – provision of work and financial incentives); motivational interviewing; Motivational interviewing	Targeted – drug use; 1 systematic review[185] 1 systematic review of Motivational Interviewing (MI) as part of treatment of alcohol, drug dependence and smoking	Contingency management (CM, provision of incentives and rewards) effective in retaining pregnant Substance addicted women in treatment but minimal effects on continued drug use. Systematic review of MI treatment of drug dependence in pregnancy found no significant effect on drug use and lower rates of retention in treatment.	Illicit drug use is associated with a myriad of complications for both the pregnant woman and her newborn. These complications are costly. Attendance in drug treatment in pregnancy has been shown to lead to increase birth weight, increase in one minute Apgars, and overall lower costs.[190] On average, Contingency	Identification and referral to specialist services CM could be incorporated into other forms of treatment, in order to encourage compliance. Multi-disciplinary teams recommended by expert advice. See DH guidelines on drug misuse[191]

		throughout the life course [186] 1 systematic review of MI throughout the life course [187] See DH guidelines on drug dependence		Management (CM) participants in the included trials cost up to $600 per client (Jones 2001). Since this limits the applicability of CM on a large scale, non cash incentives such as vouchers have been used. Silverman 2001 extended this concept to include job training.	
	Home visiting	1 systematic review; no HV interventions with significant antenatal component identified[188]	No evidence of effect of standard HV on reduction of drug use of addicted pregnant women		
	Enhanced Doula visits, by trained local paraprofessionals, with multimodal components for pregnant teenagers at high risk / in recovery from drug addiction.	2 reports included on expert advice.[189]	Emerging evidence of effect on the maternal sensitivity and enhancement of breastfeeding of women at high risk (including recovery from addiction) in the postnatal period. Intervention, free of charge, combines begins prenatal and continues post-natally, includes psychosocial support, liaison with community networks, work with families, and support during childbirth.		

Mothers at high risk **- Home visiting**	Home visiting by healthcare professionals or lay paraprofessionals (peer educators and community mothers)	Progressive – for women from demographic high risk groups Progressive – (1 review of reviews; 2 individual reviews)[192]	Limited evidence that home visits improve pregnancy outcomes or use of health services during pregnancy. However, home visits have other positive effects on women including improved mother-infant interaction, parenting knowledge, medical knowledge levels, support levels, health habits, prevention of accidents/injury and increased parenting satisfaction. Some evidence of improved child cognitive outcomes. Some evidence of effect on postnatal depression. Limited evidence of long-term effect on maternal life course (employment and welfare dependence). Evidence of reduction of child abuse and neglect unclear, partly because HV increases likelihood that child abuse will be detected. Significant effect on return to education by adolescent mothers.	While most US studies have concluded that HV represents good value for money the variety of measures used limits assessment of cost-effectiveness of services.	Evidence from review-level literature presented in this evidence briefing suggests that home-visiting programmes to parents of young children can be associated with Improvements in parenting; Reported improvements in some child behavioural problems; Improved cognitive development, especially among some sub-groups of children such as those born prematurely or born with low birth weight; A reduction in accidental injury among children; Improved detection and management of post-natal depression. There is either no evidence or inconclusive evidence for impact of home visiting on the other outcomes reviewed in this briefing, including child abuse, increased uptake of immunisation, reduced hospital admissions or maternal participation in the workforce. There is mixed evidence of effect on maternal return to education (see multimodal interventions for adolescent mothers, below). There is an urgent need to further develop the UK evidence base.

			Emerging evidence of effect on the maternal sensitivity and enhancement of breastfeeding of women at high risk (including recovery from addiction) in the postnatal period.		
Teenage parents **Home visiting and multimodal components**	Enhanced Doula support (by trained local paraprofessionals) with multimodal components including HV for pregnant teenagers with combined multiple risks Combination of home visiting, developmental education, peer role modelling and community supports	2 reports included on expert advice.[193] 1 systematic review[194]	Intervention, free of charge, combines begins prenatal and continues post-natally, includes psychosocial support, liaison with community networks, work with families, and support during childbirth. Effects on contraceptive use, school graduation, maternal mental health, more realistic understanding of child development and improved childrearing attitudes. High rates of attrition limit reliability of findings. Differential effects for adolescent mothers with depressive symptoms and mothers under the age of 16. Effect of intervention on	Variety of measures used limits assessment of cost-effectiveness of services.	One-to-one intensive home visiting beginning antenatally and continuing post-natally, and delivered by highly trained home visitors for women from demographically high risk groups. Multimodal interventions which combine HV and Further research needed of multimodal Doula programmes for adolescent mothers at high risk in the UK.

	Clinic-based, integrated mother-baby programmes ('teen tot' programmes)	1 systematic review[195]	contraceptive use, return to schooling and maternal satisfaction. High rates of attrition limit reliability of these findings.		

POSTNATAL PERIOD					
CHILDBIRTH					
Debriefing following childbirth	Structured psychological intervention to prevent psychological problems post-delivery	Universal (1 good quality review[196])	No evidence of effectiveness of formal debriefing (and some evidence of negative effects). Expert advisors advise that the opportunity to discuss childbirth voluntarily may strengthen early contact with the health professionals.	Cost effectiveness not analysed in this review.	Do not recommend the use of formal debriefing AND Recommend offering women an opportunity to discuss their childbirth experience with healthcare professional to women who wish to do so as per NICE guidance.
BREASTFEEDING					
Breastfeeding initiation and continuation	Combined interventions: group education, education, guidance and support.	Universal 1review of reviews); 1 Cochrane review	Long-term interventions that combined face-to-face contact, information, guidance and support most effective in promoting breastfeeding initiation and duration.	As in antenatal period (above). No review analysed cost effectiveness of different interventions. Further work is required to clarify cost-	Recommend BF initiative as soon as possible (1 hr post delivery) Group classes on breastfeeding with an interactive component; peer support schemes (such as 'Best/Breast/Bosom Buddy') using local experienced breast feeders as

	Skilled breastfeeding support, peer or professional, proactively offered to women who want to breastfeed	Targeted (low income women) [197]	Evidence of effectiveness.	effectiveness issues surrounding infant feeding.	volunteers In antenatal period; multimodal education/social support programmes combined with media campaigns. Recommend Breast/Bosom Buddy peer support initiatives As per HDA guidelines
	Preventing the provision of discharge packs containing formula-feeding information and samples	Universal and targeted (1 review of reviews)[198]	Evidence of effectiveness		Community practitioners should be trained in the Baby Friendly Initiative Do not recommend written materials as a stand alone intervention; …as per NICE Guidance
	Unrestricted feeding from birth onwards	Universal (1 review of reviews)[199]	Evidence of effectiveness		
	Unrestricted mother-baby contact from birth onwards	Universal(1 review of reviews)[200]	Evidence of effectiveness		
	Unrestricted kangaroo care/skin-to-skin care from birth onwards	Universal (1 review of reviews)[201]	Evidence of effectiveness		
	Avoiding supplementary fluids for babies unless medically indicated	Universal or targeted (1 review of reviews)[202]	Evidence of effectiveness		
	Regular breast drainage/continued breastfeeding for mastitis ; Antibiotics for infective mastitis	Targeted (1 review of reviews)[203]	Evidence of effectiveness		

	Basing prevention and treatment of sore nipples on principles of positioning and attachment	Targeted (1 review of reviews)[204]	Promising but limited empirical evidence to date		
	Cabbage leaves/extract for treatment of engorgement	Targeted (1 review of reviews)[205]	Promising but limited empirical evidence to date		
	Systemic antibiotics for infected nipples	Targeted (1 review of reviews)[206]	Promising but limited empirical evidence to date		
	Self-monitoring daily log for women from higher socio-economic groups	Targeted (1 review of reviews)[207]	Promising but limited empirical evidence to date		
	Combination of supportive care, teaching breastfeeding technique, rest and reassurance for women with 'insufficient milk'	Targeted (1 review of reviews)[208]	Promising but limited empirical evidence to date		
	Tailored antenatal education combined with proactive postnatal support in hospital and the community	Universal/ targeted (1 review of reviews)[209]	Promising but limited empirical evidence to date		

	Combining antenatal education with partner support, postnatal support and incentives for women in low-income groups	Universal/ targeted (1 review of reviews)[210]	Promising but lack empirical evidence to date		
	Written educational materials used alone	Universal (1 review of reviews)[211]	No evidence of effectiveness		
	GP clinic visit at one week postpartum	Universal (1 review of reviews)[212]	No evidence of effectiveness		
	Single home visit by community nurse following early discharge	Predominantly targeted (1 review[213])	No evidence of effectiveness		
	Dopamine antagonists for 'insufficient milk'	Targeted (1 review[214])	No evidence of effectiveness		
	Restricting the timing and/or frequency of breastfeeds	Universal/ targeted (1 review of reviews)[215]	Evidence of deterrence of breastfeeding		
	Restricting mother/baby contact from birth onwards	Universal/ targeted (1 review of reviews)[216]	Evidence of deterrence of breastfeeding		
	Routine use of supplementary fluids	Universal/ targeted (1 review of reviews)[217]	Evidence of deterrence of breastfeeding		

	Provision of discharge packs containing samples or information on formula feeding	Universal/ targeted (1 review of reviews)[218]	Evidence of deterrence of breastfeeding		
	Topical agents for the prevention of nipple pain	Universal/ targeted (1 review of reviews)[219]	Evidence of no effect/possible deterrence of breastfeeding		
	Breast pumping before the establishment of breastfeeding in women at risk of delayed lactation	Universal/ targeted (1 review of reviews)[220]	Evidence of no effect/possible deterrence of breastfeeding		
	Combined antenatal education and limited postnatal telephone support for high-income women and women who intend to breastfeed	Targeted (1 review of reviews)[221]	Evidence of no effect		
	National policy of encouraging maternity units to adhere to the UNICEF Baby Friendly Initiative (BFI)	Universal (1 review)[222]	Promising but lack empirical evidence in UK settings		
	Regionally/nationally determined targets with supporting	Universal/ targeted (1 review)[223]	Promising but lack empirical evidence		

	activities, and/or penalties and/or incentives Breastfeeding support in the workplace	 Universal (1 review)[224]	 No studies to date.		

PROMOTION OF BONDING					
Skin-to-skin and Kangaroo care	Skin-to-skin: an hour on average in contact with the mothers body immediately post delivery Kangaroo care – extended physical contact with parent	Universal (1 review[225]) LBW (1 review[226]) Fathers (2 studies in 1 review[227])	Evidence of a range of improved outcomes including mother-infant interaction, attachment behaviours, infant behaviour, infant physical symptomatology. Some evidence of improved outcomes but evidence mostly from developing countries Slight evidence of better mental functioning when delivered as part of paediatric home care; Improved father care-giving skills and responsiveness	The overall costs were "about 50%less for KMC" in the Cattaneo 1998 study. In the Sloan 1994 study, "costs of neonatal care were greater in the control than in the KMC group". However, data were available for only 49 infants (24 KMC, 25 control) at 6-month follow-up. No information on mean (standard deviation)costs was available in any of the trials.	Recommend use of skin-to-skin contact beginning post delivery Recommend use of Kangaroo care as part of progressive provision only.
Information about sensory and perceptual capabilities of infant	Brazelton Neonatal Behavioural Assessment Scale (NBAS)	Universal (1 rigorous review[228],	Small to moderate impact on parent behaviour; knowledge; representations Significant increase in maternal-child interaction following information about perceptual/sensory capabilities of baby	Brief interventions such as the NBAS are widely used and effective with low- and families at high risk. This relatively inexpensive approach could prevent some early problems in parent child relationships for all	Recommend the use of information about sensory and perceptual capabilities of infant as part of routine care as per NICE guidelines. This can be incorporated as part of one-to-one home visiting.

	Parent-coaching skills training (days 1, 2 & 7 post birth)	Universal: 1 group of fathers, 1 group of mothers : 1 RCT in 1 rigorous review[229]	Impact on quality of later parenting Impact on infant behaviour and parent-infant interactions of both fathers and mothers	families and is therefore a good candidate to be routinely and universally available before discharge from hospital. However, the impact may be short-lived with families at high risk unless they are provided with additional, ongoing support and continuity of care.	
Infant carriers	Infant carriers	Targeted (low income inner city mothers) (1 RCT study in 1 review[230])	Improved maternal behaviour; infant behaviour and infant attributions	Cost effectiveness not analysed.	Recommended universal close physical contact through the use of soft infant carriers as per NICE guidance
Infant massage	Infant massage	Universal + targeted (1 high quality review[231]) LBW (1 high quality review[232]) Universal (1 study in 1 high quality review[233]) Universal – fathers only (2 studies in 1 high quality review)[234]	Some evidence of benefits to mother-infant interaction, sleeping and crying, and on hormones influencing stress levels. Not supported Maternal behaviour; and infant behaviour and attributions Increase in fathers involvement in child care tasks ; improved father-infant interaction	Evidence that massage for a preterm infant is of benefit for developmental outcomes is weak and does not warrant wider use of preterm infant massage. Where massage is currently provided by nurses, consideration should be given as to whether this is a cost-effective use of time.	Recommended for progressive provision to improve infant behaviours

Supporting fathers		Universal and progressive (9 studies in 1 review)[235]		No detailed cost information	Recommend interventions that involve father's active observation of or participation with his own child in immediate postnatal period and into later infancy.
	Kangaroo care – extended physical contact with parent	Fathers (2 studies in 1 review[236])	Improved father care-giving skills and responsiveness		
	Brazelton demonstrations aimed at enhancing understanding of capabilities of infant	Fathers and mothers; 1 RCT in one review[237];	Impact on quality of later parenting Impact on infant behaviour and father-infant interaction		
		1 pre and post intervention study in 1 rigorous review. NBAS a component of antenatal (childbirth preparation)classes[238]	Increased mutuality between father and infant and more infant eye contact with father; increased anticipation of infant needs		
	Father discussion groups, father-infant play groups and enhanced fatherhood activities (eg Fathers Day) in a childcare / Head Start centre	1 RCT in 1 rigorous review[239]	Intervention fathers who participated in intensive programme had greatest positive change in father-child interaction. NS changes in amount of caregiving; increase in support for child's learning; decrease in child behaviour problems. NS differences in nurturance,		

			quality of play activities.		
	Paternal education for father and child; group discussions and father child structure and unstructured playtime.	1 RCT in 1 rigorous review[240]	Increase in self-reported paternal involvement in child care tasks, involvement with children on non work days. Higher levels of competence on measures of knowledge and skills.		
	Parent training for fathers and mothers, including videofeedback on parent-child interaction	1 RCT in 1 rigorous review[241]	N/s change in measures of paternal self-efficacy, parenting stress depression child problems/intensity.		
	Infant massage	Universal – fathers only (2 studies in 1 high quality review)[242]	Increase in fathers involvement in child care tasks ; improved father-infant interaction		

PROMOTION OF SENSITIVE PARENTING					
Anticipatory Guidance	Anticipatory guidance (verbal and written) in paediatric settings on healthy sleep patterns (bath, book, bed routine and parent-child interaction)	Universal (1 review with 3 studies[243])	Healthier infant sleep practices	No cost benefit analysis	Recommend anticipatory guidance on healthy sleep practices
Parenting programmes **Media-based information**	Booklets; leaflets; videos with or without telephone support or parent groups.	Progressive – preschool children with emotional and behavioural disorders (1 rigorous review[244])	Impact on child emotional and behavioural problems and parent competence	Media-based interventions less costly than behavioural therapy or clinic based services and effective without further intervention with a proportion of parents (estimated ¾ of the population surveyed in one study).	Media-based behavioural interventions are more effective than no treatment for children with behavioural problems and are recommended as part of stepped-care provision.
Parenting programmes	Parent training – children 0 - 3 Group parent-training combined with psychotherapy for mothers with severe parenting difficulties PIPPIN – first timers	Progressive 1 review[245] Targeted (1 study in 1 review[246]) Universal / Progressive (1 study in 1 review[247])	Marginal effects on child emotional and behavioural adjustment. Maternal mental health; parenting; use of appropriate discipline Increased parental wellbeing, confidence, lowered risk of anxiety/depression, better	Some support for the use of group based parenting programmes to improve emotional and behavioural adjustment of children under the age of 3. Most interventions for older children. Information on costs provided for 1 programme for children aged 2 – 5 (community	Recommend group-based parenting programmes (e.g. Webster-Stratton) to demographically families at high risk Mellow Babies/Parents for indicated problems Support the use of group-based parenting programmes to improve the emotional and behavioural adjustment of children under the age of 3 years. Insufficient evidence for primary prevention.

			couple and parent-child interaction post-partum	based parenting groups for mix of high- and low-risk families – Cunningham's Coping Skills Parenting Programme). Children of families at high risk exhibited severe behavioural problems that would require intervention. Analysis of costs showed that parenting groups were significantly less expensive than clinic-based intervention. No cost-effectiveness information available for analysis of parenting programmes for low IQ parents, but group based interventions and self-instruction likely to be most-cost effective.	For low IQ parents, training that involves specific skill assessment using direct observational techniques, modelling, practice, feedback and praise, and is located in the home or a home-like environment rather than clinic settings.
	Mellow Babies – high risk	Progressive (1 study in 1 review[248];	Improved maternal psychosocial functioning (depression, anxiety and self-esteem)		
	Behavioural parent training – Incredible Years, Triple P (children aged 2+)	Progressive (2 reviews[249])	Improved parent-child interaction, parenting competence and child behavioural outcomes.		
	Parent training for parents with special needs/low IQ	Targeted (2 reviews[250])	Significant improvements in range of parenting skills and moderate improvements in child cognitive outcomes.		
	Parent training for parents with drug and alcohol problems	Targeted (1 review[251])	Limited effects on substance abuse or parenting outcomes; high loss to follow-up		
	Parenting programmes for women with mental health problems	Targeted (1 review)[252]	No empirical studies identified.		
Child behavioural problems		1 systematic review[253] including:		No detailed cost information.	Behavioural parent training, and enhanced training focused on child risk factors, for parents of preschoolers with behavioural difficulties can improve child externalising problems. However, this must be adapted to the context, as attrition tends to be highest among families with multiple problems..
	Parent management training (Webster-Stratton)	2 RCTs	Reduced child problem behaviours and negative parent-child interaction.		
	Parent-child interaction therapy (PCIT)	7 RCTs	Increased compliance of oppositionally defiant children, but mixed		

			findings for long term effects.		
	Enhanced or modified parent training that addresses parental risk factors (e.g. marital problems)	5 RCTs	Unclear results to date.		
	Child specific interventions adapted for child characteristics rather than parent risk factors	1 RCT	Significant effect on child behaviour, child parent relationship, parent feelings of competence and impact of difficult child on the family.		
	Videotaped modelling	1 RCT	Combination of telephone instruction and videotape influence parent behaviour and problem solving strategies but were less effective in influencing child behaviour.		
	Telephone interventions vs home visits or group treatment	1 RCT	All interventions resulted in significant improvements over a no-treatment control. Telephone intervention effects assessed through parental self-report; high loss to follow-up in a small sample.		

PREVENTING/ADDRESSING EARLY PROBLEMS					
Anticipatory guidance in healthcare settings		1 review of interventions in healthcare settings[254]		No cost benefit analysis	Anticipatory guidance in healthcare settings recommended on sleep habits, discipline, and promoting child cognitive development (see above). Further research needed on temperament based AG.
	Temperament-based anticipatory guidance (counselling and materials in a healthcare setting	1 RCT, 1CCT	Increase in parents' knowledge of 'high energy' children's individuality / temperament. Effect on behaviour uncertain.		
	Promotion of healthy sleep	2 RCTs, 1 CCT	Anticipatory guidance and written instructions effective in promoting better infant sleep patterns.		
	Infant night waking	4 RCTs, 1 CCT	Guidance on behavioural interventions successful with mild, but not severe, sleeping problems		
	Reduction of TV viewing/ promotion of non-violent discipline	1 large scale RCT	Effective with promoting non-violent discipline but not reduction of TV viewing		

TREATMENT OF COMMON MENTAL HEALTH PROBLEMS					
Identification of postnatal depression	Screening: Edinburgh PND scale; 2 – 3 questions.	16 studies in NICE review [255]	1 – 3 questions as effective as longer screening/assessment tools (e.g. EPND)	Cost effectiveness fully analysed in NICE review.	Recommend brief identification strategy (2 -3 questions)
Prevention of onset of depression	Psychosocial interventions for prevention of depression among women at no identified risk	Universal 16 studies in NICE review [256]; 1 systematic review[257]	No evidence of effect of psychosocial interventions e.g. support groups in preventing onset of depression in women at low risk.	Cost effectiveness fully analysed in NICE review.	Do not recommend psychosocial interventions to prevent onset of depression among women at low risk.
Treatment of postnatal depression	Psychosocial interventions to prevent the onset of depression among women with identified risk factors: psychosocial risk (e.g. childhood history of abuse, relationship problems); factors related to delivery (e.g. caesarean section); early symptoms of depression	Progressive (NICE review and 2 high quality reviews)[258]	Some evidence that psychosocial interventions are effective in preventing escalation of sub-threshold depressive symptoms.	Cost effectiveness fully analysed in NICE review.	Recommend psychosocial interventions for women with sub-threshold symptoms of depression. Recommend range of therapies for treatment: - CBT or interpersonal therapy Dyadic therapies (e.g. infant massage; interaction guidance; parent-infant psychotherapy) may also be recommended to increase sensitivity towards infants of women in treatment for depression -

	Treatment of depression: Interpersonal psychotherapy; cognitive behavioural therapy; psychodynamic psychotherapy; non-directive counselling for treatment of depression.	Targeted (NICE review and 2 high quality reviews)[259]	Very little evidence found of differential effectiveness of interventions in the NICE review. Both psychosocial and psychological interventions appear to be effective treatment options for women with diagnosed or self-reported post-partum depression. Good evidence for individual therapy; mixed results for group treatment.		

ENHANCEMENT OF MATERNAL SENSITIVITY / INFANT ATTACHMENT					
Interventions to address maternal sensitivity/infant attachment problems		Targeted 2 reviews; 1 review of interventions that aim to increase maternal sensitivity and / or infant attachment security; [260]	Interventions with a clear behavioural orientation that aimed at strengthening maternal sensitivity were more effective than any others (eg those that aimed to change maternal representations or enhancing social support) both in increasing maternal sensitivity and enhancing infant attachment.	No information on cost.	Interventions with a clear behavioural orientation that aimed at strengthening maternal sensitivity.
	Interventions that aim to strengthen maternal sensitivity Interventions that aim to enhance infant attachment security	51 studies 29 studies	Interventions were more effective if they were relatively short; those with less than 5 sessions were as effective as those with 5 – 16 sessions and more effective than those with 16 or more. The effect of interventions conducted at home was not significantly different from those conducted in community settings. Although only 3 studies included fathers as well as mothers, separate analysis of these showed that they were significantly more effective than those which involved mothers only.		

			Meta analysis of 15 trials involving families at high risk found that brief behaviourally focused intervention that aimed at increasing maternal sensitivity were as effective with this sub-group as with parents at relatively low risk.		
	Treatment of mothers at risk of depression				
	Attachment therapy as a component of home visits	1 RCT	Increased maternal sensitivity		
	Non-directive counselling, CBT and psychodynamic psychotherapy compared	1 RCT	Non directive counselling increased maternal sensitivity. No effects for attachment in any intervention.		
	Toddler Infant psychotherapy	1 RCT	Significant effects for intervention mothers. Relatively high SES sample.		
	Adolescent mothers				
	Keys to Caregiving (sensitisation-oriented home visiting programme for adolescents)	1 RCT	Although significant between group differences on parent-infant interaction, small sample limits generalisability		

	Intensive antenatal care vs public health care	1 RCT	No effects found		
	Comparison of a single, intensive home visit focused on mother infant interaction compared to standard HV	1 RCT	Intensive intervention had a positive effect on the quality of mother-infant relation but did not improve interaction of a significant sub-sample (25%)		
	Mixed or multi-risk populations				
	Psychoeducation (psychoeducational parenting intervention, PPI, focused on improving parenting skills and enhancing coping and social skills of maltreating mothers) vs attachment-based psychotherapy	1 RCT	Both interventions were effective in altering the predominantly insecure attachment organisations of infants in maltreating families.		
	Comparison of HV plus care (community health clinic) with usual care	1 RCT	Combination of HV and usual care significantly associated with increased maternal sensitivity in intervention group		
	Group psycho-educational-developmental education programmes as an adjunct to HV	1 RCT	No evidence of effect of group psychoeducational programme over HV		

	HV to women at high risk	1 RCT	No significant differences in attachment, although improved HOME scores associated with better infant outcomes. No sustained intervention effects.		
	Comprehensive Child Development Program (CCDP)	1 large scale, multi-site RCT	No significant between-group differences on maternal responsiveness or child measures		
	Relationship-oriented HV (UCLA Family Development Programme)	1 RCT	Significant impact on mother-child interaction including parental responsiveness		
	Nurse –delivered HV vs paraprofessional HV	1 RCT	Nurses produced significant effects on maternal and child outcomes compared to paraprofessionals		
	Paediatric care plus home visits (Healthy Steps)	1 RCT	Mothers in intervention group more likely to react sensitively at second assessment (child age 34 – 37 months) than at first (age 16- 18 months), suggesting sleeper effects.		

Parent-infant and infant-parent psychotherapy		6 studies in NICE review.		Cost effectiveness not analysed.	Recommended individual, group and /or dyadic therapy as part of progressive provision to mother-infant dyads experiencing problems.
	Infant-Parent Psychotherapy (IPP) compared to Parent-infant psychotherapy	1 RCT in 1 review [261]	Significant effects favouring intervention groups over standard care on mother-infant interaction.		
	Toddler-Parent psychotherapy with depressed mothers and infants	1 RCT in 1 review [262]	Infants in intervention group attained rates of secure attachment comparable to that of infants in no-depression controls.		
	25-week programme mother-infant psychotherapy, psychoeducation and developmental guidance for mothers at multiple risk	1 RCT included on expert advice[263]	Effects on maternal sensitivity responsiveness and reciprocity. High rates of attrition.		
	Infant-led psychotherapy – Watch, Wait and Wonder compared to mother-infant psychotherapy	1 RCT in 1 review [264]	Improved mother-infant relationship, maternal competence, satisfaction, infant cognition and emotional regulation.		
	Parent infant psychotherapy for toddlers (3-5) exposed to marital violence	1 RCT in 1 review [265] .	Durable effects on children's behavioural problems and mother's general distress.		

Videofeedback and interaction guidance	Modified Interaction Guidance (IG) on mothers aversive/intrusive 'atypical' behaviours	Targeted 1 pre-post intervention study included on expert advice[266])	Improvements in infant health; mental health; maternal behaviour, interaction, parenting knowledge and skills. Strongest effects in highly reactive children and mothers.	Cost effectiveness not analysed.	Recommended for progressive provision to mother-infant dyads experiencing problems.
	Videofeedback Intervention to Promote Positive Parenting (VIPP) programme (strong behavioural component) combined with discussions of mothers' childhood attachment experiences in relation to current childrearing	Targeted/ Progressive **2** RCTs in 1 systematic review[267]	Maternal sensitivity post-test significantly higher than in the control group. Delivery of the programme (e.g. with or without brochures) did not affect outcomes. A second study of VIPP found significant improvements in child externalising disorders.		
	Comparison of brief psychodynamic psychotherapy and Interaction guidance Parent-infant psychotherapy combined with videofeedback (see infant-parent psychotherapy, above).	1 RCT in 1 systematic review	Both parent-infant psychotherapy and videofeedback found to improve mother-infant relationship and symptoms of child physiological functions.		
			Increased emotional self-regulation of mothers and		

	Combined psychotherapy, videofeedback and controlled exposure to child distress for 32 mothers with PTSD resulting from violence.	Targeted/ Progressive (1 pre- and post intervention study, no controls, included on expert advice)[268]	reduction in negative attributions.		

PROMOTING CHILD COGNITIVE DEVELOPMENT					
Promoting child cognitive development and early learning	Anticipatory guidance (verbal and written) in paediatric settings on healthy sleep patterns (bath, book, bed routine and parent-child interaction	Universal (1 review with 3 studies[269])	Parents more likely to read to infants; increased book sharing and reading scores; book sharing also linked to healthier infant sleep practices	No cost benefit analysis	Recommend the use of universal book sharing (linked with anticipatory guidance on healthy sleep practices, above) Recommend parent-toddler groups for songs, music and book sharing as part of progressive provision
Book sharing, play, early songs and music	PEEP programme: Group-based activities to promote parent-child interaction through play and book sharing	Targeted (2 studies included on expert advice)[270]	Improved child cognitive skills (including verbalisation, language use and understanding of numbers) and self esteem at age 3-5.		
	Community based early childhood development programmes	11 studies in 1 systematic review[271]	Significant effects on children's cognitive development / IQ		
HEALTH PROMOTION AND PREVENTION – See antenatal period for SMOKING CESSATION					
Obesity prevention	Range of programmes	Targeted Infant/toddlers (1 review 0 – 5 years[272]; 2 reviews 2-6years)[273]	Small number of studies showing potential of behavioural and multi-component interventions with parents to promote children's eating and exercise. Limited evidence for 0 – 3 years.	Cost benefit of obesity prevention programmes can be inferred from studies on economic implications of obesity for public health services. Cost effectiveness of different interventions not contrasted.	Recommend multicomponent interventions with a behavioural orientation aimed at training parents to (re)train children's diet and exercise.

Promotion of better diet/mealtime practices	Individually-tailored advice to mothers of children under 5, by health visitors and GPs in the home and GP surgeries. Nutrition education workshops and weekly newsletters for mothers	1 systematic review Targeted 1 pre and post intervention study, no statistical analyses. RCT of mothers with children in Head Start settings in 2 US cities.	Improvements in meal planning, meal organisation and nutritional content of meals. Improvements in mothers' nutrition-related behaviours.	Not assessed. Not assessed.	Findings suggest that an intensive, individually tailored support to mothers can affect family diet and eating habits. Differences in outcomes in two intervention groups suggest influence of demographic factors and participant ethnicity. Further research is needed in UK settings.
Growth Monitoring	Clinic based infant/child weight and growth monitoring	Recommendations in 1 review.[274] Infants 0 – 10 days post birth. Infants from 2 months+ Children aged 2 - 5[275]	Separation of a mother and her baby within the first hour of the birth for weighing, and measuring should be avoided Birth weight should be recorded as it relates to gestational age Babies who give cause for concern should be weighed (nude) at immunisation and surveillance contacts at ages 2, 3, 4, 8 and 12 months. Routine weighing / measurement of thriving babies is not necessary. BMI) (adjusted for age and gender) is recommended as a practical estimate of overweight in children over the age of 2	Not assessed.	Further research on cost/benefit of routine weighing (effect on parental anxiety, detection of morbidity, effect on breastfeeding) is necessary. Further research is also needed on the generalisability of height/weight charts in UK populations.

IDENTIFICATION OF PROBLEMS – See above
SUPPORTING FAMILIES AT RISK – See above **- Domestic abuse** **- Teenage mothers** **- Alcohol dependency** **- Drug dependency**

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