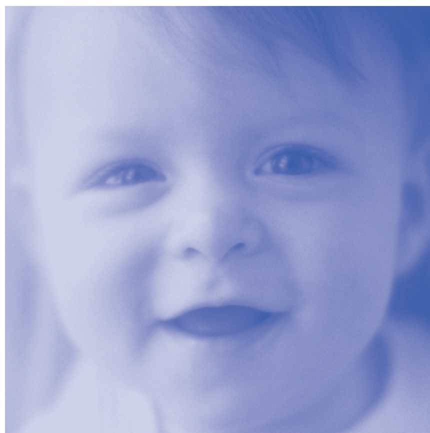
Infant Mental Health: A Guide for Practitioners

March 2007

A Report of the Expert Working Group on Infant Mental Health



HeadsUpScotland

National Project for Children and Young People's Mental Health

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"We will improve mental health services being offered to children and young people by ensuring that by 2008:

- A named mental health link person is available to every school, fulfilling the functions outlined in the Framework
- Basic mental health training should be offered to all those working with, or caring for, looked after and accommodated children and young people.

We will reduce the number of admissions of children and young people to adult beds by 50% by 2009."

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Foreword

In recent times, the Scottish Executive has taken a number of important steps designed to improve the mental health of children and young people and the services available to those in difficulty. With the publication of *The Mental Health of Children and Young People: A Framework for Promotion, Prevention and Care (FPPC)* in October 2005, the Executive set the policy context. The broad approach to delivery was set out in 2005 with *Delivering for Health*, with details about implementation being provided in the recently launched *Delivering for Mental Health* (December 2006) and *Delivering A Healthy Future* (February 2007).

The Framework made the promotion of resilience and emotional well-being central to mental health policy and indicated a strategic commitment to achieving the earliest possible effective intervention for those in difficulty. The emerging field of infant mental health is clearly relevant to both of these dimensions and has the potential to become a key element of our activities in Scotland in the future. To help investigate this further HeadsUpScotland identified the need for a concise summary of the best evidence in relation to infant mental health. Dr Christine Puckering of the University of Glasgow was asked to convene an expert group to develop such an account.

This document, *Infant Mental Health: A Guide for Practitioners* is the output of the work undertaken by Dr. Puckering and her colleagues. They have given us a concise and very readable summary of the current evidence which is likely to be of interest and value to a wide range of those working with children, parents and carers and I am grateful to them. It is a practically orientated account and will be suitable for consideration in relation to practice within statutory agencies, including health, education and social services, but also within the voluntary sector and community settings.

I am pleased to be able to introduce it to you and expect that it will make an important contribution to the way we work together to improve the mental health of children and young people throughout Scotland.

Graham Bryce
Chair, Children and Young People's Mental Health Steering Group

Acknowledgements

HeadsUpScotland would like to thank everyone who assisted in the compilation of this report and in particular the members of the Short Life Working Group on Infant Mental Health and its Chair, Dr. Christine Puckering. In addition, HeadsUpScotland acknowledges the research support of Jane MacQuarrie.

HeadsUpScotland would also like to thank the administrative and support staff for their considerable contribution, particularly Irene O'Neill and Paul Sawers.

Finally, this report would not have reached its conclusion with out the keen editing eye and commitment to detail of John Wallace.

Section 1: **Introduction**

This Guide will be of interest to those working with infants, their parents and carers, and those engaged in educating children, young people and adults in issues around childcare and parenting.

The good practices highlighted here have been evaluated by the Scottish Executive's Short Life Working Group on Infant Mental Health as those most likely to promote the improvement of infant mental health. Other interventions, whose degree of effectiveness is less well supported, are also detailed and the reasons for their less-favoured status discussed.

The Significance of infancy for mental health

> *"Good parenting is fundamental for the development of a child's mental health and wellbeing. As children's primary carers, all parents need to be supported and helped, but especially when they are parenting in difficult circumstances or facing uncertainty about the way they are bringing up their children. Interventions focussed during pregnancy and at the time around the birth are likely to be the most effective in preventing mental health problems of a child. These include interventions which improve and enhance the wellbeing of the mother and of the baby and promote the mother-infant bond, and which take into consideration the psychosocial aspects of pregnancy, promote good early parent-child interactions, attachment, support problem-solving skills of the parents, and underline the roles of fathers."*
>
> *The Mental Health of Children and Young People: A Framework for Promotion, Prevention and Care, Scottish Executive, 2005. (1)*

Children are born physically and developmentally immature, without even the basic tools of survival. Infants are however acutely tuned to other humans and uniquely prepared to make social connections. Olfaction, hearing, vision and phased behaviour are all specifically orientated for face-to-face interaction from the earliest hours of life (2). Engagement of a more mature caretaker is necessary for survival but also plays a crucial role in long-term emotional, social and cognitive development.

In the first year the making and breaking of connections between brain cells (synapto-genesis and pruning) proceeds at a rate unmatched at any other period of life: neural pathways that are repeatedly used strengthen, while those that are not used decay (3). In this way very early experience, which will not be consciously remembered, lays foundations for significant later development. A warm, sensitive and responsive adult,

or small number of familiar adults is needed to guarantee the best possible outcome (4).

The promotion of infant mental health requires the support of those structures through which all infants can experience optimum environments. Universal health improvement and education resources are part of this picture. Midwives, health visitors/public health nurses and general practitioners are accessed by the great majority of families and each has a unique role both in supporting the best conditions for all children, and identifying those families for whom more intensive interventions may be needed (5). Risks may reside in the baby, in terms of prematurity, illness, congenital and obstetric complications. The baby's temperament and personality may also potentially create problems. Equally the risk may reside in the nature of the environment the baby encounters: in poverty, parental mental or physical ill health, or in the environment created by immature parents. Often, risks are multifactorial and involve characteristics in the parents, the child, the fit between parent-and-child and factors in the wider environment. Particular care needs to be given to those parents who are less likely to access information or help readily. Families for whom literacy is a challenge or those for whom English is not their first language may have particular needs that put their babies at additional disadvantage and also prevent easy access to resources and services. Traditions and cultures may also differ from the prevailing norms.

Opportunities to address infant mental health issues could arise at a number of stages in the life of the parent and the child. Personal and social development in the school curriculum before pregnancy is the first opportunity and almost universally delivered. Antenatal and perinatal information and services are very significant also because of their almost guaranteed contact with families. The opportunity to identify families with additional needs will devolve to those who deliver these services. Once vulnerability is identified, delivery of services may pass to other agencies (5).

In all this, there are opportunities for electronic media and technology to open up access to those for whom a booklet may not be an appealing mode of receiving information. Websites, computer games and DVDs provide possibilities to deliver messages in readily accessible formats to families who may be uncomfortable with written documents.

Infant Mental Health is by definition an area of early intervention both in the life of the individual child and in the possible development of difficulties. The advice of the Scottish Needs Assessment Programme on early interventions is therefore welcome:

> EARLY INTERVENTION SUMMARY
> Several themes emerging in the literature and from well-controlled studies indicate that effective programmes incorporate the following features:
>
> - They should occur early in the problem cycle and preferably early in age.
> - They should involve familiar people or people who will be able to empower parents and work in partnership with professionals (e.g. health visitors or trained volunteers).
> - They should be intensive and sustainable over a period of time.
> - They should be multifaceted, incorporating several interventions (e.g. to both parents and child; focussing on health, education and parent training.)

- They should incorporate interventions of proven effectiveness (e.g. behavioural methods and cognitive approaches; focussed interventions for parents who are, for example, psychotic).

The best programmes will take place at several levels (tiers). This might involve GPs, health visitors, teachers, social workers, trained volunteers and others delivering the service, CAMHS professionals, educational and clinical psychologists working in programme design, consultancy, evaluation and training.

To facilitate these interventions we recommend that:

- Programmes should be rigorously evaluated and an evaluation strategy should be established before the programme commences.
- Programme designers should take note of the features described above.

Needs Assessment Report on Child and Adolescent Mental Health - Final report, Public Health Institute of Scotland, 2003 (6)

The far sightedness of HeadsUpScotland and the Scottish Executive in recognising the fundamental importance of infant mental health and supporting a short-life working group on infant mental health is greatly welcomed.

The Short Life Working Group on Infant Mental Health

A Short Life Working Group from health, early education, social services and the voluntary sector met between December 2005 and May 2006 to examine the evidence for measures to support good infant mental health and to make recommendations for a strategy for Scotland to ensure the best outcome for all babies.

The Group included representatives from statutory and voluntary sector services, policy makers, professional education, health improvement (health promotion and education) and health, early education and social care sectors as these were all seen to have a role in promoting good relationships in families and particularly for infants.

Additional research into the evidence base of effectiveness for various interventions was conducted by the Group Chair, Dr Christine Puckering, and Assistant Psychologist Jane MacQuarrie. This document flows from the recommendations of the Group and the additional research.

HeadsUpScotland

The work was conducted on behalf of HeadsUpScotland - the national project for children and young people's mental health. HeadsUpScotland is part of the Scottish Executive's National Programme for Improving Mental Health and Well-being.

Role and remit of the Group

The group had a remit to examine models of good practice in Scotland and elsewhere for the promotion of good mental health both in low-risk and high-risk families. The intention was to consider existing models of practice. Targeted and intensive services were considered likely to be well represented in published or "grey" literature. More universal services were visited, as their approaches were often broader than a singular intervention.

The focus was on the demonstration of impact on children and evidence-based methods of assessment for both universal to intensive treatment. Lack of evidence does not prove lack of impact, but particularly for long-established programmes, there is an obligation to provide evidence of effectiveness, which could include but should not be limited to patient satisfaction.

Methods

The Group met on five occasions between December 2005 and May 2006. Group members presented their own services and work, and the Group reviewed health improvement (health information and health promotion) materials, both printed and in audio-visual formats.

Jane MacQuarrie and Christine Puckering made a systematic search of the literature on infant mental health resources, services and measures, with some additional literature drawn from key papers and as a result of consultations and visits. For further details of the search strategy and its results, please see Section 7: Further information, reading and resources.

Christine Puckering undertook visits to the following UK services implementing universal services to support infant mental health:

- Solihull Project (Hazel Douglas)
- Sunderland Infant Mental Health Project (P O Svanberg)
- Coatbridge (Janice Longford)

Reports, literature and evaluations were received from other services, including the Anna Freud Parent-Infant Project, the Buttercup Project, Getting Ahead and the Acorn Project.

Section 2: **Recommendations for training and staffing**

The penetration of messages about the importance of infant mental health in anything other than a piecemeal way depends on a common core of knowledge and understanding of the issues across disciplines and agencies, including statutory and voluntary sectors.

Service coordination
It is recommended that an infant mental health coordinator be appointed by each NHS Board. Coordinators would promote infant mental health across agencies and disciplines and safeguard programme maintenance and fidelity.

Training for all staff
Training of all staff likely to meet new families and play a role in the care of them and their babies will reinforce a coherent approach across social work, early years practitioners, health and education.

As well as increasing the availability of appropriate training options, steps need to be taken to ensure that staff have sufficient time in order to attend and that their workplaces are able to release them. Workplaces must also be able to implement any changes that are the subject of such training, including the allocation of staff time and budgets for ongoing supervision and resources, without which training alone is fruitless.

Core training for medical and child care staff
It is recommended that infant mental health be made part of the core curriculum for all courses for public health nurses, undergraduate doctors, midwives, child care and child mental health professionals.

Developing standards and core competencies
Standards and core competencies for multi-disciplinary perinatal mental health training are currently under development and parallel standards should be developed for infant mental health.

Post qualification training in identification of 'at risk' families
It is recommended that post qualification training be made available to all midwives, public health nurses, general practitioners, child mental health and child care and education professionals to help them to identify and work with families with a higher degree of risk.

Training for specialist CAMH professionals
It is recommended a specialist Infant Mental Health training module should be commissioned by HeadsUpScotland to equip specialist CAMH professionals from a variety of disciplines. These should include (but not be confined to) psychology, psychiatry, psychotherapy, social work and speech and language therapy.

Specialist consultants in infant mental health
Universal services offered by Tier 1 and 2 professionals, including early years professionals, social work and voluntary organisations, should have access to specialist consultants from Child and Adolescent Mental Health for case consultation, supervision and referral if necessary. Psychologists, psychiatrists, child psychotherapists and other professionals with a particular expertise could offer such a resource. All would be expected to have undertaken specialist training such as the proposed HeadsUpScotland module in Infant Mental Health.

Antenatal services
Midwives see the vast majority of mothers-to-be and are in a unique position to enquire about and link parents to additional supports. Health visitors/public health nurses also occupy a key position in this respect. Joint training in, for example, the Solihull Approach, should be encouraged to better equip midwives and health visitors/public health nurses in assessing families for additional supports and give greater understanding of their role in supporting infant mental health.

Perinatal services
Perinatal services are in a very good position to reach almost every family.

Joint training
Joint training on infant mental health would equip professionals to deliver the right messages about the significance of early infant communication.

Helping parents to appreciate the capacities of their babies
Assistance should be given to parents to help them understand and appreciate the capacities of their babies as they grow and change. Doing so has been shown to improve interaction and cognitive outcomes.

Two methods are recommended for use at different times in infancy:

The *Brazelton Neonatal Behavioural Assessment* (7) should be demonstrated to all parents before discharge or at home after early discharge to alert parents to the capacities of newborns. A scoping exercise should be undertaken to assess the feasibility of this before rolling the procedure out across all services.

The *Maternal Assessment of the Behaviour of her Infant* (MABI) (8) should be completed after birth and every week until four weeks to raise parent's awareness. Health visitors/public health nurses could use this as part of a structured evaluation of the family's need for additional support in the first few weeks, in keeping with *Hall 4* (5) recommendations.

Postnatal services
Training in the Solihull Approach has been shown to be effective in supporting joint work across a number of disciplines and agencies with a reduction in parental anxiety and the severity of children's problems.

Section 3: **Recommendations for awareness raising and pre-pregnancy education**

Pre-pregnancy health improvement information is a valuable opportunity to reach a wide population, including the teenagers who will go on to become very young parents.

The school curriculum
Education for and about parenthood has in many cases been accorded low status in schools, has often had access only to poor or inappropriate resources, been seen as irrelevant by some teachers and by more academic students, particularly boys, and has sometimes been taught by teachers without the necessary commitment and skills (9).

The recommendations of Hope and Sharland's report (9), while not specific to infant mental health, are helpful in identifying methods by which young people before parenthood could be helped to see the value and demands of that role. Their recommendations included the adoption of a parenthood syllabus for 11-13 year old and 14-16 year old young people.

The Personal and Social Development 5-14 Guidelines and the *Curriculum for Excellence*
The opportunity to include such a programme, covering infant mental health within the umbrella of parenthood in the Personal and Social Development module of the 5-14 framework and its successor, the *Curriculum for Excellence,* could ensure all young people have early exposure to the importance of relationships to infants and young children. Even children who might be initially uninterested in discussing babies might become interested in the context of a more general framework of discussion about relationships.

Baby Think It Over
The *Baby Think It Over* (BTIO) programme (www.realityworks.com), in which young people are given a realistic, computerized model baby to care for during 72 hours as part of a parenting education package in secondary school, has been shown to reduce the wish of teenagers to become parents at an early age and to reduce the number of teenage pregnancies in this group (10;11). Reduction of teenage pregnancy rates would reduce the number of infants suffering the adverse consequences of too early parenting.

Although there is no UK evidence of the effectiveness of BTIO in preventing teenage pregnancy, if used as part of a programme of personal and social education it could provide a valuable source of realistic feedback on the demands of caring for a young baby before child bearing.

The Teenage Pregnancy Unit at the Department for Education and Skills has produced a discussion paper on using BTIO simulators in the UK, available to view online here:

http://www.dfes.gov.uk/teenagepregnancy/dsp_content.cfm?pageid=220

Using computer 'games culture' to engage children and young people
The development of electronic games and their wide familiarity to children and young people opens up new options for introducing health education material to children and young people.

BABYZ and NINTENDOGS
The popularity of games such as NINTENDOGS and now BABYZ, in which the player has to take care of animals or children, suggests that these games are accessible and interesting to quite young children. The content of the BABYZ site (www.babyz.net) suggests that some professional input would be helpful to ensure the correct messages are being given.

Similar health improvement materials have been produced and used in schools as part of smoking cessation programmes at reasonable cost and if distributed to schools could provide a valuable resource. If a commercial games manufacturer undertook the production and distribution of a more sophisticated game then this could have a wider and sustaining impact.

Resources for health promotion and improvement

Current resources
Some excellent audio-visual materials and resources already exist, e.g. the Solihull Approach material, *I am Your Child*, *Social Baby* and *Getting to Know You* videos (see audio-visual material listed in Bibliography).

Improving commercially backed websites
Several commercial organisations (e.g. Boots the Chemist) have online baby clubs where parents can find information and make contact. NHS Board areas could explore these possibilities with local providers and infant mental health topics made part of the information available locally.

Developing an infant mental health video/DVD presentation
An infant mental health video/DVD could be produced. Production costs could be reasonable with copies produced at very low cost. Such a DVD could be given to every mother by her health visitor.

Section 4: **Working with infants, parents and carers - discussion and evidence base**

This section takes a variety of interventions and practices in current use and examines the evidence base for their effectiveness.

Antenatal services

The role of midwives in supporting infant mental health
Midwives see the vast majority of mothers-to-be and are in a unique position to enquire about and link parents to additional supports. The Coatbridge "Investing in Infants" evaluation report (12) described how the community midwives had responded to Solihull Approach training. Initially they were sceptical that their role had anything to do with infant mental health. They were also dubious about asking questions about mothers' past and current psychological well-being, and social support, fearing that this was intrusive, and might disclose problems they did not know how to handle. After Solihull Approach training, however, they were some of the strongest advocates of joint health visitor/public health nurse and midwife training in the approach, assured of the value their role and confident both about the relevance of questions about psychological well-being and in their knowledge of how to respond and where to refer mothers for additional help if needed.

Psychosocial information in antenatal education
Evidence of the effectiveness of psychosocial information introduced into antenatal education is poor. Little research has been carried out on the content of antenatal education and what there is gives little support to the inclusion of information on parenting. Most antenatal classes are offered in the last trimester, concentrate on delivery and are used preferentially by more middle class parents. Younger, less well-educated and socially deprived groups are the least likely to become engaged.

The Sunderland Infancy Project has however been able to engage parents identified by the midwifery or health visiting service as being at risk of difficulties with their children. Parents participate in 6-session antenatal groups with a psycho-social and developmental theme at around 20 weeks gestation, before the impending birth becomes imminent and all consuming. The families engaged in this group, held in a Sure Start family centre, have shown an increased involvement in supportive postnatal services, including Sure Start.

Identifying "at risk" groups
The appropriate targeting of additional support to "at risk" groups requires that mechanisms are in place to recognise who these groups are and that effective tools are made available to them. The concepts of the Integrated Assessment Framework are useful but are not linked to validated measures. The Edinburgh Post-natal Depression Scale (EPDS) has been used in pregnancy (13) but other types of antenatal psychological distress and social difficulties are also of concern. Midwives' screening using interviews covering drug and alcohol use, domestic violence, and obstetric history, along with questionnaires such as the Antenatal Psychosocial Risk

Questionnaire and the EPDS, have been used to indicate individual or combinations of risk factors

Early intervention and prevention
Olds et al (14) described a randomised controlled trial and two replications. In the first trial, nurse-visited high-risk women improved their diet and reduced their smoking in pregnancy and made better use of formal and informal sources of support. They had fewer pre-term deliveries and larger babies even among the very young teenage mothers. In the two years after birth home visiting continued and the intervention group had fewer non-accidental injuries and ingestions. The positive effects in the intervention group were still evident at 15 year follow-up in that unmarried poor mothers had fewer subsequent pregnancies, less time on welfare benefits and fewer criminal convictions and drug related problems. Pregnancy outcomes in the replications were less clear, but maternal life-course changes and better childcare were evident.

Unfortunately, randomised controlled trials of prevention and early intervention programmes have, in general, proven to be of only short term benefit in indicated groups and of little or no value in heterogeneous “at risk” populations (15).

The Starting Well health demonstration project undertaken in Glasgow, based on the Olds model, had disappointing results. The take-up of the programme was only 60% in identified deprived areas and few differences were evident between intervention and control areas on key indices of parent-child relationships at the end of the project. The use of area-based indices of need rather than individual assessment and the background of good health visiting services available both to intervention and control families may have attenuated any general group effects.

Perinatal services
Perinatal services are again in a strong position to reach almost every family. Including infant mental health in the training of midwives would give a positive impetus to universal infant mental health.

Helping parents to appreciate the capacities of their infants
Two specific interventions have been shown to have a significant impact on later outcome. The first is the Brazelton Neonatal Behavioral Assessment Scale (16), a neonatal observation scale taking about 20 minutes to complete by a trained practitioner (17). In a black, low educational standard group of teenage mothers with pre-term babies, this was demonstrated in front of the parent(s). They were then asked to complete the Mother’s Assessment of the Behavior of her Infant Scale (MABI) (18) at one week intervals for the first month of the baby’s life. A second group completed the MABI at the same times but did not observe the NBAS while a third group acted as a no intervention control group. Both the Brazelton plus MABI group and the MABI alone group showed enriched face to face mother and baby interaction at four months and significantly better Denver Developmental Screening Scores.

At twelve months, both intervention groups showed significantly enhanced Bayley Development Scores. These two interventions appear to be highly cost-effective forms of early intervention. Both interaction and cognitive outcome, which at this stage is strongly related to mother-infant interaction, were improved by giving mothers the opportunity to appreciate the capacities of their babies and so to foster more responsive interactions.

Infant mental health support in perinatal mental health units and services
The development of perinatal mental health units where mothers can be admitted accompanied by their baby is welcomed. Provision to support the relationships of the mothers and their babies and protect the mental health and development of the babies is considered in the core staffing.

Postnatal services

Low professional contact interventions
Three studies of interventions involving little personal contact between services and parents have been shown to have significant effects on maternal sensitivity and attachment with large effect sizes. These programmes require a minimal investment of professional time and therefore expense. Since these programmes have low cost and a large effect size (d=0.62), despite some variability, they can be highly recommended to service providers as cost-effective interventions. The studies and outline of the programmes is given in Table 1. The *Feeding Your Baby With Love* video was made in close co-operation with a group of black teenage mothers who provided the content and the commentary in such a way as to ensure that the message was conveyed in culturally and age appropriate ways.

Table 1: Low cost/low professional contact interventions with a positive effect on sensitivity and attachment

	Sample and Intervention	Age of child	Sensitivity Post-test *d*[1]	Attachment Post-test d[1]
Anisfield, Casper, Nozyce and Cunningham, 1990 (19)	Low socio-economic status sample. Provision of "Snuggli" baby carriers vs infant seats	Newborn	0.53	0.62
Black and Teti, 1997 (20) "Feeding your baby with Love"	Adolescent African-American mothers. 15 minute video-tape on responsive mealtime conversation.	5 months	0.54	
Riksen-Walraven et al, 1978,1996 (21)	Low socio-economic status. Minority ethnic. Workbook on responsiveness	13 months	1.36 and 0.38	

[1] Cohen's d is a measure of the size of the effect of an intervention. d is defined as the difference between the mean values in the treatment group and control group divided by the standard deviation of either population. A d value of 1 is generally taken to indicate a very strong treatment effect – most medical treatments have values of 0.5 or thereabouts.

Baby carriage arrangements
A simple public health recommendation to bring parent and child into face-to-face orientation may also be of value (22). Backward facing buggies, which allow the child to watch the mother's face, would seem a simple example.

The European Early Promotion Project
The European Early Promotion Project is a primary health care service to promote children's mental health (23). Primary health care workers in five European countries were trained to conduct health promotion interviews with all prospective mothers one month before and one month after delivery. Mothers identified as having specific needs were then seen using a counselling model. By two years of age the mothers in the intervention group were seen to be more involved and less punitive. Child outcome data (24) showed limited differential effects in the intervention and control groups on child behaviour problems or cognitive development at 24 months, but this varied between countries dependent on the pre-existing level of services.

Effects of psychotherapeutic work in maternity and child health centres
The value of psychotherapeutic work at maternity and child health centres in Stockholm has been shown to encourage a more psycho-social approach to care by case consultations, training and support offered by a psychologist to paediatric staff. The effects on child outcome are not confirmed (25).

The Solihull Approach
Douglas et al (26) have developed the Solihull Approach for all staff working with young children. The core concepts of containment, reciprocity and behaviour management are delivered by multi-disciplinary staff and backed up with a resource pack. The approach is designed to meet the needs of families throughout the early development of the child, from birth to five years. Qualitative and a small quantitative evaluation of the approach have been published (27);(28) showing high acceptance by health visitors/public health nurses, reduction in the severity of presenting problems in the infants and a lowering of Beck Anxiety Inventory scores in mothers.

Engaging fathers
Scholz and Samuels (29) is one of the few papers to address the potential for fathers to make a contribution to and enjoy the development of their infant. A nurse-delivered intervention in the home at four weeks post-partum using a video tape of a baby bath-relaxation technique and baby-massage demonstration led to greater involvement in the fathers in the subsequent two months. At follow-up the babies greeted their fathers with more eye contact, smiling, reaching and vocalising.

Bookstart
Bookstart, now funded by the Booktrust and the Scottish Executive, is a very cost-effective model of promoting good parent-child communication as well as having surprisingly large effects on language literacy and numeracy even into school age (30;31). Bundles of free books for children and information for parents are distributed to parents by health visitors/public health nurses.

Services for families with additional needs

Home visiting
Home visiting has been considered the ideal model to support families with young children. A meta-analytic review of sixty programmes (32) however, suggested that while effect sizes for home visiting for children under three were statistically significant, the clinical significance of the effects was small and may not be cost-effective, although even a small reduction in child abuse risk might be considered worthwhile.

Teenage parenting programmes
Coren, Barlow and Stewart-Brown (33) reviewed 14 studies of parenting programmes for teenage parents and their children excluding long term home support programmes. Although the studies varied in methodology and outcomes measured, results were positive for maternal sensitivity and infant responsiveness. A group-based programme was more effective when directly compared with an individual treatment programme in one study, though most studies did not make such a direct comparison. Shorter and less intense programmes seemed to be as effective as longer programmes and those of 10-12 weeks were considered the most cost-effective. High drop-out and attrition rates were recorded even though most of the samples were of volunteer patients and therefore likely to be well motivated. Programmes involving fathers were rare, but have been shown to be positive and the need exists for greater involvement of teenage fathers who may be marginalized or neglected.

Baby massage
A Cochrane Collaboration review (34) is underway to examine the effectiveness of massage for promoting mental and physical health in infants under six months but no results have so far been published. Disabled and pre-term infants will be specifically excluded from this review

Field et al (35) showed the effectiveness of massage therapy for the 1-3 month infants born to depressed adolescent mothers. The babies slept more, cried less, spent more time in active alert states and had lower salivary cortisol suggesting lower stress than did a group who were rocked. Onozawa, et al (36) showed that an infant massage class improved mother infant interaction for mothers with post-natal depression. The mother’s mood also improved.

Kangaroo care for low birth weight infants
Kangaroo care for low birth weight infants was shown to change the mother’s perception of her infant and increased mother-child responsiveness at 41 weeks gestational age (37).

Relationship-based interventions
Lyons-Ruth et al (38) showed an improvement in infant development, infant attachment, mother-infant interaction, maternal depression and maternal social contacts following weekly home visiting by either a trained lay-worker or a professional.

Heinicke et al (39) showed that a relationship-based intervention with poor mothers who were lacking in family or community supports using weekly home visits and a group programme increased the number of securely attached infant and responsive parents than a control group. The effects may have been mediated partly by partner

support. (This study was included in the Bakermans-Kranenburg, 2003 (40), meta-analysis).

High-risk and potentially maltreating families

Chaffin et al (41) described services offered to low income, high-risk for child maltreatment families. Programme completers did not differ from drop-outs, or from those who only had a single contact. There was no relationship between programme intensity or duration and outcome. Programmes helping families to meet basic needs and offering mentoring were more effective than parenting and child development programmes and clinic-based programmes were more effective than home visiting services.

Bakermans-Kranenburg et al (42) selected a group of mothers on the basis of the adult attachment style. Insecurely attached mothers were offered four home visits. The intervention mothers were more sensitive at 13 months than were a group of control mothers. Mothers classified on their own attachment style as insecure-dismissing profited from video interaction guidance. Mothers who were insecure–preoccupied tended to profit more from video feedback with additional discussions about their childhood attachment experiences. This is an interesting study, but given the labour intensive nature of the Adult Attachment Interview it is not likely to have an immediate application in clinical practice until a more economical method of recognising adult attachment style is available.

Aronen et al (43) showed that at 20 years old, young people from high-risk families who had received 3-6 sessions of counselling in the first six months of the child's life and then further counselling up to age five had significantly fewer psychiatric symptoms than did a control group. While the effect is statistically significant, the extent of the input by psychiatric nurses over five years would make this a low cost-effectiveness strategy.

MacLeod and Nelson (44) reported on a meta-analysis of child maltreatment prevention programmes, 32 of which started antenatally or in the preschool period. The effect sizes were in the moderate range. Two studies which began in the antenatal period were particularly effective (45;46) and those starting in the antenatal period or at birth were generally of greater effectiveness. Larger effects were seen for increased competencies rather than decreased child maltreatment as such but one would hope that there might be a positive chain of events from the former. Programmes combining more than one type of intervention and with an empowerment/strengths-based approach were more powerful. Longer programmes also had a greater effect than those lasting less than six months.

Intensive therapeutic interventions

There are major difficulties in performing a meta-analysis of intensive therapeutic interventions for families with high levels of need in that few studies are set up to test effectively between treatment types, or standardise age of application or target group. The definition of a "good outcome" is also elusive, since many of the key outcome indicators will not be evident until much later in the child's development. However, parental sensitivity, with a strong putative causal link to secure attachment, and attachment itself are key markers of good infant outcome.

Promotion of sensitivity and attachment
Bakermans-Kranenburg van IJzendoorn and Juffer (40) made a systematic review of interventions to enhance sensitivity and attachment in early childhood covering a range of interventions from brief cognitive-behavioural programmes to long-term intensive psychosocial treatments. Despite the reservations above, they nevertheless felt able to reach some over-arching conclusions, based on 70 published studies of 88 interventions across age bands of infants and parents (adult vs teenaged), types of intervention (support vs sensitivity vs maternal representation), characteristics of the target population and length of treatment.

Bakerman-Kranenburg et al (40) define the following characteristics of the most effective interventions to promote maternal sensitivity and to a lesser extent secure attachment:

- Narrow focus on sensitivity alone
- Between 5-16 sessions
- After 6 months of age (no advantage in ante-natal implementation)
- Studies including fathers showed increased sensitivity in fathers but dilution of effects on mothers.
- The use of video increased effect sizes for sensitivity but decreased them for attachment although still effective.

Interventions using these criteria were effective regardless of the presence or absence of multiple family problems, and more effective in the clinically referred or those with a higher percentage of insecure attachment relationships. The authors put this down to the clinically defined groups having particular problems that could be directly addressed by the programme, but it may also be due to a greater possible room for change in a more deviant group.

The interesting conclusions that fathers' interactions were enhanced in joint mother-father interventions suggests that fathers should be offered the same types of interventions as mothers, but the reduction of the beneficial effects on mothers' interactions suggest that the interventions might be more profitable if offered to fathers and mothers separately.

Lengthy, intensive programmes based on a combination of sensitivity, representation and support show what the authors call "disappointingly small or even negative effects" on attachment. However, involvement in such a programme may have positive effects on other outcome measures and attrition of control groups undermines the findings of several studies.

Video feedback and cognitive-behavioural based interventions
Mellow Babies (47) is a focussed programme using cognitive-behavioural interventions for the mothers and video feedback to intervene in parenting. It runs for one day a week for fourteen weeks for mothers and babies under a year. A randomised waiting list control study is underway but an uncontrolled study showed very high rates of treatment completion in a deprived group with postnatal depression. The mothers became less depressed and observed positive interaction with their babies increased while negative interaction decreased.

The Sunderland Infancy programme was developed and evaluated by Svanberg et al (48). Using the Care Index to analyse brief video-taped interactions, health visitors

were able to divide mother-infant pairings into those who were well attuned, those for whom some brief feedback would be helpful and a sub-group who were at risk of poor attunement. A video-based intervention was used and the rate of insecure attachment in the high-risk group diminished as compared with untreated controls.

Section 5: **Working with infants, parents and carers - recommendations**

Good infant mental health is not a specialist topic. The conditions to foster good social and emotional development, which will also foster good cognitive and language development, should be promoted for all babies.

Good public information and health improvement information can be made available very easily using electronic, poster and television advertising. Inevitably, information, and the will and resources to implement recommendations will be more easily accessed by families who are best resourced in other ways. Some families will need additional support and other more intensive therapeutic interventions.

Evidence of the high importance for infants of communication from the earliest hours of life is becoming more emphatic. Knowledge of the evidence, making information available to all families and providing the means to use it is an interagency responsibility.

Training and staffing
Please consult Section 2: Recommendations for training and staffing.

Materials and resources for health improvement
Please consult Section 3: Recommendations for awareness raising and pre-pregnancy education.

Services
Services to support infant mental health are likely to come from a variety of professionals and in a number of settings. The need for interdisciplinary training and interagency implementation is clear. Education, health, social services and workers and organisations from the voluntary and statutory sectors are all in a position to deliver messages and support for infants and their families.

Core services

Antenatal classes
We recommend that antenatal classes, particularly for vulnerable families, should be offered, for example, through Family Learning Centres or Sure Start centres at around 20 weeks gestation concentrating on infant capabilities and parental responsiveness. The *Social Baby* or *Getting to Know You* videos/DVDs would make useful bases. Simple messages about the value of baby slings and backward facing buggies could be incorporated.

Neonatal and infant behaviour assessment demonstrations
We recommend that the Brazelton NBAS (16) to be demonstrated to parents before discharge from maternity units to raise their understanding of the competence of their babies and the primary significance of relationships from the earliest days of life.

We recommend that parents complete the MABI (8) every week for the first month of the baby's life. This should be reviewed with them by the health visitor/public health nurse and would fit well with *Hall 4* (5) recommendations about intensive health visitor/public health nurse involvement in the first 8 weeks. It has a role as a means of raising the awareness and involvement of parents but would also provide a systematic basis for decision-making and targeted intervention for those with additional needs.

Baby carriage arrangements, responsiveness and conversation
We recommend the use of soft baby-carriers, work-books on responsiveness and a videotape on responsive meal-time conversation. Health visitors/public health nurses should promote the use of these simple low-cost measures.

Baby massage
We recommend that baby massage on a group or individual basis should be offered to all mothers.

Engaging fathers
Health visitors/public health nurses should consider making particular efforts to engage fathers in the early weeks and using structured tasks such as baby bathing and massage to promote paternal confidence and involvement with their baby.

Bookstart
*Bookstar*t (Ward, www.booktrust.org) (30;31) should be maintained to support early joint attention to conversation and books. Experience has shown, however, that to use the opportunity that *Bookstart* offers, parents need to be made aware of its value by their health visitor (12). Without this bridge, parents fail to appreciate that their babies can begin to take an interest in books even in their first months of life. Currently, *Bookstart* bags are given out at the eight-month child health surveillance visit, which will cease to be routine at the implementation of *Hall 4 (5)*. An additional means of contacting families will be needed.

Infant mental health video/DVD
Health visitors/public health nurses should have available copies of infant mental health videos/DVDs to supply to all new mothers. *Ready, Steady, Baby* has proved a useful resource antenatally, but more targeted infant mental health information could be made accessible in audio-visual form.

Access to specialist consultants in infant mental health
Universal services offered by Tier 1 and 2 professionals, including early years professionals, social work and voluntary organisations, should have access to specialist consultants from Child and Adolescent Mental Health for case consultation, supervision and referral if necessary. Psychologists, psychiatrists, child psychotherapists and other professionals with a particular expertise, who would all be expected to have undertaken specialist training such as the proposed HeadsUpScotland module in Infant Mental Health, could offer such a resource.

Interventions for additional needs

Validation of interventions
It is recommended that all interventions should either be validated experimentally or conform in principle to the characteristics identified by Bakermans-Kranenburg et al (40). Interagency training and communication, along with the recommended professional supervision and case consultation by trained infant mental health specialists, should underpin services for families with additional needs.

Sensitivity-focussed interventions
It is recommended that sensitivity-focussed interventions of 5-16 sessions should be offered to mothers and fathers separately.

Home visiting, hard-to-reach group and antenatal contacts
There is no strong evidence that home visiting programmes have specific advantages. However, those seeking to engage hard to reach groups may need to consider this as an option at least in the initial stages. Similarly, making antenatal contact may not be essential in low-risk groups but may be necessary to start to build a relationship with the hardest to reach families.

It is not recommended to implement single antenatal contact with a health visitor/public health nurse who is not the allocated worker as this is unlikely to be helpful.

Video feedback and group programmes
The use of video feedback and group programmes is recommended particularly for teenage and socio-economically deprived groups.

Intensive interventions

It is recommended that interventions should either be validated experimentally or conform in principle to the characteristics identified by Bakermans-Kranenburg et al (40).

The Sunderland Infant Programme has been shown to be of value, as has Mellow Babies. Both require further evaluation but can be recommended as promising models of intervention.

Section 6: **Measures**

This section lists questionnaire, observational and professional-completed ratings of infant mental health.

Those listed were identified by the literature search undertaken in preparation of this Guide. Among them are measures of infant temperament and behaviour, and of parent-child relationships. Measures that address only infant development of neurological status are not included.

Other constructs are of course relevant to infant mental health, including broader aspects of family functioning and parental mental health. These were considered to be beyond the scope of this review.

Parental questionnaires

Measure Reference	Age of application	Nature of measure	Reliability	Validity
CLIP (Clinical Interview for high-risk Parents of Premature Infants) **Meyer et al (1993)** (49) Data from Keren et al (2003) (50)	High-risk neonates	Semi-structured interview with 2 factors; Readiness for motherhood and maternal rejection	Inter-rater (r = .86)	Observed maternal adaptation Maternal touch Infant withdrawal Maternal depression
ITSEA (Infant-Toddler Social and Emotional Assessment) Carter & Briggs-Gowan (2000) (51) Data from Carter et al (2003) (52)	12 – 36 months	169 item parental questionnaire	Test-retest Domains 0.82 to 0.90 Scales 0.69 to 0.85	Acceptable to parents CBCL, CCTI, BAI and CESD correlations with domains
BITSEA (Brief Infant-Toddler Social and Emotional Assessment) Carter & Briggs-Gowan (2002) (53) **Data from Briggs-Gowan et al (2004) (53)**	12 – 36 months	42 item parental questionnaire derived from ITSEA	Internal consistency: Problem scale (α = .79) Competence scale (α = .65) Test-retest: Problem scale (intraclass correlation coefficient = .87) Competence scale (intraclass correlation coefficient = .85) Inter-rater: Problem scale (intraclass correlation coefficient = 0.68) Competence scale (intraclass correlation coefficient = 0.61)	Successfully detected 95% of children with clinical CBCL scores. Predictive of CBCL and ITSEA competence and problem scores 1 year later.

ASQ:SE (Ages and Stages Questionnaires: Social-Emotional) Squires et al (2002) (54) Data from Squires et al (technical report)	3 – 66 months	Parental questionnaire with 21 – 32 items depending on age	Internal consistency – Cronbach's coefficient alpha from 0.67 to 0.91 over age intervals Test-retest agreement 94%.	Acceptable to parents Concurrent validity using CBCL and SEEC, sensitivity 70.8% to 84.6%, specificity 87.8% to 94.0%, underreferral 2.4% to 4.7% and overreferral 3.0% to 8.6%. Children deemed to be in an "at-risk" group had higher scores than children in the "no risk" group.
CAPI (Child Abuse Potential Inventory) Milner (1986) (55) Data from Chaffin & Valle (2003) (56)	Not given	160 item self-report questionnaire	Test-retest = .91	Added to predictive validity of demographic variables. Scores decreased post intervention.

Observational measures

Measure Reference	Age of application	Nature of measure	Reliability	Validity
Quantitative Observation Greenspan (1989) (57)	4-12 months	Semi-naturalistic playroom observation	Not tested	Not given
PIOG (Parent-Infant Observation Guide) Hans et al (1991) (58)	4-15 months	Clinical observation in naturalistic community setting	Inter-rater 0.64 – 0.95	Older maternal age Maternal wellbeing Hostility to child Maternal drug use and delinquent behaviour
Interaction Rating Scales Clark et al (1985) (59)	0 – 18 months	Rate interaction from video of free play at clinic	Inter-rater 89% agreement	Improvement during interaction coaching. Significantly better performance changes on Bayley scale and Uzgiris-Hunt scores
Infant HOME (Home Observation for Measure of the Environment) Caldwell & Bradley (1984) (60) Data from Bradley & Caldwell (1988) (61)	0 - 36 months	45 items to score through a combination of observation in the child's home and a semi-structured interview with the parent/caregiver	Internal consistency – alpha coefficients range from 0.44 to 0.89.	The 6 HOME subscales are correlated to cognitive performance (0.3 – 0.7). This strengthens up to age 3 and is higher when HOME and cognitive measures are administered more closely in time.

SHIF (Supplement to the Home for Impoverished Families) Ertem et al (1997) (62)	0 – 36 months	20 items added to the HOME regarding basic needs	Inter-rater reliability HOME items Kappa 0.76 to 1.0 SHIF items Kappa 0.79 to 1.0 Internal consistency HOME 0.80 SHIF 0.63 HOME + SHIF 0.85	Correlation between SHIF and HOME total scores (r = 0.69) Correlation between SHIF + HOME and NCAFS (r = .57). SHIF + HOME and NCATS (r = .43)
CARE index Crittenden (1988) (63) Data from Crittenden (1992) (64)	11 months	Coding system for video footage of parent-child interaction.	Inter-rater agreement 85%	Not given
PROCESS (Pediatric Review of Children's Environmental Support and Stimulation) Casey et al (1988) (65) Data from Casey et al (1993) (66)	8 months	Observation by home visit	Not given	HOME (12 & 36 months) Observed interaction (30 months) Bayley scales (12 & 24 months) Stanford Binet & CBCL (36 months)
AMBIANCE (Atypical Maternal Behavior Instrument for Assessment and Classification) Bronfman et al (1999) (67) Data from Goldberg et al (2003) (68) and Grienenberger et al (2005) (69)	10 – 14 months	Instrument to code atypical maternal behaviour during the strange situation	Inter-rater (total scores) = .79 (Goldberg et al, 2003)	Predictive of infant attachment and predicted by maternal reflective functioning scores (Grienenberger et al, 2005)
Strange Situation (Ainsworth et al, 1978) (70) Data from Solomon & George (1999) (71)	12 – 20 months	Classification of attachment based on infant's behaviour	Inter-rater agreement 80% to 88% (when including disorganized/disorientated group). Short term stability from 50% to 96%.	Predictive of mother-child interaction

Rating scales

Measure Reference	Age of application	Nature of measure	Reliability	Validity
PIRGAS (Parent-Infant Relationship Global Assessment Scale) Zero to Three (1994) (72) Data from Aoki et al (2002) (73)	20 months	Scale with 3 components; Behavioural quality of the interaction, affective tone and psychological involvement. Rates level of relationship adaptation between mother and infant.	Inter-rater r = .83	Significantly related to mother's help and support. Predictive of infant compliance and infant positive relatedness.
KFSI (Kempe Family Stress Inventory) Carroll (1978) (74) Data from Korfmacher (2000) (75)	Pregnancy onwards	10 item rating scale based upon responses to parental psychosocial interview	Reliability based on independent re-rating of interview notes r = .93.	Sensitivity 80% - 89% - 97% Specificity 89% - 28% - 21%
D-C: 0-3 Diagnostic Classification Zero to Three (1994) (72) Data from Skovgaard et al (2005) (76)	0 – 36 months	Multiaxial classification system	Inter-rater: Axis I κ = 0.72 Axis II κ = 1 Axis III κ = 0.71 Axis IV number κ = 0.47 impact κ = 0.55 Axis V κ = 0.71 Test-retest: Axis I κ = 0.74 Axis II κ = 1 Axis III κ = 0.72 Axis IV number κ = 0.68 impact κ = 0.57	Not given

PCERA (Parent Child Early Relational Assessment) Clark (1985) (77) Data from Kemppinen et al (2005) (78) Raiha et al (2002) (79)	0 – 84 months	Video-based assessment of parent-child interaction. Measures the affective and behavioural characteristics of both parent and child.	Axis V κ = 0.84 (Video tape vs direct observation) Inter-rater κ = 0.294 to 0.413 (between several raters) κ <0.40 to 1.00 for items (as rated by raters with highest level of agreement) Inter-rater Mother-infant interaction 0.79 Father-infant interaction 0.82	Not given

Section 7: **Further information, reading and resources**

Audio-visual material

Getting to Know You: Recognising infant communication and social interaction. Northern Beaches Child and Family Health Services and New South Wales Institute of Psychiatry.

The Social Baby: Understanding Babies' Communication from Birth. NSPCC 2004 www.nspcc.org.uk

First years last forever. http://store.parentsactionstore.org

Websites and online information communities

www.bounty.com
www.huggiesclub.com
www.pampers.co.uk
www.boots.com/parentingclub
www.babygrapevine.com
www.fathersdirect.com
www.midwivesonline.com
www.babycentre.co.uk
www.babyworld.co.uk
www.ivillage.co.uk/pregnancyandbaby

A comprehensive list of further reading and the results of an on-line search is available at the HeadsUpScotland website www.headsupscotland.co.uk

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