



Parent-Infant

— FOUNDATION —

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Development and Implementation Toolkit: Chapter 8

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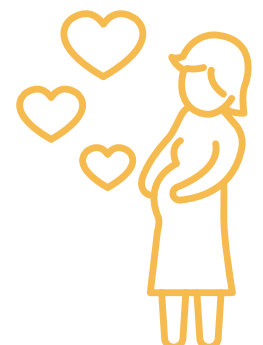
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Disclaimer

This toolkit, comprising eight chapters and additional resources, provides information of a general nature for anyone setting up a specialised parent-infant relationship team. It has been prepared to promote and facilitate good practice in the United Kingdom in commissioning, implementation and clinical practice. This toolkit includes published evidence and expert opinion which is current at the time of publication.

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This toolkit is due for review by January 2021.



Chapter 8

Chapter 8 Managing Data and Measuring Outcomes

This chapter will help you understand outputs, outcomes and impact, how to measure them and how to manage the data. We include some insights and examples from existing parent-infant relationship teams. At the end of the chapter there is a table of measurement tools describing their properties and utility for clinical assessment and outcome measurement.

"Good feedback is the key to improvement."¹

The purpose of measuring outcomes

There are several good reasons to invest in measuring outcomes:

1. Being sure the intervention is safe and works

Many sensible ideas to improve the world turn out to be unexpectedly harmful when their outcomes are measured. The most notable example is the Scared Straight programme, an American programme to deter at-risk young people from committing crime, but which led to increased recidivism².

There is increasing attention being paid to the "dark logic" of interventions³, whereby well-intentioned programmes have unintended negative consequences.

Outcome measurement is therefore essential to ensuring safe, effective practice.

2. To assure funders that the work delivers the desired outcomes

In most circumstances, the clear reporting of outcome measures is crucial to the maintenance of funding. Some interventions do not achieve all their expected outcomes but may achieve some unexpected ones. Funders are usually keen to understand what outcomes their money is achieving and so may want clear explanations/training on what the measures tell them.

3. Quality improvement

Collecting, reviewing and understanding outcomes is an essential part of the quality improvement cycle.

4. Understanding what works for whom

Outcome measures help teams to better understand which interventions work for which groups of families.

1. Bill Gates

2. National Institute of Justice. Practice profile: Juvenile Awareness Programs (Scared Straight). <https://www.crimesolutions.gov/PracticeDetails.aspx?ID=4>

3. Bonell C, Jamal F, Melendez-Torres GJ, et al. 'Dark logic': theorising the harmful consequences of public health interventions. *J Epidemiol Community Health* 2015;69:95-98.



The Early Intervention Foundation has produced "10 steps to Evaluation Success"⁴ which helpfully covers a range of evaluation topics including Theories of Change, logic models and testing for effectiveness.

Defining outputs, outcomes and impact

There are lots of different definitions of outputs, outcomes, impacts and the relationships between them. These terms are unhelpfully used interchangeably. The following information is not presented as a definitive text, but as a helpful guide with references to further sources of useful information.

Outputs are what your service produces⁵ as a result of your activities. Activities are the things you do (e.g. individual work or groups) and outputs are what those activities generate. They are usually easy to measure because they are described in volume terms, e.g. 6 families attending a group; 1 family attended 4 individual sessions; 2 training courses, etc. You might say "We ran four Mellow Babies groups (activities) which were attended by thirty parents in total (outputs)".

Outcomes are the effect, value or achievements that result from of your work. They are usually described in change terms, e.g. 30% improvement in parental sensitivity; 15 people have now qualified; 5 points reduction in anxiety, etc. Outcomes should not just be "a sandwich of good intentions"⁶; they should be what your work is focussed on. Some commissioners adopt the Outcomes-Based

Accountability (OBA) framework to ensure providers are focussed on delivering outcomes. If this is the case with your commissioners, we would recommend the **National Children's Bureau report on OBA**⁷ as a starting point and that you enquire about whether there is local OBA training available.

Short-, medium- and long-term outcomes

In our example Theories of Change, we use "short-term outcomes" to describe the outcomes that come about during the intervention, such that they can be seen or measured by the end of the intervention.

We use "medium-term" to mean after the intervention is finished (exactly how long depends on a number of factors including the nature of the intervention and what length of follow-up is planned). "Long-term outcomes" are different in that they are outcomes for a population, community or society and so this is the same as "impact". Hence, impact (long-term outcomes) tends to be the cumulative result of your short- and medium-term outcomes having been sustained over the long term.

Long-term outcomes ("impact") are the hardest to measure since they are what we hope our efforts will accomplish but are often uncertain, unpredictable or too long-term to measure.

Outcomes and impact should be presented with your audience's priorities in mind.

4. Asmussen, K., Brims, L., & McBride, T (2019). 10 steps for evaluation success. The Early Intervention Foundation, London. <https://www.eif.org.uk/resource/10-steps-for-evaluation-success>
5. Fritz, J. (2019). How to Talk About Non-profit Impact from Inputs to Outcomes. Inputs, Outputs, Outcomes, Impact - How are they Different? <https://www.thebalancesmb.com/inputs-outputs-outcomes-impact-what-s-the-difference-2502227>
6. Drucker, P (2011). Chapter 1 – The Commitment. The World According to Cheever Blog. <https://theworldaccordingtocheever.blogspot.com/2011/03/peter-drucker-chapter-1-commitment.html>
7. National Children's Bureau. Outcomes Based Accountability (OBA): Guidance. What is OBA and how can NCB help you with it? <https://www.ncb.org.uk/resources-publications/outcomes-based-accountability-oba-guidance>

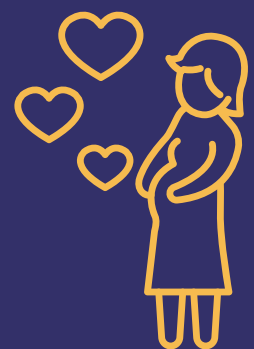


Long-term outcomes are affected by multiple factors so it is rarely possible to say your intervention definitely, and solely, caused the long-term impact, more that the work contributed to it. For example, a crime prevention initiative in 2019 may have contributed to, but not been the sole cause of, a reduction in offences in 2020: the appalling bad weather was another contributory factor (persistent rain is a known factor in reducing offence rates).

Medium- or long-term outcomes might be used as Key Performance Indicators (KPIs) by your funder/commissioner. Theories of Change lay out your evidence-based theoretical arguments as to why your short- and medium-term outcomes can feasibly be thought to contribute to KPIs, so ensure you think about local strategic priorities when creating your Theories of Change.

Distinguishing between short and medium outcomes helps practitioners and evaluators better understand when they should measure outcomes appropriately.

Failure to think carefully about when outcomes are likely to come about runs the risk of measuring outcomes too early or too late which can lead to ill-informed conclusions about the effectiveness of a service.





Activities, reach, outputs, outcomes and impact might be described like this:

Activity: We have delivered 286 individual sessions for referred families.

Reach: These sessions were delivered to 28 different families living in the CV34 and CV35 postcodes.

Outputs: 68% of the sessions were 'attended as planned', 20% of sessions were 'cancelled in advance', 12% of sessions were 'not attended and no prior cancellation'.

Short-term outcomes

20 (71%) families were assessed as having an improved parent-infant interaction between their first and last session, using the KIPS scale; 22 (79%) parents reported a clinically-significant improvement in mental health as measured by the HADS.

Medium-term outcomes

At six-month follow-up, 24 (86%) infants were assessed as demonstrating improved initiation of interaction with their parent; of 8 infants who had been on a Child Protection Plan at time of referral, 6 had come off their plan with no further social care involvement.

Long-term outcomes/impact

All 28 families seen have benefitted in some way; 86% of parent-infant dyads show improved interaction, an early precursor of improved emotional regulation which is proven to contribute towards school readiness; 6 infants (75% of those on a Child Protection Plan at time of referral) came off plan within six months of their last session. This contributes towards the local priority of reducing the number of children requiring long term social care input.

Sourcing evidence about outcomes and impact

Research in Practice (rip.org.uk) is a charity which helps organisations and individuals in England and Wales to access, understand and apply evidence in their work with children, young people and families. They bring together findings from academic research, the expertise and insights of practitioners, and the expertise and experiences of children and families.

RiP have created a model of Evidence-Informed Practice⁸ to represent these three sources of evidence. Their members can **access learning resources and opportunities** via RiP's national **Partnership network**.

The Research in Practice model of Evidence-Informed Practice relates to individual practice but we also recommend it as a useful blueprint for the collation of outcomes evidence: one third of the information should come from research and academic evidence, one third information from practice expertise (i.e. practitioners' views of the work) and one third information from service users/beneficiaries and other stakeholders.

These three components can be translated into relevant questions, such as:

- 1. Is the team delivering work that is based on the latest research and evidence?**
Chapter 2 The Case for Change and Chapter 4 Clinical Interventions and Evidence-Informed Practice can help you answer this.
- 2. Do expert practitioners consider this to be valid and effective work?**

The responsibility to ensure clinically valid and effective work falls to the team's clinical lead. The Parent-Infant Foundation is currently developing a set of Quality Standards for teams which will be co-created with practitioners.

8. Research in Practice (2011). Evidenced informed Practice updated 2018.

3. Does the data from a range of stakeholders including service users/beneficiaries show the work to be effective?

The information below focusses on collecting and analysing data from a range of sources.

Evidence relating to clinical-level vs system-level outcomes

Outputs, outcomes and impact can be measured at different levels to provide insights into different aspects of the team's work.

Clinical-level refers to changes in individual families, system-level refers to changes in the wider system around the team, including at a community or local population-level. This is not a rigid distinction, simply a suggested way for you to approach evidence gathering and reporting methodically.

Clinical-level evidence includes the number and types of sessions delivered to individual families and changes in pre- and post- intervention clinical scores e.g. the percentage increase of parental sensitivity over time. System-level evidence includes the number of local workers trained or offered consultations and how that work has been rated or created change locally in the system, for example by increasing professional skills in identifying children at risk.

Your clinical-level and system-level Theories of Change should map onto the same long-term impact. Theories of Change help clarify the team's purpose and clinical objectives and how they lead to the desired impact. They can also help with decisions such as which interventions to use and which training to invest in. We strongly recommend parent-infant relationship teams develop their own Theories of Change, ideally with local stakeholders, or use our templates (system-level in Chapter 3, clinical-level in Chapter 4).





An example of a system-level Theory of Change: the impacts of specialised parent-infant relationship teams on a local system

The problem

- At least 15% of new babies experience complex or persistent relationship difficulties with their parent/carer(s). Without specialised help these unresolved problems can undermine a range of life outcomes and families may require future specialist interventions including in the most severe cases, a child being taken into care
- Unresolved parent-infant relationship difficulties can be passed on to future generations of parents leading to inter-generational distress and additional high costs to the public purse
- The complex and persistent nature of some parent-infant relationship difficulties are beyond the scope of universal or typical early help support, and need specialised, multi-disciplinary intervention

Contributing Factors

- Frontline practitioners may lack confidence or awareness to identify early relationship problems and provide or refer families to appropriate support
- The right kind of specialised help may not be available locally
- Local leaders, including commissioners, may be unaware of the importance of parent-infant relationships or face a lack of local strategic co-ordination in supporting the work

What P-I teams do

- A variety of direct therapeutic work to address and improve the difficulties in the parent-infant relationship
- Training, consultancy and campaigning to raise public and professional awareness and improve workforce capacity to protect and promote the parent-infant relationship
- Act as "systems champions" by facilitating local networks and working with local leaders and organisations to improve awareness, co-ordination and decision-making

Short term outcomes

- Improved parent-child attunement and interaction (a direct outcome of work with families and an indirect outcome of work with other professionals)
- Improved capacity for the public and professionals to identify and support babies and their parents
- Improvements in how organisations work separately and together, so that babies can receive timely and appropriate support

Medium term outcomes

- More children benefit from a sufficiently secure and nurturing relationship with at least one parent/carer
- Local cost savings as fewer children need to be referred to speech therapy, early help, children's services, CAMHS, paediatrics, or special educational needs services for problems rooted in parent-infant relationships

Long term outcomes

- More children experience better social, economic, physical and mental health outcomes across the lifecourse
- Fewer children move into the Looked After system
- Fewer children need mental health support as older children or adults for attachment-related difficulties
- Fewer families experience the transmission of parent-infant relationship difficulties into the next generation



An example of a clinical-level Theory of Change

The problem

- Not every child has access to a sufficiently secure relationship with at least one permanent adult carer

How the problem develops

- Unresolved parental traumas from the past ("ghosts in the nursery") or present can be translated into parental states of mind that get played out in maladaptive ways and these damage the interactions with the baby
- Aspects of the parent's behaviour can lack sensitivity or capacity for appropriate responsiveness leading to distress in the baby
- Aspects of the baby's behaviour can trigger unresolved traumas in the parent, leading to stress or lack of pleasure from parenting

How we can change this

- Address the states of mind and interactional behaviour of the parent that negatively impact the baby. Give meaning to why these occur and how they can be changed
- Improve reflective functioning and parental capacity to provide emotional regulation for their infant
- Improve infants' capacity to engage confidently and feel secure with parent

Activities

- Offer families a variety of direct therapeutic approaches (with the parent-infant dyad but sometimes also with the family triad, the parental couple without the baby and/or with parents individually) which:
 - Address parental unresolved traumas, current stressors, anxieties and risk factors
 - Support parents' strengths to improve parental sensitivity, mentalisation and reflective functioning
- Signpost and facilitate contact with a range of other services which can address current stressors (such as housing, financial stress, substance misuse, parental conflict/relationship strain)

Short-term outcomes

- Decreased traumatising behaviour by the parent towards the baby, reduced sense of stress with the baby, improved parental empathy, consistency and motivation
- Parent and infant feel safe with each other, improved warmth in the interaction, improved attunement and more developmentally appropriate interactions
- Improved infant invitation and initiation of interaction with adults including parents
- Improved assessment and support of the family's needs, child protection issues and the parent's capacity to change

Medium-term outcomes

- Improvements in parent's capacity to sustain emotional and behavioural self-regulation
- Quality of parent-child relationships for indicated child and siblings is improved
- Child is more relaxed, with improved social and emotional development
- Improvements in parents' openness to trusting relationships with helping professionals and in the effectiveness of professional assessment and support

Long-term outcomes

- Improved likelihood of child securing better physical and mental health, social, emotional, cognitive and language development
- Reduced risk of child needing referral to speech therapy, early help, children's services, CAMHS, paediatrics, or special educational needs services for problems rooted in parent-infant relationships
- Reduced risk of transmission of parent-infant relationship difficulties into the next generation



Gathering local data and evidence

There is a range of ways to gather objective local evidence about outcomes, including:

- Setting clinical goals and reviewing progress against them, e.g. **Parent and Baby Outcomes Star**^{TM9} or the Goals-Based Outcomes (GBO) from Children and Young People's IAPT dataset
- Using self-report or observational measurement tools and tracking progress over time, e.g. HADS or ASQ:SE2
- Gathering quantitative participant feedback e.g. training evaluation feedback forms

Setting and monitoring clinical goals

Many practitioners set goals with the families they work with as a way of mutually agreeing the terms and focus of the work. How well the goals have been achieved by the end can be measured as an outcome. This can be done effectively in an informal way but there are some helpful tools and information available if required from sources such as **Child Outcomes Research Consortium (CORC)**¹⁰.



The current CORC advice around setting and monitoring clinical goals is:

1. Set the goals over the first three sessions of the intervention/assessment

Some clients come with very clear ideas of the goals they want to achieve, others take a little longer to decide. It may not take three sessions to agree goals with clients but all goals, if they are going to be used as measures for outcomes, should be fixed in the first three sessions.

2. Record up to three goals

Three is probably a good number of goals to be getting on with but it's not a limit. Record how close the family feels they are to reaching the goal at the outset of the work on a scale from zero to ten where 'zero' means the goal is not met in any way, 'ten' means the goal is met completely and a rating of 'five' means they are half way to reaching the goal.

3. Review regularly and reflect

Reviewing the goals in order to discuss progress can be done at every session, or frequently throughout the work. At the end of the work, record how close the family now feels they are to their goal, on a scale 0-10. The difference in scores between the start and end of the work provides a numerical measure of progress.

Whilst not specific to parent-infant work, **the goal setting worksheet by Choices in Recovery**¹¹ demonstrates how a simple goal setting sheet can be user-friendly.

9. Triangle Consulting Social Enterprise Ltd. Parent and baby Outcome StarTM The Outcomes Star for perinatal mental health and well-being. <http://www.outcomesstar.org.uk/using-the-star/see-the-stars/parent-and-baby-star/>

10. Child Outcome Research Consortium. <https://www.corc.uk.net/>

11. Janssen Pharmaceuticals, Inc. (2015). Choosing your Goals. Choices in Recovery. http://www.choicesinrecovery.com/sites/default/files/Worksheet_1_ChoosingYourGoals.pdf



The ABCPiP practitioners in Ballygowan, Northern Ireland are trained in the Parent and Baby Outcomes Star™, a licensed tool to support early conversations with families about what their hopes are for the work, the issues they want to work on and to track progress against these issues over time.

Roberta Marshall and Janine Dougan, clinical co-managers of the team, told us “we do find the Parent and Baby Outcomes Star a useful tool, not just for measuring progress but also for having a helpful conversation about what the family want from our work together”.

More details can be found at:
<http://www.outcomesstar.org.uk/using-the-star/see-the-stars/parent-and-baby-star/>

It is worth noting that the Early Intervention Foundation views outcome stars as useful tools for engaging parents and discussing progress, but not as a validated way of assessing outcomes¹².

Using self-report or observational measurement tools to track progress over time

Some measurement tools are suitable for both clinical assessment and pre- and post-outcomes measurement, and this can save time and effort on the part of practitioners. Some clinical assessment tools are not statistically validated for test-retest situations and therefore, strictly speaking, should not be used for outcomes measurement. However, the parent-infant relationship field is not replete with validated, low-cost measures which are quick and easy to administer and score, so some of the most clinically-useful tools are put to use locally as outcome measures. The alternative would be practitioners using additional academic outcome measures on top of their clinical assessment tools which would be burdensome and impractical, but one should bear in mind these statistical limitations.

At the end of this chapter, you will find tables of information about self-report, interview and observational measurement tools relevant to the work of specialised parent-infant relationship teams. Where available, we have included weblinks for further information about evidence, how to acquire the tool and where to receive training.

12. Personal correspondence, 4 Sep 2019.



The PIP teams' approach to assessment and outcome measures

The description below may help you to think about how to construct your own suite of assessment and outcome measures. The information here is not intended as a prescriptive approach to outcome measurement: the parent-infant relationships sector does not have one standard set of recommended tools.

Where available, the gold standard outcome measure for parent-infant work is formal assessment of attachment security. This provides a reliable and clear indication that change has occurred in the parent-infant relationship. However, this is often impractical for routine clinical use, as it can be time-consuming and require special training which is often expensive.

The vast majority of specialised parent-infant relationship teams use quicker, cheaper methods such as video observation, questionnaires and information-gathering from other sources.

The nine Parent Infant Partnership teams (PIPs) used a collection of measures chosen both for their clinical application and for the way they 'triangulate' the infant and the caregiving relationship. These demonstrated to potential partners and commissioners that there were good, evidenced, measures in place for service evaluation.

All scores are collected on the Parent-Infant Foundation Data Portal in a way that removes "personally-identifying details".

1. Changes to the family's levels of risk and stress

The Risks and Stresses checklist developed by Gloucestershire Infant Mental Health Team¹³ is used by those referring into a PIP team, and is later updated by clinicians, to profile the details of those families who are engaged with the service. These are factors in parents' lives that can have a negative impact on the caregiving relationship.

2. The quality of the caregiving relationship

This is assessed using the 'Levels of Adaptive Functioning' (LOAF) section from Zero to Three's DC:0-5. This assesses the prime caregiving relationship as well as the wider caregiving environment. It also provides detailed guidance for diagnosing a relationship-specific disorder in infancy.

3. Child's social and emotional development

The Ages and Stages Questionnaire (Social and Emotional; 0-2) produces a score which can be compared to the benchmark cut-off for each age; above this indicates a serious difficulty.

The ASQ:SE2 can be used to demonstrate that the infant has attained, or remained on, an acceptable pathway of social and emotional development in a situation when this might be jeopardized. A reduction in the mean score, whether below or above the cut-off, indicates an improvement in social and emotional functioning.

13. The Wave Trust (2013). Conception to 2: Age of Opportunity. Appendix 2C p.89.
<https://www.wavetrust.org/conception-to-age-2-the-age-of-opportunity>

4. Parental Mental Health

The Hospital Anxiety and Depression Scale (HADS) has seven questions each for anxiety and depression and takes about 5 minutes to complete. It enables early identification of both, each of which can leave less space in the caregiver's mind for the baby.

5. Parenting Interactivity

The Keys to Interactive Parenting Scale (KIPS) is a coded video observation and gives a way of assessing twelve different aspects of parenting behavior from about 10 -15 minutes of interaction. KIPS produces clinically-useful information that may be fed back to caregiver using interaction guidance since it can pinpoint

clearly defined strengths. Here too the mean score is significant, with any increase showing an observable improvement in the interaction between caregiver and child.

6. Parent satisfaction questionnaire

A final parent-completed satisfaction questionnaire covers the parent's experience and observations. They can also be used with a change of tense from 'was' to 'is' to monitor the therapeutic contract while treatment is in progress. Graded answers on a Likert rating scale means that responses can be recorded quickly and easily and there should also be space for free text.





Gathering quantitative participant feedback

Traditional participant feedback/parent satisfaction questionnaires tend to lean towards factors that affect 'acceptability' rather than measuring outcomes, although outcome questions can also be included. For example, training feedback forms tend to ask about the venue, the agenda or the speaker (satisfaction/acceptability) rather than whether the delegate has learned anything new (short-term outcome).

Without outcomes questions, these forms tell us little about the effectiveness of a service in bringing about identified outcomes/changes but can be valuable in gauging the temperature of a person's experience or getting feedback about specific aspects of service provision.

'Participants' might include families who have participated in therapy, colleagues who have participated in consultation or delegates that have participated in training. There are lots of examples on the internet of participant feedback/parent satisfaction questionnaires which generate numerical data, we have provided some examples of parent evaluation feedback forms and training evaluation forms in the Network area of the Parent-Infant Foundation website. Evaluators may also find the Kirkpatrick Model¹⁴ helpful.

There are more examples at <https://www.sampleforms.com/parent-feedback-form.html>.

A note about electronic administration

Survey Monkey, MS Forms and other free, specialised software can make the administration, scoring and analysis of simple forms quicker and easier via computer or tablet.

A word of caution: some published questionnaires are only free to use in paper format and require a licence to be acquired from the author before electronic administration can be used.

Electronic administration may assist you to better support parents who experience language, literacy, or sensory barriers.

Gathering the expertise and insights of stakeholders

The remaining two-thirds of the Research in Practice model of Evidence-Informed Practice relate to gathering the expertise and insights of two important groups of stakeholders: practitioners and families. Obviously, teams might also like to extend their evaluation reach to other stakeholders such as the local children's workforce, commissioners and other teams such as CAMHS.

This type of evidence can be collected through quantitative methods such as questionnaires or surveys, but this can miss the richness and nuance of qualitative feedback.

Using the same training evaluation feedback form for every training course, irrespective of the topic, makes data collection and comparison easier.

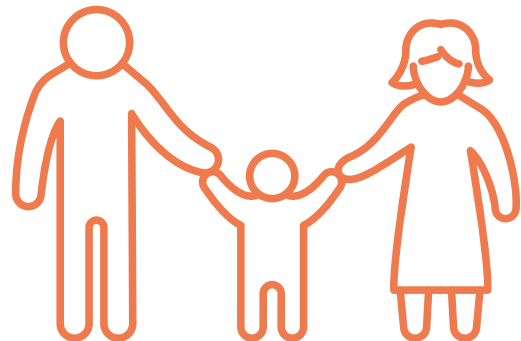
14. Kirkpatrick Partners (2019) <https://www.kirkpatrickpartners.com/Our-Philosophy/The-Kirkpatrick-Model>

In all data collection activity, it is crucial that the method and tools are sensitively designed to be appropriate to the audience and to the questions you are asking. There are numerous ways to collect information from practitioners and service users/beneficiaries, here are just a few:

- Ask practitioners to agree a closing statement with families which reflects the important aspects of their work together, the critical ingredients of the work that led to progress or the reasons for lack of progress, how the family and practitioner will remember the work and what it has meant to each of them. These vignettes can be anonymised and collated
- Ask families to draw or write on sticky-notes their experiences of the work. In groups, this can be a collective activity to include photographs and messages to one another, to form an album or poster
- Invite families to provide written or photographic accounts of their experience of working with the parent-infant relationship team
- Invite families to an informal and carefully-facilitated participation forum, where they can feedback to leaders about their experience of the service
- Invite families to participate in telephone feedback sessions
- Ask practitioners to identify key areas of focus and mechanisms of change in a particular piece of therapeutic work. Map these against the Theories of Change to see if they align¹⁵
- Collate anonymised parent letters and notes, of both thanks and of complaints
- Ask stakeholders to complete a timeline of their recent experiences of the parent-infant team. This can easily be done with lining paper and felt tips. It is a useful activity

to understand the temporal links between what has been delivered and the outcomes it has led to

- Ask stakeholders collectively to create an image of the system as it exists now (or before the parent-infant team existed) and how they would like it to look (or how it does look, now that the parent-infant team has been working for some time). This works well with small groups, such as a strategic board or local health visiting team
- Families sometimes agree to be filmed talking about the service they received
- Families can be invited to coffee mornings at the team's base or places where they work, such as the Neonatal Intensive Care Unit (NICU) to talk about service
- Some families could be invited to attend professionals' planning meetings to share their experience of the service



We acknowledge that this toolkit does not cover service user participation in any detail. The Parent-Infant Foundation is keen to gather experiences from across the Network and is engaging with other partners to support the development of resources on this topic.

We hope to have more detailed content for the review in a years' time.

15. With sincere thanks to Anna Freud Centre PIP for their insights into this exercise.



Statistical analysis of quantitative data

Local reporting requirements do not usually extend beyond having to show pre- and post-intervention changes in questionnaire scores. The clinicians in the parent-infant team are usually able to provide commentary about the clinical significance of such changes. However, for more formal purposes, such as planning to publish data in a journal or present it at an academic conference, some teams seek the reassurance of statistical analysis.

Psychologists are typically trained in statistical analysis although do not always have easy access to statistical analysis software. The Royal Statistical Society may be able to advise teams and, for those located in charities, may be able to offer some support from one of their pro-bono statisticians (www.rss.org.uk)

Data management

Outputs data

Output data is relatively straightforward to collect as it is simply counting activities and numbers. Most specialised parent-infant relationship teams use either data management software, such as the Parent-Infant Foundation's data portal, or spreadsheets that keep track of outputs as they occur. This is typically data provided by practitioners to the administrator for input, simple analysis and periodic reporting.

In our experience, teams often want to analyse their data by certain categories, for example how many referrals were antenatal vs postnatal, how many referrals related to children on a child protection plan, etc. This helps teams answer questions such as "are



we doing enough to raise awareness with our midwifery colleagues?” and “should we start a dialogue with children’s services commissioners about the increasing demand for work with babies?”. There is a balance to be struck between the burden of recording and analysing many data fields versus the utility of the data. We recommend that every field of data you collect is ‘actionable’ i.e. that it can be and is used to inform improvements during regular review.

Outcomes data

Some data management systems integrate clinical record keeping functions with the ability to collate and report clinical scores. System 1 is an example of a widely-used, large data management system (in the NHS) which can be adapted locally to collect pre- and post-intervention scores. Essex Partnership University NHS Foundation Trust have done this for their new Together with Baby parent-infant relationship team to assist outcome measure data collection. Where data management systems can’t do this, teams may be left to create their own spreadsheets which link families’ clinical records to separate databases of scores through the use of a unique identifying code number.

The Parent-Infant Foundation’s data portal is a free software offer being developed for early 2020. It will not offer a clinical record-keeping function but will allow teams to upload and draw reports on outcome measure scores easily, and to compare their own data to an anonymised, aggregated data set from other teams. This will save time in that teams will not have to design their own spreadsheets, and it will help teams to benchmark their own data against that of others.

For more information about how you can access this free software, please contact us directly through our website

www.parentinfantfoundation.org.uk.

Working with disadvantaged and vulnerable parents may alter engagement and attendance data.

We recommend the [Early Intervention Foundation’s 2019 Engaging Disadvantaged and Vulnerable Families](#)¹⁶ for an evidence review of this area.

Data-linkages to systems outcomes and long-term outcomes

Some specialised parent-infant relationship teams can access data from other local services and organisations which can be tracked back to the families they have worked with. For example, in some areas of Scotland there is comprehensive collection of SDQ scores for all 3-year-olds and this could facilitate interesting follow-up analyses of parent-infant relationship work.

Other examples might include the linking of a child’s parent-infant work with the team to their school readiness scores (EYFS or the new standardised reception assessments from September 2020), parental mental health screening scores as collected by health visitors, or standardised child development scores during mandated child health surveillance visits.

This kind of data sharing normally requires a formal information sharing agreement between all relevant partners which covers consent issues and GDPR responsibilities.

A word of caution about long-term or distal outcome measures: these are influenced by a range of factors such as the quality of childcare during pre-school years, or the socio-economic

16. Pote, I., Doubell, L., Brims, L., Larbie, J., Stock, L. & Lewing, B. (2019). Engaging disadvantaged and vulnerable parents An evidence review. The Early Intervention Foundation, London.

<https://www.eif.org.uk/reports/engaging-disadvantaged-and-vulnerable-parents-an-evidence-review>



experiences of the family and are therefore not generally used by clinical teams to evidence outcomes of one specific early-life intervention, unless already linked through their local authority. This echoes the points made above that Theories of Change are necessary to show how your interventions are believed to be linked to the intended long-term outcomes but you may not be able to prove causality through outcome measurement.

Cost-benefits data

At a local level, generating valid and reliable cost-benefits data about a team or intervention is cost-prohibitive for funders and we have yet to find a team which has been funded to complete such an analysis.

Globally, the parent-infant relationship research base is not sophisticated enough to generate meaningful calculations about the cost-benefits of how specific interventions map onto outcomes which would be relevant to UK commissioners. This does not mean that we cannot describe potential cost-savings or the general principle that prevention saves money, but it does make it difficult to attribute exact figures.

Even well-established universal measures, such as the Early Years Foundation Stage assessment cannot yet be confidently used to assess the cost-benefits of interventions in the first 1001 days. The Parent-Infant Foundation is currently working with economists to think about how to strengthen the research and data in order to begin to address this area.

The Nobel Prize-winning work of James Heckman embeds the principle that effective interventions pay the greatest returns on investment the earlier in the life course they are applied. There is ample neuroscientific evidence linking the quality of parenting and parent-child interaction to child development outcomes, and the Adverse Childhood Experiences studies demonstrate a clear life-long impact of childhood adversity. See

Chapter 2 The Case for Change for further information.

At a local team level, qualitative information about individual families, referral patterns and working practices which demonstrates positive change will support the principle if not the detail of cost-savings. For example: where social workers have been able to remove a child from a Child Protection Plan following the family's work with the team; where, following training, health visitors feel more confident to work with parent-infant dyads without referral to CAMHS; where a parent who has had a previous child removed into care is able to keep a subsequent child following work with the team; where specialised consultation has helped a social worker craft a more effective family support offer.

Reporting outcomes

Commissioners give us some consistent messages about how they prefer impact to be reported.

1. Co-creation

The format of how you report your outputs, outcomes and impacts is best co-created with the audience, in this case your commissioners or funders (some have standardised templates and reporting schedules).

Commissioners and funders want to understand how your work contributes to their local strategic priorities so this point needs to be very clear in your reports.

For example, Leeds wants all children to be in safe, supportive families and to reduce the need for children to be taken into care. These are key impact areas that the Infant Mental Health Services' outputs and outcomes fit within, alongside a range of other services and programmes.

If a local priority is 'preventing children going into care' or 'improving school readiness' you should explain in your report how the team's work contributes to this.

Commissioners and funders usually want reporting requirements to be proportionate and not a huge burden on clinical resource, whilst answering key questions on impact. They are often willing to negotiate how reporting best achieves that balance.



2. Style and content

Funders and commissioners welcome concise, clearly-presented quantitative and qualitative data with clear, brief explanations of what the data means and what the measures can tell us. Visual devices and infographics may be helpful.

We would recommend the **LivPIP/Parent Support Service Social Impact report**¹⁷ as an excellent example of a periodic impact statement. We have other examples of more regular reporting formats in the Network area of our website.

Remembering the importance of the work to families

This excerpt is from a mother who was first seen while pregnant and at the end of the work with the parent-infant team many months later, she was asked to comment on what aspects of the intervention she had found helpful. (All identifying details have been changed.)

Specifically, this mother felt she had been helped by considering her own childhood, having a time to think about her baby and their burgeoning relationship, being given information on development and simply the sense of being listened to and understood. At a six month follow up things were still going well. In her own words:

'Before meeting K, I was extremely anxious about carrying a baby successfully and also worried about how my fears would impact on our relationship once she was born. K was able to talk me through those worries and give reassurance when I started to lose my confidence and give into the anxiety.

Once Annie was born, meeting with her helped to set aside worries and assure me of Annie's normal development. She also gave insight into how Annie might be experiencing the situation and how to help her cope with the newness of being in the outside world. K's kind and patient manner and ability to convey practical and clinically-based rationale helped me transition from a fearful to positive parent.

The support I received was exceptional. I felt very lucky to be able to access the service. It was a huge transition going back to work with its own challenges.

If I hadn't been given the chance to get a sound foundation I'm not sure I would have been able to handle the increased pressure of being a full-time working mum. If only you could give me more sleep!

17. Person Shaped Support (2017). Social Impact Report: Parent and Baby Wellness. PND (Postnatal Depression) and LivPIP (Liverpool Parent-Infant Partnership)
<http://www.psspeople.com/wp-content/uploads/2017/04/Parent-and-Baby-Wellness-Impact-Report-v2-27032017.pdf>





The following tables begin to collate information about a range of assessment tools relevant to specialised parent-infant relationship work. This is not an exhaustive nor even fully completed list, but a start and a work in progress. We will continue to improve and extend this table on our website over the coming months and welcome your feedback, contributions and insights.

We received a great deal of information about some of the measures from the Anna Freud National Centre for Children and Families and the Lambeth PAIRS service to whom we are very grateful.

We also extend our thanks to the clinicians from teams and services around the UK who have shared with us their clinical insights about some of the measures.

Measures Table A Reflective functioning and mentalisation abilities of parents

Measures Table B Postnatal parent-infant interaction, parental sensitivity/emotional availability and attachment

Measures Table C Antenatal parent-infant interaction and attachment

Measures Table D Adult mental health, parental confidence, self-esteem/self-efficacy/confidence, parental stress; parent's perception of self, parenting satisfaction

Measures Table E Parental emotional regulation

Measures Table F Infant's social and emotional development





Measures Table A: reflective functioning and mentalisation abilities of parents

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
Parent Development Interview (PDI)	Mentalisation (Caregivers ability to mentalize about their child)	Parent	Interview	60 minutes	<p>Semi-structured interview for the parent with clinician about experience and feelings about being a parent</p> <p>Codes the capacity of the parent to mentalize about his child</p> <p>Clinicians' insights: Gives a lot of useful information which is relevant clinically</p> <p>Not designed to be used as a pre- post-intervention measure</p> <p>Long to administer and code</p>	Contact trainers	<p>Training and reliability coding. Duration of training varies (1-3 days)</p> <p>Contact training providers for costs</p> <p>http://pditraininginstitute.com/parent-development-interview/</p> <p>https://www.annafreud.org/training/training-and-conferences-overview/training-at-the-anna-freud-national-centre-for-children-and-families/reflective-functioning-training-on-the-parent-development-interview/</p>	No

Psychometric Properties and References:

High inter-rater reliability, internal consistency, and criterion validity. Modest associations with some sociodemographic variables and PDI-RF were found, but together these only accounted for a small amount of variance in the measure, suggesting adequate discriminant validity.

- Slade, A., Aber, J. L., Bresgi, I., Berger, B., & Kaplan, M. (2004). The parent development interview–revised. Unpublished protocol.
- Slade, A., Sadler, L., De Dios-Kenn, C., Webb, D., Currier-Ezepchick, J., & Mayes, L. (2005). Minding the baby: A reflective parenting program. *The Psychoanalytic study of the child*, 60(1), 74-100.
- Slade, A. (2005). Parental reflective functioning: An introduction. *Attachment & human development*, 7(3), 269-281.
- Slade, A. (2008). Working with Parents in Child Psychotherapy. *Mentalization: Theoretical considerations, research findings, and clinical implications*, 207.



Measures Table A: reflective functioning and mentalisation abilities of parents

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
Parental Embodied Mentalizing Assessment (PEMA)	Embodied Mentalisation (Caregivers ability to comprehend a child's mental states via their body movements)	Parents and their infant (0-2yrs)	Observational (video)	7-10 minutes	<p>The Parental Embodied Mentalizing Assessment (PEMA™) is a 12-point tool used to assess non-verbal risk and protective factors in parent-infant (0-2) dyads. The aim is to focus on participant's bodies. Videos are observed on mute mode. Four stages to coding: identifying embodied circles of communication (ECC), delineating movement qualities (tempo, space, pathways, pacing, directionality, and tension flow), rating the quality of ECC events on from "very low" (1) to "very high" (9), and finally rating a global PEM score (1-9) which represents the parent's overall, typical, mentalizing capacity, considering all the individually rated ECC events of the dyadic interaction</p> <p>Clinicians' insights: Valid and reliable measure which considers dimension beyond verbal expression</p>	Contact trainers	<p>4-day training course and reliability process led by Dana Shai</p> <p>£700 without or £800 with reliability coding for research purposes</p> <p>https://www.annafreud.org/training/training-and-conferences-overview/training-at-the-anna-freud-national-centre-for-children-and-families/mentalizing-the-body-in-research-and-clinical-practice-parental-embodied-mentalizing-assessment-pema/</p>	

Psychometric Properties and References:

Inter-rater reliability for the global PEM rating ranged from ICC= .84 to .92. Parent's embodied mentalizing, measured at six months during free play, predicted infant attachment security at 15 months as well as internalising and externalising problems, social skills and competence, and academic performance (54months: Shai & Belsky, 2016)

1. Shai, D., & Belsky, J. (2011). When words just won't do: Introducing parental embodied mentalizing. *Child Development Perspectives*, 5(3), 173-180.
2. Shai, D., & Belsky, J. (2017). Parental embodied mentalizing: How the nonverbal dance between parents and infants predicts children's socio-emotional functioning. *Attachment & human development*, 19(2), 191-219.
3. Shai, D., & Belsky, J. (2011). Parental embodied mentalizing: Let's be explicit about what we mean by implicit. *Child Development Perspectives*, 5(3), 187-188.



Measures Table A: reflective functioning and mentalisation abilities of parents

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
Parental Reflective Functioning Questionnaire (PRFQ)	Reflective Functioning Looks at pre-mentalizing modes, certainty about the mental states of the infant, and interest and curiosity in the mental states of the infant	Parent of 0-5 years old child (further age ranges being piloted by UCL)	Self-report	18-item self-report measure	Developed as a research tool not for clinical practice, to provide a brief, multidimensional assessment of parental reflective functioning that is easy to administer to parents with a wide range of socioeconomic and educational backgrounds For further information see https://www.ucl.ac.uk/psychoanalysis/research/parental-reflective-functioning-questionnaire-prfq	https://www.ucl.ac.uk/psychoanalysis/research/parental-reflective-functioning-questionnaire-prfq	n/a	

Psychometric Properties and References:

Further research is required to establish the reliability and validity of the measure.

- Luyten, P., Mayes, L. C., Nijssens, L., & Fonagy, P. (2017). The parental reflective functioning questionnaire: Development and preliminary validation. *PLoS one*, 12(5), e0176218.
- Pazzagli, C., Delvecchio, E., Raspa, V., Mazzeschi, C., & Luyten, P. (2018). The parental reflective functioning questionnaire in mothers and fathers of school-aged children. *Journal of Child and Family Studies*, 27(1), 80-90.



Measures Table A: reflective functioning and mentalisation abilities of parents

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
Working Model of the Child Interview (WMCI)	Parent's working model of their relationship with child	Adult parent of child of any age (antenatal to no upper age limit)	Videod observation and interview	30-75 minute interview plus lengthy coding	<p>The WMCI was developed to assess parents/caregivers internal representations (also known as working models) of their experiences with a child. The WMCI produces clinically salient information and involves structured interview that is videoed and assessed. Can produce a clinical opinion on the caregiver's initial representation of the infant. Responses provide data that indicate the likelihood of attachment security or not in the child (there is a pre-natal version as well)</p> <p>For use by experienced child psychologists, child psychotherapists, child psychiatrists, IMH-specialists and other clinicians</p>	https://sundpsykologerna.se/files/C.H-Zeanah-et-al-Working-Model-of-the-Child-Interview.1986-1993.pdf	<p>€750 in Amsterdam (3 days) led by Diane Benoit</p> <p>https://www.rino.nl/cursus/working-model-child-interview</p>	

Psychometric Properties and References:

The WMCI has validity and can be used in clinical research when exploring the relationship between parental representations and the development of an infant.

1. S1. Benoit, D., Zeanah, C. H., Parker, K. C., Nicholson, E., & Coolbear, J. (1997). "Working model of the child interview": Infant clinical status related to maternal perceptions. *Infant Mental Health Journal: Official Publication of The World Association for Infant Mental Health*, 18(1), 107-121.
2. Zeanah, C. H., Benoit, D., & Barton, M. (1986). Working model of the child interview. Unpublished manuscript, 1986-1993.
3. Vreeswijk, C. M., Maas, A. J. B., & van Bakel, H. J. (2012). Parental representations: A systematic review of the working model of the child interview. *Infant Mental Health Journal*, 33(3), 314-328
4. Zeanah, C.H., & Benoit, D. (1995). Clinical applications of a parent perception interview in infant mental health. *Child and Adolescent Psychiatric Clinics of North America*, 4, 539-554.

For full reference list see https://www.researchgate.net/publication/268053260_Working_Model_of_the_Child_Interview_Coding_Manual



Measures Table A: reflective functioning and mentalisation abilities of parents

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
Meaning of the Child Interview (MOTCI)	Parent's meaning of the child	Parent (suitable for mothers and fathers) and child from birth	Interview	Approx. 1 hr to administer, 3-4 hours to code plus time for transcribing	<p>Used in child protection arena, predominantly by social workers, to evaluate the way parents think about their child</p> <p>It makes use of a semi-structured interview in which parents talk about their child, their relationship with their child, and their parenting, which is then carefully analysed using a manualised system</p> <p>Does not require a professional qualification to learn, training is aimed at social workers, family centre workers, therapists, psychologists, occupational therapists, and psychiatrists</p> <p>Suitable for clinical practice and research</p>	Contact trainers	http://www.meaningofthechild.org/	Yes

Psychometric Properties and References:

See <http://www.meaningofthechild.org/>



Measures Table A: reflective functioning and mentalisation abilities of parents

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
Assessment of mind-mindedness	Mind-mindedness (a parent's/ care-givers ability to view an infant as an individual with their own mind rather than just a being that has needs to be satisfied)	Parent and child	Observational for infants up to age 2; interview or self-report for older children	A short, filmed play session (5-10 minutes) for the observation measure. A short (5 minute) interview or self-report quest'naire Additional time is required for coding using the manual provided	MM focuses on the caregiver's willingness or ability to read the child's behaviour with reference to the likely internal states that might be governing it. MM with infants up to age 12 months is operationalised in terms of the caregiver's tendency to comment appropriately or in a non-attuned manner on the infant's putative internal states during interactions. It is therefore heavily focussed on the verbal aspects of interaction and does not code for non-verbal aspects. For very young infants, child sits in a baby seat on a table and a mirror placed on the table so that the mother's face can be clearly seen. For children aged 6 months and above, free play sessions where a range of age-appropriate toys is provided. Training is suitable for midwives, health visitors, clinical psychologists, childcare professionals, social workers, and any other professionals working with children	Contact trainer Coding manual freely available at https://www.york.ac.uk/media/psychology/mind-mindedness/MM%20manual%20version%202.2-2.pdf	Training is not formally required to use the measure, but occasional training courses are offered. The training is provided free of charge, but a small payment is required to cover the cost of materials and refreshments Information is available at https://www.york.ac.uk/psychology/research/groups/mind-mindednessinresearchandpractice/professional-training-courses/	Yes

Psychometric Properties and References:

Established as a predictor of numerous positive aspects of children's development. Validated as an outcome measure in intervention studies.

1. Meins, E., Fernyhough, C., Wainwright, R., Das Gupta, M., Fradley, E., & Tuckey, M. (2002). Maternal mind-mindedness and attachment security as predictors of theory of mind understanding. *Child development*, 73(6), 1715-1726.
2. Meins, E., Fernyhough, C., Johnson, F., & Lidstone, J. (2006). Mind-mindedness in children: Individual differences in internal-state talk in middle childhood. *British Journal of Developmental Psychology*, 24(1), 181-196.
3. Meins, E., Fernyhough, C., Wainwright, R., Clark-Carter, D., Das Gupta, M., Fradley, E., & Tuckey, M. (2003). Pathways to understanding mind: Construct validity and predictive validity of maternal mind-mindedness. *Child development*, 74(4), 1194-1211



Measures Table B: postnatal parent-infant interaction, parental sensitivity/emotional availability and attachment

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
Parent-Infant Relational Assessment Tool – Global Scales (PIRAT)	Parent-infant and infant-parent interaction	Baby 0-25 months old and their parent	Observational (video)	30 minutes of play to generate 10 minutes of video, plus time for coding	<p>Observational measure designed to assess the dyadic quality of parent-infant interactions. PIRAT is grounded in clinical practice, psychoanalytical thinking on the parent-infant relationship and infancy research</p> <p>It aims to reflect the needs of health care professionals working with parents and infants in their workplace settings</p> <p>PIRAT was designed to systematize their observations and thinking of the parent-infant relationship, and to pin-point areas of concern and identify risk (ref Hommel, Broughton and Target 2018, PDF in Network area of Parent-Infant Foundation website)</p>	Contact trainers	<p>3-4 days training plus an additional reliability training day and completion of the first reliability test which includes coding of 10 videotaped parent-baby interactions. Feedback on the first reliability test is provided before participants complete the second reliability set comprising 20 more parent-baby interactions</p> <p>Training is aimed at professionals working with parents and infants, including GPs, social workers, health visitors, midwives, infant mental health workers, psychiatrists, clinical psychologists, child psychotherapists and researchers in the field</p> <p>Contact trainer for prices: https://www.annafreud.org/training/training-and-conferences-overview/training-at-the-anna-freud-national-centre-for-children-and-families/parent-infant-relational-assessment-tool-pirat-global-scales-training/</p>	Not yet

Psychometric Properties and References:

Excellent reliability and internal consistency. For comprehensive information see PIRAT Global Scales Reliability and Validity PDF in the network area at www.parentinfantfoundation.org.uk

Measures Table B: postnatal parent-infant interaction, parental sensitivity/emotional availability and attachment

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
Parenting Interactions with Children: Checklist of Observations Linked to Outcomes (PICCOLO)	Parenting behaviour (affection, responsiveness, encouragement and teaching)	Child from 10-47 months old (although some aspects can be applied earlier) and parent.	Observational (can be administered live but best if videoed)	Requires 10 minutes of interaction plus time for coding	<ul style="list-style-type: none"> Assesses 29 observable parenting behaviour across the four domains Assesses positive parenting behaviours that predict good child outcomes guides individualized positive parenting interventions with families tracks positive parenting outcomes of a parenting support program <p>Clinicians' insights: Produces clinically salient information The grid summarizes scores indicative of high risk, moderate risk, and strength (e.g., low/no risk) for each domain such that risk corresponds to suboptimal toddler development. The scoring grid is helpful for identifying families' strengths and areas that need improvement (see Tribal Early Childhood hyperlink below)</p>	https://brookespublishing.com/product/piccolo/	<p>Minimal staff training required. Staff need to practice asking the questions as an interview</p> <p>Training DVD \$155 Administration Starter Kit \$60</p> <p>https://brookespublishing.com/product/piccolo/</p>	Yes

Psychometric Properties and References:

May not be norm-referenced – users should check with the publisher. Cronbach's α averaged .78 across the four domain items (.78 for the affection domain, .75 for the responsiveness domain, .77 for the encouragement domain, and .80 for the teaching domain); α = .91 for the total PICCOLO score at each age. Roggman et al. 2013 reported that internal consistency reliability was similar among European American, African American, and Latino American low-income families. Interrater reliability correlations between pairs of observers averaged $r = .77$ for all items and ranged from $r = .74$ for the responsiveness domain to $r = .80$ for the affection domain. Interrater reliability correlations between observers of different ethnicities averaged $r = .80$ for PICCOLO total scores, $r = .78$ for the affection domain, $r = .68$ for the responsiveness domain, $r = .66$ for the encouragement domain, and $r = .75$ for the teaching domain. Construct Validity: Domains and total scale scores were significantly correlated with established measures of the same parenting interactions in the total sample and within the subgroups of European American, African American, and Latino American low-income families. Predictive Validity: PICCOLO total scores and domain scores were significantly correlated with later child cognitive, language, and socioemotional outcomes at ages 2, 3, and 5. PICCOLO total and domain scores predicted: cognitive outcomes as measured by the MDI at age 3 years and the WJ-AP subscale at age 5; language and literacy outcomes as measured by the PPVT-II at ages 3 and 5 and the WJ-LW subscale at prekindergarten; socioemotional outcomes as measured by the BRS-ER at age 3 and the CBCL-A at ages 3 and 5; and an index of school-readiness. Predictive validity was similar among European American, African American, and Latino American families (ref <https://tribalearlychildhoodmeasures.com/the-parenting-interactions-with-children-checklist-of-observations-linked-to-outcomes-piccolo/>)

Roggman, L. A., Cook, G. A., Innocenti, M.S., Jump Norman, V. K., & Christiansen, K. (2009). PICCOLO (Parenting Interactions With Children: Checklist of Observations Linked to Outcomes) user's guide. Logan, UT: Utah State University.



Measures Table B: postnatal parent-infant interaction, parental sensitivity/emotional availability and attachment

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
Parent-Infant Relationship Global Assessment Scale (PIRGAS)	Parent-infant relationship (strengths of a relationship and the severity of any disorder)	Parent with child aged 0-3 years (0-5 version available)	Interview and observation	Coding a 'live' observation requires at least 45 minutes Manual states a full evaluation of all five axes "requires a minimum of three to five sessions of 45 or more minutes each"	Research-based rating instrument consisting of a clinical interview with the parent coupled with observed behavioural patterns. Provides a continuously distributed rating of p-i relationship quality ranging from well adapted to grossly impaired. Three aspects of parent/infant relationship are evaluated: the behaviours indicating quality of interaction, affective tone and psychological involvement Clinicians' insights: In the nine PIP teams, the PIRGAS was phased out in favour of the DC05 LOAF, as the PIRGAS was found to be a bit subjective so best when combined with other tools There's risk that caregivers act out positive behaviours while being observed but the ratings can be changed in light of new information.	Contact trainers The scoring guide is available here https://cypiapt.files.wordpress.com/2016/07/0-3r-pirgas1.pdf	A two-day training provided by Zero to Three internationally is required. Costs include the DC:0-3R Manual of \$75 and a training fee of \$50-100 Contact Zero to Three Learning Center for details https://learningcenter.zerotothree.org/Default.aspx	Yes

Psychometric Properties and References:

IRR found 92% agreement and an ICC= .83-.86.

1. Parent-infant relationship global assessment scale: a study of its predictive validity. Aoki et al (2002) https://www.gla.ac.uk/media/Media_510987_smxx.pdf
2. Inter-rater reliability and aspects of validity of the parent-infant relationship global assessment scale (PIR-GAS). Muller et al (2013) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3679830/>
3. Using the Parent-Infant Relationship Global Assessment Scale (PIR-GAS) to identify caregiver – infant/toddler dyads with abusive relationship patterns in six European countries: Identify Abusive Relationships With the PIR-GAS [https://pure.roehampton.ac.uk/portal/en/publications/using-the-parentinfant-relationship-global-assessment-scale-pirgas-to-identify-caregiver--infanttoddler-dyads-with-abusive-relationship-patterns-in-six-european-countries\(233fbb33-88ca-4651-8e83-ff41fafc7dac\)/export.html](https://pure.roehampton.ac.uk/portal/en/publications/using-the-parentinfant-relationship-global-assessment-scale-pirgas-to-identify-caregiver--infanttoddler-dyads-with-abusive-relationship-patterns-in-six-european-countries(233fbb33-88ca-4651-8e83-ff41fafc7dac)/export.html)



Measures Table B: postnatal parent-infant interaction, parental sensitivity/emotional availability and attachment

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
The DC: 0-5 assessment (Levels of Adaptive Functioning; LOAF)	A rating of Caregiving Dimensions (refers to primary caregiver) and Caregiving Environment (embraces other caregivers in the child's emotional world regardless of whether they live with the child)	Parent and Child up to 5 years of age	Observation		<p>A developmentally-based system for practitioners assessing mental health and developmental disorders in infants and toddlers.</p> <p>It can be used by practitioners from various disciplines to plan treatment and evaluate progress in their parent-infant relationship work</p> <p>Caregiving Dimension and Caregiving Environment each rated as one of four levels of concern</p>	https://www.zerotothree.org/resources/2221-dc-0-5-manual-and-training	International training offered by Zero to Three https://www.zerotothree.org/resources/2221-dc-0-5-manual-and-training	

Psychometric Properties and References:

Contact <https://www.zerotothree.org/>



Measures Table B: postnatal parent-infant interaction, parental sensitivity/emotional availability and attachment

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
CARE- Index	Patterns of attachment and risk (dynamic maturational model)	Babies of 0-15 months and their parent or carer	Observational	3-5 min video of parents playing and talking with their baby, + 15-20 min coding	Coding system made of 7 scales: three parent descriptors (sensitive, controlling, unresponsive) and four infant descriptors (cooperative, difficult, compulsive and passive). Seven aspects of parental interactive behaviour are evaluated including facial and vocal expression, positions and body contact, expressions of affection, pacing of turns, control and choice of activity. Used for initial assessment, outcome evaluation and used to guide risk assessment in child protection Clinicians' insights: People have reported difficulties becoming reliable on this measure Expense/length of training	Contact trainers	Training to become a reliable coder takes nine days, in three 3-day blocks, followed by a reliability test of submitted video clips. Training is available in the UK for a wide range of professionals who work with infants and their carers, including midwives, health visitors, social workers, psychologists and psychotherapists. In 2019, the 9-day training costs in the region of £720 (excluding travel and accommodation) from http://www.iswmatters.co.uk/ International training can be found via https://www.patcrittenden.com/	Yes

Psychometric Properties and References:

It is highly correlated with the Infant Strange Situation. No information found on internal consistency. Inter-rater reliability was tested at 85% agreement. Criterion validity established for different groups of mothers: middle-class, low income, deaf, with learning difficulties, abusive and neglectful as well as for prospective longitudinal studies. Construct validity established with the infant's patterns of attachment and assessed with the SSP, along with prospective longitudinal studies.

1. https://www.patcrittenden.com/include/care_index.htm
2. Hautamaki (2014) Chapter in **The Routledge Handbook of Attachment Assessment**
3. Kunster (2010) Assessing parent-child interaction in the preschool years: A pilot study on the psychometric properties of the toddler CARE-Index. <https://journals.sagepub.com/doi/abs/10.1177/1359104510367585>



Measures Table B: postnatal parent-infant interaction, parental sensitivity/emotional availability and attachment

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
Keys to Interactive Parenting (KIPS)	Dimensions of interactive parenting behaviour	Child 2-71 months old and their parent	Observational	20 minutes observation plus 15 minutes scoring	<p>12 key facets of parenting such as Sensitivity to Responses, Supporting Emotions and Promoting Exploration and Curiosity. It adopts a strengths-based approach promoting parental learning and building confidence. The KIPS can be used as a baseline clinical assessment and to track progress over time and is therefore suitable for pre and post outcome measurement</p> <p>Can be used by family services practitioners in health, education or social services</p> <p>Clinicians' insights</p> <p>Does not specifically look for markers for problems or disorganized attachment in the child</p> <p>Can be difficult to gain accreditation but programme developers very helpful</p> <p>Slow motion can assist scoring</p>	http://www.comfortconsults.com/	<p>Training to use the KIPS is available as e-learning from http://www.comfortconsults.com/. Annual re-certification is required for valid use</p> <p>In 2019, prices for the e-learning workbook, annual reaccreditation and scoring forms were \$155USD</p>	Yes

Psychometric Properties and References:

Has received the Measurement Tools Rating of "A – Psychometrics Well-Demonstrated" based on the published, peer-reviewed research available ref <https://www.cebc4cw.org/assessment-tool/keys-to-interactive-parenting-scale/>

1. Comfort, M., & Gordon, P. R. (2006). The Keys to Interactive Parenting Scale (KIPS): A practical observational assessment of parenting behavior. *NHSA Dialog: A Research-to-Practice Journal for the Early Intervention Field*, 9(1), 22-48.
2. Comfort, M., Gordon, P. R., & Naples, D. (2011). KIPS: An evidence-based tool for assessing parenting strengths and needs in diverse families, *Infants & Young Children*, 24(1), 56-74.



Measures Table B: postnatal parent-infant interaction, parental sensitivity/emotional availability and attachment

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
Parent-Infant Interaction Observation Screen (PIIOS)	Parental sensitive responsiveness/ attunement	Baby of 2-7 months and parent	Observational	3-4 minutes video clip + 30 minutes for coding	Short screening tool for 'high risk' dyads specifically developed for frontline practitioners. It is a validated, simple, easy-to-learn screening tool to assess the parent-infant relationship. It was developed and validated by Dr P.O. Svanberg in collaboration with colleagues at Warwick Infant Family Wellbeing Unit (WIFWU) and has been shown to be reliable and also 'teachable' with significantly improved ability to recognise 'risky' interaction following the training. It contains items derived from Ainsworth's Sensitivity Scale and Crittenden's CARE-Index, as well as additional constructs based on research on 'mid-range interactions' when the infant is neither very active, nor passive, nor vigilant. Assesses any dysregulated interactions that have been shown to be predictive of an infant's attachment security. It comprises of a total of 13 scales: 8 parent, 1 infant, 4 dyadic, scored on a 14-point Likert Scale indicating Sensitivity (1=low, 14=high)	Contact trainers	Training via the University of Warwick is available to individuals or commissioned groups The training is 3 days and costs £450 https://warwick.ac.uk/fac/sci/med/study/cpd/cpd/piios	

Psychometric Properties and References:

Internal consistency showed good levels of positive correlation between each item score and the total score. Inter-rater reliability was excellent (94%). It has been validated against the CARE-Index maternal 'Sensitivity' scores.

1. The Parent-Infant Interaction Observation Scale: reliability and validity of a screening tool (Svanberg et al, 2013) <https://www.tandfonline.com/doi/abs/10.1080/02646838.2012.751586>
2. Using an observation tool (PIIOS) to assess parent-infant interaction in the first two weeks of life: a feasibility study (Naughton et al., 2019) [https://www.safetylit.org/citations/index.php?fuseaction=citations.viewdetails&citationIds\[\]=citjournalarticle_600617_23](https://www.safetylit.org/citations/index.php?fuseaction=citations.viewdetails&citationIds[]=citjournalarticle_600617_23)
3. The effectiveness of training in the Parent-Infant Interaction Observation Scale for health visitors (Svanberg & Barlow, 2014) <https://www.magonlinelibrary.com/doi/abs/10.12968/johv.2013.1.3.162>



Measures Table B: postnatal parent-infant interaction, parental sensitivity/emotional availability and attachment

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
Parent-Child Early Relational Assessment (PCERA)	Quality of parent-child interaction	Child of 2-60 months and parent	Observational	1 hour observation + coding	<p>A semi-structured observation assessing the affective and behavioural quality of interactions between the parent and child, for both research and clinical purposes, in families at risk of, or evidencing, early relational disturbances. The PCERA can be conducted and videotaped in a clinic or home setting. Segments are rated on 65 (29 parent, 28 child and 8 dyadic) behavioural and affective variables on a 5-point Likert scales with behavioural anchors. The instrument is designed to pick up on both positive and negative behaviours and affective states</p> <p>Clinicians' insights:</p> <p>Developed to be used in research but widely used in clinical work as well, to inform intervention strategies</p>		No information found	

Psychometric Properties and References:

Internal consistency was tested in several studies with good results. The inter-rater reliability was reported at as 83%-97%. Concurrent construct validity subscales have been also been demonstrated with significant relationships to a number of constructs such as infant attachment and IWM.

1. For a clinician's experience of the PCERA see http://www.infanthearing.org/meeting/archive/ehdi2015/ehdimeeting.org/archive/2015/System/Uploads/pdfs/Monday_Combs%20Chandler_230_RebeccaMartin_1625.pdf
2. The Parent-Child Early Relational Assessment: A Factorial Validity Study Clark (1999) <https://journals.sagepub.com/doi/abs/10.1177/00131649921970161>



Measures Table B: postnatal parent-infant interaction, parental sensitivity/emotional availability and attachment

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
NCAST Parent-Child Interaction Feeding and Teaching Scales (PCI)	Parent-child interaction	Parent with child 0-12 months for feeding scale, 0-36 months for teaching scale	Observation (videoed)		Widely used by frontline professionals in USA. Suitable for clinical and research purposes.	Contact trainers https://www.pcrprograms.org/	Training may be available in the UK, check https://www.pcrprograms.org/training/ for updates. Training in America \$1500	Yes

Psychometric Properties and References:

1. Farel et al (1991) Interaction between high-risk infants and their mothers: The NCAST as an assessment tool <https://onlinelibrary.wiley.com/doi/abs/10.1002/nur.4770140205>
2. Glatigny Dallay E., Guedeney A. (2016) Parent-Infant Interaction Assessment. In: Sutter-Dallay AL., Glangeaud-Freudenthal NC., Guedeney A., Riecher-Rössler A. (eds) Joint Care of Parents and Infants in Perinatal Psychiatry. Springer, Cham https://link.springer.com/chapter/10.1007%2F978-3-319-21557-0_6#citeas



Measures Table B: postnatal parent-infant interaction, parental sensitivity/emotional availability and attachment

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
The Atypical Maternal Behaviours Instrument for Assessment and Classification (AMBIENCE)	Anomalous parental behaviours associated with disorganized attachment in infancy	Mothers and their 12-24 months baby (also adapted for 4+ months)	Observational	Uses pre-recorded videos. Coding 1 hour	<p>AMBIANCE coding of pre-recorded videos looks for disrupted maternal behaviours on five dimensions: affective communication errors, role/boundary confusion, disorganised/disoriented behaviours, negative/intrusive behaviour, and withdrawal. Behaviours on each of the dimensions are coded and an overall score of the level of disruption on a 7-point scale is given. A binary code of disrupted or not disrupted is also given</p> <p>Work is underway to validate a shortened version as the original is found to be lengthy and complex, with reliability training taking about a year, making it impractical for most clinical purposes</p>		Training may not be available in the UK	

Psychometric Properties and References:

Concurrent validity with maternal RF has been established.

1. Lyons-Ruth K., Bronfman E. & Parsons E. (1999). Maternal frightened, frightening, or atypical behaviour and disorganised infant attachment patterns. *Monographs of the Society for the Research in Child Development*, 64, 67-9
2. Goldberg et al (2003) Atypical maternal behavior, maternal representations, and infant disorganized attachment <https://pdfs.semanticscholar.org/f9a7/e250bba06fee94c67d6e1a5882f9a7f063fa.pdf>
3. Haltigan et al (2017) Refining the assessment of disrupted maternal communication: Using item response models to identify central indicators of disrupted behaviour https://www.researchgate.net/publication/321881692_Refining_the_assessment_of_disrupted_maternal_communication_Using_item_response_models_to_identify_central_indicators_of_disrupted_behavior



Measures Table B: postnatal parent-infant interaction, parental sensitivity/emotional availability and attachment

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
Emotional Availability Scales (EAS)	Emotional availability (the parent's receptive presence to the child's emotional signals)	Child of 0-48 months and parent	Observational	20 minutes interaction+ time for coding	<p>Assessment of dyadic interaction for emotional availability of parent to child and vice versa. Consists in six dimensions for each party: parental dimensions are sensitivity, structuring, non-intrusiveness, and non-hostility, and the child dimensions are the child's responsiveness to the parent and the child's involvement of the parent</p> <p>Clinicians' insights: Recommended to code with video and analyse later</p> <p>Can be used with fathers and other adults Suitable for clinical and research use</p>	Biringen, Z. (2008). The Emotional Availability (EA) Scales and the Emotional Attachment & Emotional Availability (EA2) Clinical Screener (4th edition): Infancy/ Early Childhood Version		

Psychometric Properties and References:

Internal consistency was reported as acceptable to good. The criterion validity has been demonstrate within the context of postpartum depression, substance abuse and economic disadvantage.

1. Tribal Early Childhood Measures Database <http://tribalearlychildhoodmeasures.com/emotional-availability-ea/>
2. Biringen, Derscheid, Vliegen, Closson, & Easterbrooks, 2014. Emotional Availability (EA): Theoretical background, empirical research using the EA Scales, and clinical applications. *Developmental Review*, 34, 114-167.
3. Biringen, Zeynep, and M. Ann Easterbrooks. 2012. "Emotional Availability: Concept, Research, and Window on Developmental Psychopathology." *Development and Psychopathology* 24 (01): 1-8. <https://doi.org/10.1017/S0954579411000617>.

For further references see the Annenberg Brown University website <https://www.annenberginstitute.org/instruments/emotional-availability-scales>



Measures Table B: postnatal parent-infant interaction, parental sensitivity/emotional availability and attachment

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
Global Rating Scales for Mother-Infant Interaction (GRS)	Mother-infant interaction of depressed vs non-depressed mothers	Mother and infant of 2-4 months	Observational	5 minute, videoed interaction without toys, using mirrors to ensure both faces are recorded. 30 minutes for coding	Initially developed for research purposes by Lynne Murray, to distinguish between the mother-infant interaction of both depressed and non-depressed mothers, 2-4 months after birth 25 subscales: 7 infant, 13 maternal, and 5 joint interactive behaviours Maternal dimensions describe mother's overall sensitivity, intrusiveness, remoteness and affect, in particular signs of depression. Infant dimensions observe the level of communication, interactive behaviours, whether inert or distressed. The interactive dimension describes mutual engagement, such as smooth and easy/difficult, fun/serious, satisfying/unsatisfying, much engagement/no engagement and exciting engagement/quiet engagement	Contact author via https://www.researchgate.net/publication/227696334_The_Impact_of_Postnatal_Depression_and_Associated_Adversity_on_Early_Mother-Infant_Interactions_and_Later_Infant_Outcome	No information available	

Psychometric Properties and References:

Good criterion validity for a number of clinical groups such as depression and schizophrenia, social adversity, and low risk/high risk groups. It has also been validated cross-culturally and has been used to investigate associations between infant psychological profiles, temperament and quality of mother-infant interaction. Predictive validity was shown for the quality of the interaction assessed and child cognitive outcome at 18 months and 5 years of age.

1. Gunning, Murray et al (2002). Global Rating Scheme. A paper presented at the 8th Congress of WAIMH, Amsterdam – not available on the internet
2. Murray et al (1996a) The impact of postnatal depression and associated adversity on early mother-infant interactions and later infant outcomes <https://www.ncbi.nlm.nih.gov/pubmed/9022253>



Measures Table B: postnatal parent-infant interaction, parental sensitivity/emotional availability and attachment

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
Postpartum Bonding Questionnaire (PBQ) later called the Parental Bonding Questionnaire	Screening for bonding disorders	Mother	Self-report questionnaire	5-10 minutes	25 item self-report questionnaire recommended for midwives and health visitors for the early identification of dyads at risk of mother-infant bonding disorders Four subscales: impaired bonding, rejection and pathological anger, infant-focused anxiety and incipient abuse. A review of parental bonding questionnaires (Mason, 2015) was positive about their use. Literature suggests simultaneous use of EPDS if postnatal depression is also suspected	https://sundpsykologerna.se/files/Brockington-et-al-2001-PBQ-Archives-of-women_s-meantal-health.pdf	No training required although we suggest users read the original papers (2001, 2004) and related papers	

Psychometric Properties and References:

1. Brockington et al (2001) A screening questionnaire for mother-infant bonding disorders. https://sundpsykologerna.se/files/Brockington-et-al-2001-PBQ-Archives-of-women_s-meantal-health.pdf
2. Klier (2006) Mother-infant bonding disorders in patients with postnatal depression: The Postpartum Bonding Questionnaire in clinical practice <https://sundpsykologerna.se/files/Klier-2006-Mother-infant-bonding-disorders-in-patients-with-postnatal-depression-PBQ.pdf>
3. Mason (2015) Impact of bonding questionnaires in an assessment of maternal-infant bonding: A review of the literature <https://www.magonlinelibrary.com/doi/abs/10.12968/johv.2015.3.8.432>



Measures Table C: antenatal reflective functioning and attachment

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
The Pregnancy Interview	Predicts adult attachment classification	Pregnant women	Interview		39 questions and probes to assess the quality of a mother's representation of her relationship with her unborn child Administered during the third trimester	Contact trainers http://pditraininginstitute.com/#pi	Not currently found in UK – check http://pditraininginstitute.com/#pi for updated information 3 days training in America \$1100	

Psychometric Properties and References:

Slade, A., Grunebaum, L., Haganir, L. and Reeves, M., 2007. The pregnancy interview-revised. New York: City College of New York.

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
The Prenatal Parental Reflective Functioning Qu'naire (P-PRFQ)	Reflective Functioning	Pregnant women	Self-report		14 item questionnaire	See journal reference below	n/a	Not yet

Psychometric Properties and References:

Pajulo et al (2015) THE PRENATAL PARENTAL REFLECTIVE FUNCTIONING QUESTIONNAIRE: EXPLORING FACTOR STRUCTURE AND CONSTRUCT VALIDITY OF A NEW MEASURE IN THE FINN BRAIN BIRTH COHORT PILOT STUDY <https://onlinelibrary.wiley.com/doi/abs/10.1002/imhj.21523>



Measures Table C: antenatal reflective functioning and attachment

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
Prenatal Attachment Inventory (PAI)	Maternal attachment to foetus	Mother	Self-report questionnaire	5-10 minutes	<p>21-item self-report questionnaire asking respondents to endorse items like "I feel love for the baby" and "I wonder what the baby looks like now" on a four-point Likert scale</p> <p>Clinician's insights: No father's version</p> <p>Studies published using versions for Hungarian, French, Italian, Swedish, Polish and Persian mothers and mothers expecting twins</p>	<p>Contact author</p> <p>https://journals.sagepub.com/action/doSearch?target=default&ContribAuthorStored=Muller%2C+Mary+E</p> <p>The Egyptian version can be viewed at http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.389.6878&rep=rep1&type=pdf</p>	No training required	No

Psychometric Properties and References:

Best validated of the three antenatal attachment scales available (Perelli et al., 2014, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4227350/>)

1. Busonera et al. (2017) Prenatal Attachment Inventory: expanding the reliability and validity evidence using a sample of Italian women
https://www.researchgate.net/publication/318562559_Prenatal_Attachment_Inventory_expanding_the_reliability_and_validity_evidence_using_a_sample_of_Italian_women
2. Pallant et al. (2014) Psychometric evaluation and refinement of the Prenatal Attachment Inventory
https://www.researchgate.net/publication/259932406_Psychometric_evaluation_and_refinement_of_the_Prenatal_Attachment_Inventory
3. Gau & Lee (2013) Construct Validity of the Prenatal Attachment Inventory: A Confirmatory Factor Analysis Approach
https://www.researchgate.net/publication/9040039_Construct_Validity_of_the_Prenatal_Attachment_Inventory_A_Confirmatory_Factor_Analysis_Approach



Measures Table C: antenatal reflective functioning and attachment

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
Maternal Antenatal Attachment Scale (MAAS) and Paternal Antenatal Scale (PAAS)	Parental attachment to foetus	Mother or father of foetus	Self-report questionnaire	5-10 minutes	<p>Maternal (19 items) and paternal (16 items) self-report questionnaire. Items rated on basis of last two weeks. 5-point Likert scale.</p> <p>Clinicians' insights: Very helpful to have a comparable father's version</p> <p>Use with caution with non-clinical/universal population due to item about miscarriage</p> <p>Published papers using versions in Spanish, Dutch, Turkish, Italian</p>	<p>Maternal version SMG_change_projectMaternal_antenatal_attachment_scale%20(1)</p> <p>Paternal version SMG_change_projectPaternal_antenatal_attachment_scale%20(1)</p> <p>Scoring Guidance SMG_change_projectMaternal_paternal_antenatal_attachment_scale-scoring_guidance%20(1)</p>	No training required	No but UK test-retest paper in preparation

Psychometric Properties and References:

1. Van Den Burgh & Simons (2007) A review of scales to measure the mother-foetus relationship <https://www.tandfonline.com/doi/abs/10.1080/02646830802007480#>
2. Condon JT: The assessment of antenatal emotional attachment: Development of a questionnaire instrument. Br J Med Psychol. 1993, 66 (2): 167-183. 10.1111/j.2044-8341.1993.tb01739.x <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.2044-8341.1993.tb01739.x>



Measures Table C: antenatal reflective functioning and attachment

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
Maternal Fetal Attachment Scale (MFAS) 20-item version from Busonera et al (2016)	Prenatal maternal attachment	Mother	Self-report questionnaire	5-10 minutes	<p>The original 24 item scale consisted of five subscales to represent theorized dimensions of prenatal attachment (although the 1993 factor analysis and other papers found this version problematic)</p> <p>However, a 20-item version, validated on Italian women in 2016, is found to be valid and reliable</p> <p>This has three factors: future parental role-taking, present interaction with the baby, giving of self and responsibility to the unborn child</p>	https://www.midwiferyjournal.com/article/S0266-6138(16)00004-8/pdf	No training required	

Psychometric Properties and References:

1. Muller (1993) Factor Analysis of the Maternal Fetal Attachment Scale https://www.researchgate.net/publication/14693481_Factor_Analysis_of_the_Maternal_Fetal_Attachment_Scale
2. Busonera et al (2016) Psychometric Properties of a 20-item version of the Maternal-Fetal Attachment Scale in a sample of Italian expectant women [https://www.midwiferyjournal.com/article/S0266-6138\(16\)00004-8/pdf](https://www.midwiferyjournal.com/article/S0266-6138(16)00004-8/pdf)



Measures Table D: adult mental health; parental confidence/self esteem/self-efficacy/confidence; parental stress; parent’s perception of self/parenting satisfaction

		Antenatal	Child 0-12 months	Child 12-24 months
Adult Mental Health: Questionnaires for use with adults to assess various aspects of their own mental health				
Hospital Anxiety and Depression Scale (HADS)	Gives an early identification of anxiety and depression in the caregiver	✓	✓	✓
Beck Depression Inventory		✓	✓	✓
Beck Anxiety Inventory		✓	✓	✓
GHQ-12		✓	✓	✓
GAD 7		✓	✓	✓
PH9		✓	✓	✓
Adult Wellbeing Scale		✓	✓	✓
Impact of Event Scale- Revised	A 22-item scale primarily used for the provisional diagnosis of PTSD	✓	✓	✓
Primary Care PTSD Screen		✓	✓	✓
Warwick – Edinburgh Mental Wellbeing Scale	14 item scale covering feelings and functioning aspects of mental wellbeing. (S)WEMWBS is the shorter 7-item version	✓	✓	✓
Kessler Psychological Distress Scale	10 item self-report questionnaire. Global measure of distress based on previous four weeks		✓	✓
Standardised Assessment of Personality – Abbreviated Scale (SAPAS)	8-item screening interview for likelihood of personality disorder		✓	✓



Measures Table D: adult mental health; parental confidence/self esteem/self-efficacy/confidence; parental stress; parent's perception of self/parenting satisfaction

		Antenatal	Child 0-12 months	Child 12-24 months
Parental Confidence/Self Esteem/Self-Efficacy/Confidence				
Rosenberg Self Esteem Scale		✓	✓	✓
Karitane Parenting Sense of Confidence (0-12mths)			✓	
Brief Parenting Self Efficacy Scale			✓	✓
Parenting Sense of Competence, (Gibaud-Wallston, 1978)			✓	
Parenting Sense of Competence (Johnston & Mash, 1989)			✓	✓
Maternal Self-Efficacy Scale	Examines maternal depression, infant difficulty and maternal competence as reported/perceived by the parent		✓	✓



Measures Table D: adult mental health; parental confidence/self esteem/self-efficacy/confidence; parental stress; parent’s perception of self/parenting satisfaction

		Antenatal	Child 0-12 months	Child 12-24 months
Parental Stress				
Parenting Stress Index			✓	✓
Parenting Daily Hassles Scale			✓	✓

		Antenatal	Child 0-12 months	Child 12-24 months
Parent’s perception of self/parenting satisfaction				
Mothers Object Relations Scale	Child must be 2-4 years old Not validated for under 2s			
Kansas Parental Satisfaction Scale	3 questions on satisfaction with children’s behaviour, satisfaction with oneself as a parent and one’s relationship with children		Valid age range not specified	



Measures table E: parental emotional regulation

		Antenatal	Child 0-12 months	Child 12-24 months
Parental Confidence/Self Esteem/Self-Efficacy/Confidence				
Parent Emotion Regulation Scale (PERS)	35 items covering four dimensions of parental emotion regulation: orientation to child's emotion, acceptance of emotions, avoidance of child's emotion and emotional control	For parents of children aged 3-15 years		
Coping with Children's Negative Emotions Scale (C-CNES) for parents of toddlers	Self-report scale, adapted for parents of toddlers. Freely available on the internet at https://ccnes.org/			✓ For parents of children aged 18 months old and older
Difficulties in Emotional Regulation Scale (DERS and DERS-SF)	A self-report scales for adults (not specific to parents) to assess in emotion regulation relevant to clinical difficulties. 36 and 18 item scales	✓	✓	✓
Emotion Regulation Questionnaire (ERQ)	A 10-item scale designed to measure respondents' tendency to regulate their emotions in two ways: cognitive reappraisal and Expressive Suppression. Not specific to parenting	✓	✓	✓
Revised Parental Emotion Regulation Inventory (PERI-2)	A self-report measure of reappraisal, capitulation, suppression and escape strategies used by parents during discipline encounters with their child	For parents of children aged 2 years and older		



Measures Table F: infant's social, emotional and behavioural development

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
Ages & Stages Questionnaire Social-Emotional 2nd edition (ASQ:SE-2, 2015)	Child's social emotional development (child's ability to experience, express, and manage emotions, develop positive relationships with caregivers and others, and explore their environment with curiosity and confidence)	Parental self-report of infants from 1 month of age (up to 72 months)	Self-report questionnaire	Approx. 20 minutes plus 5 minutes to score	<p>The ASQ is a parent completed questionnaire that covers communication, gross and fine motor skills, problem solving and personal-social skills. The ASQ:SE-2 (2015) complements ASQ and identifies social and emotional issues for the baby including self-regulation, communication, autonomy, compliance, adaptive functioning, affect and interaction with people. Can help identify young children at risk of social or emotional difficulties. Different questionnaires for different age ranges: 2-, 6-, 12-, 18-, 24-months old</p> <p>Development guides for parents are available at http://archive.brookespublishing.com/content/ASQSE2-Social-Emotional-Development-Guides.pdf</p> <p>Clinicians' insights Helpful that it's photocopyable</p> <p>It can be tricky to measure change over time if the child crosses one of the age categories during the course of intervention</p>	www.agesandstages.com	<p>No formal training required but training is available from www.brookespublishing.com</p> <p>Starter kit \$295 User guide \$55 DVD \$50</p>	Yes

Psychometric Properties and References:

Test-retest reliability, internal consistency, validity, sensitivity and specificity all excellent (data set over 14000 children). Published study suggests validity for use by pre-school teachers (Pooch et al., 2018)

1. Ages & Stages website. An introduction to the ASQ:SE-2 <https://agesandstages.com/resource/intro-asqse-2-presentation/>
2. Pooch et al. (2018) Ages and Stages Questionnaire: Social-Emotional as a Teacher-Report Measure https://www.researchgate.net/publication/327587962_Ages_and_Stages_Questionnaire_Social-Emotional_as_a_Teacher-Report_Measure



Measures Table F: infant's social, emotional and behavioural development

Name of Measure	Construct or domain	Participant	Self-report, interview or observational	Completion Time	Brief Description	Source of Measure	Costs and UK Training (2019)	Validated as outcome measure (pre- post-)?
Neonatal Behavioural Assessment Scale	Infant's responses to their new environment, contribution to the parent-infant relationship and newborn's individuality	Infant 0-2 months	Direct assessment and observation		<p>A strengths-based, practitioner-administered assessment of a newborn's individuality and skills</p> <p>53 scorable items which are either administered by the practitioner or observed, including habituation, social interactive responses and capabilities, motor system, state organisation and regulation, autonomic system and reflexes</p> <p>Clinical and research applicability</p> <p>Clinicians' insights</p> <p>Lovely that it is strengths based – sets a positive tone to the early parent-practitioner relationship</p> <p>Can really help parents understand their unique new baby</p>	https://www.brazelton.co.uk/courses/neonatal-behavioural-assessment-scale-nbas/	<p>Provided by the Brazelton UK centre. £745.00 (or £373 if have previously completed NBO training)</p> <ol style="list-style-type: none"> 1. Pre Course Preparation – a manual and video 2. 2-day face-to-face training course 3. Practice phase and support 4. Certification <p>Re-certification is required every 3 years</p> <p>For more details contact https://www.brazelton.co.uk/courses/neonatal-behavioural-assessment-scale-nbas/</p>	No – can only be used in first 2 months of life

Psychometric Properties and References:

Not designed as a predictive assessment (e.g. of child's later intelligence) or as a comparator of norms (e.g. against other children) but as an exploration of the uniqueness of the child. Cronbach's alpha found to be 0.974 in Turkish validation study (Basdas et al., 2018). A 2018 Cochrane review found that the NBAS has only low-quality evidence of being able to support improvement in the parent-infant interaction.

1. Brazelton, T. Berry; Nugent, J. Kevin (2011). Neonatal behavioral assessment scale (4th ed.). London: Mac Keith Press. ISBN 978-1-907655-03-6.
2. Cochrane website. The effectiveness of the Neonatal Behavioural Assessment Scale (NBAS) and Neonatal Behavioural Observation (NBO) system for parents and babies https://www.cochrane.org/CD011754/BEHAV_effectiveness-neonatal-behavioural-assessment-scale-nbas-and-neonatal-behavioural-observation-nbo
3. Basdas et al. (2018) The Brazelton Neonatal Behavioral Assessment Scale: A validity and reliability study in a Turkish sample. https://www.researchgate.net/publication/324897368_The_Brazelton_Neonatal_Behavioral_Assessment_Scale_A_validity_and_reliability_study_in_a_Turkish_sample



Measures Table F: infant's social, emotional and behavioural development

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
Infant and Toddler Social and Emotional Assessment Revised (ITSEA-R) and brief form (BITSEA)	Child's social and emotional development	Parent of child aged 12-35 months	Self-report	10-20 minutes	36-item parent-completed form used when the infant has reached 12 months. Screens for social, emotional and behavioural problems and delays in overall competence There is also ITSEA which is the longer version Clinicians' insights Easy to administer and analyse, Copyrighted and could be seen as expensive	Previously provided by Pearson Assessments but now thought to be provided by https://eprovide.mapi-trust.org/instruments/brief-infant-toddler-social-emotional-assessment	No specific training for this measure is required but it should be administered by a professionally qualified person Cost is thought to be in the region of \$230 for starter set plus \$2 per form	

Psychometric Properties and References:

1. Briggs-Gowan MJ, Carter AS. Preliminary acceptability and psychometrics of the infant-toddler social and emotional assessment (ITSEA): A new adult-report questionnaire. *Infant Mental Health J.* 1998 Winter ; 19 (4):422-445
2. Carter AS, Briggs-Gowan MJ, Jones SM, Little TD. The Infant-Toddler Social and Emotional Assessment (ITSEA): factor structure, reliability, and validity. *J Abnorm Child Psychol.* 2003 Oct;31(5):495-514
3. Briggs-Gowan MJ, Carter AS, Irwin JR, Wachtel K, Cicchetti DV. The Brief Infant-Toddler Social and Emotional Assessment: screening for social-emotional problems and delays in competence. *J Pediatr Psychol.* 2004 Mar;29(2):143-55 (PubMed abstract).
4. Briggs-Gowan MJ, Carter AS, McCarthy K, Augustyn M, Caronna E, Clark R. Clinical validity of a brief measure of early childhood social-emotional/behavioral problems. *J Pediatr Psychol.* 2013 Jun;38(5):577-87 (Full-text article)



Measures Table F: infant's social, emotional and behavioural development

Name of measure	Construct or domain	Participant	Self-report, interview or observational	Completion time	Brief description	Source of measure	Costs and UK training (2019)	Validated as outcome measure (pre- post-)?
Alarm Distress Baby Scale (ADBB)		Infant of 0-3 years	Practitioner interacts directly with baby	?	Recent video-based screening procedure. Assesses the infant's withdrawal behaviour on eight items that correspond with the interpersonal and non-interpersonal dimensions of withdrawal behaviour: facial expression, eye contact, general activity, self-stimulating gestures, vocalisations, response to stimulation, relationship to the observer, ability to attract attention, reaction to cuddling, and reaction to separation. It can be coded 'live' or via video coded assessments Available in multiple different languages	Free from www.adbb.net/gb-conditions.html Manual is free to download	Training videos are sent for the cost of postage, terms and conditions on the website	Not yet

Psychometric Properties and References:

Reliability and validity established by Lopes et al (2008). Construct validity was established regarding the age of the mothers, parity, age of the father, age of the infant, birth order, and duration of the consultation.

See <http://www.adbb.net/gb-echelle.html#> for further information

NB: The Bayley Scales of Infant Development – 3rd edition – known as the Bayley-III has a newly introduced social-emotional subscale which assesses the attainment of important age-related milestones, including the capacity to engage and use a range of emotions, experiences, and expressions, as well as to comprehend various emotional signals and to elaborate upon a range of feelings through the use of words and other symbols. The Bayley Scales are typically used to assess a child's full developmental range and can only be used by professionals registered with Pearson Assessment. For more information see the **Pearson Assessment website**.



**Now that you've read this part of the toolkit,
you may find our other chapters helpful:**

Chapter 1 Introduction and Key Concepts

Chapter 2 The Case for Change

**Chapter 3 Funding and Commissioning a Specialised
Parent-Infant Relationship Team**

**Chapter 4 Clinical Interventions and Evidence-Informed
Practice**

**Chapter 5 Setting up a Specialised Parent-Infant
Relationship Team and Preparing for
Operational Delivery**

Chapter 6 From Set-up to Sustainability

**Chapter 7 Recruitment, Management and Supervision
of a Specialised Parent-Infant Relationship Team**

Bibliography





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