



FROM-Perinatal

Framework for Routine Outcome Measures in Perinatal Psychiatry

COLLEGE REPORT

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Contents

Authors and contributors	2
Introduction	4
Recommended perinatal outcome measures: summary	6
Generic measures	10
Mother-infant measures	13
Infant measure	19
Perinatal-specific patient experience outcome measures	20
References	22
Appendix	26

Authors and contributors

Authors

Cressida Manning, Consultant Perinatal Psychiatrist, Dorset Healthcare University NHS Foundation Trust

Helen Sharp, Consultant Clinical Psychologist, Cheshire and Wirral Partnership (CWP) NHS Foundation Trust; Professor of Perinatal and Child Clinical Psychology, University of Liverpool; Chair, Faculty of Perinatal Psychology, British Psychological Society

Gertrude Seneviratne, Consultant Perinatal Psychiatrist, South London and Maudsley NHS Foundation Trust; Chair, Faculty of Perinatal Psychiatry, The Royal College of Psychiatrists

Contributors

Bronwen Ashton, Patient Representative, NHS England Clinical Reference Group

Giles Berrisford, Consultant Perinatal Psychiatrist, Birmingham and Solihull Mental Health NHS Foundation Trust; Vice-Chair, Faculty of Perinatal Psychiatry, The Royal College of Psychiatrists

Joanne Black, Consultant Perinatal Psychiatrist, Devon Partnership NHS Trust

Andrew Cairns, Consultant Perinatal Psychiatrist, Northumberland, Tyne and Wear NHS Clinical Lead for Perinatal Mental Health, Northern England Clinical Networks

Antoine Guedeney, Professor of Child and Adolescent Psychiatry, Paris Diderot University

David Foreman, Consultant Child and Family Psychiatrist, King's College London

Jona Lewin, Consultant and Honorary Senior Lecturer in Psychiatry, Central and North West London (CNWL) NHS Foundation Trust

Alastair Macdonald, Clinical Advisor, Trust Clinical Outcomes Group, South London and Maudsley NHS Foundation Trust

Maddalena Miele, Consultant in Perinatal Psychiatry, Perinatal Mental Health Clinical Lead, CNWL Perinatal Mental Health Service **Rachel Mycroft,** Clinical Psychologist, South London and Maudsley NHS Foundation Trust; Executive Committee Member, Faculty of Perinatal Psychology, British Psychological Society

Gopi Narayan, Consultant Perinatal Psychiatrist and Clinical Lead, Yorkshire and Humber Mother and Baby Unit, Outreach Service and Leeds Perinatal Community Service

Susan Pawlby, Developmental Psychologist, Division of Psychological Medicine, Institute of Psychiatry, Psychology and Neuroscience, King's College London

Tracey Robinson, Project Manager, NHS England

Zeyn Green-Thompson, Consultant Liaison Psychiatrist, Cambridgeshire and Peterborough NHS Foundation Trust

Catherine Thomas, Consultant Child and Adolescent Psychiatrist, NHS Tayside

Introduction

Measuring the quality of healthcare using routine clinical outcomes measures (RCOMs) has gained considerable momentum over recent years in UK mental health services (Department of Health, 2010; NHS England, 2016). Perinatal mental health services, both in-patient mother and baby units (MBUs) and specialist perinatal community mental health services, are increasing across the UK, particularly in England, as part of the Five Year Forward View for Mental Health (NHS England, 2016). They are currently evaluated through the standards set out by the accreditation and peer review process of the Royal College of Psychiatrists' Centre for Quality Improvement (CCQI) perinatal quality network, which started in 2007 for in-patient services (College Centre for Quality Improvement 2016a,b). These national standards, as well as those set out by the National Institute for Health and Care Excellence (NICE) (2014), have been important in maintaining high-quality care across existing and new, developing services.

This report sets out guidance on routine clinical outcome measurement in perinatal services. Our aim is to enhance uniformity of outcome data collection across services at a local and national level. We selected measures which can be used to assess changes in both maternal mental health and in the quality of interaction between the mother and infant. The report draws on previous work by the Royal College of Psychiatrists (Hampton *et al*, 2011), which set out the following principles to inform the development of outcome measures.

- Focus should be on what is important to patients and carers
- Measures should be relevant to patients and practitioners
- Measures should be simple and easy to use
- Measures should be clear and unambiguous
- Measures should allow comparisons between teams and services
- Measures should be validated for the purpose for which they are used
- IT support should simplify the data collection and analysis, and ensure maximum use of data already collected
- Data should be checked for reliability
- Data should be used at the clinical, team and organisational level
- There should be immediate feedback on the data to patients, carers and clinicians so that outcomes can influence the treatment process

These principles have been upheld in this work. This guidance outlines outcomes measures for use in primary care, secondary and tertiary perinatal mental health services (MBUs and specialist community perinatal mental health teams) as well as disorder-specific measures.

The three main types of RCOMs include:

- 1 CROM: clinician-rated outcome measure
- 2 PROM: patient-rated outcome measure
- 3 PREM: patient-rated experience measure.

Developing the guidance involved work by a range of colleagues at strategy days, including two workshops. The selected measures have been used in existing perinatal services. They demonstrate good effect and are easy to rate by multidisciplinary team members as well as psychiatrists (Stephenson *et al*, 2018). There is very limited evidence base in support of the reliability and validity of measures designed to assess the quality of mother–infant interaction and their suitability for routine clinical practice. Consequently, recommended measures have some evidence for their use but require further evaluation as outcome measures. Required outcome measures were discussed with colleagues at the National Collaborating Centre for Mental Health (NCCMH) and NHS England.

Recommended perinatal outcome measures: summary

To assess the effectiveness of perinatal interventions, paired data should be collected at two time points: at the beginning of an episode of treatment and at the end. Further ratings may be taken at significant time points, for instance following delivery.

The following outcome measures are recommended by the Royal College of Psychiatrists (RCPsych) as a *minimum* for use in perinatal services (the full range is outlined in Table 1).

- 1 Generic measures
 - HoNOS
 - O HoNOSCA
 - O CORE-10
 - CORE-OM
- 2 Mother-infant measures
 - O PBQ
 - O BMIS
 - O PIIOS or NICHD or CARE-Index
- 3 Infant measure
 - O ADBB
- 4 Patient-rated outcome and experience measure
 - POEM
- 5 Specific conditions (see Table 1)

Table 1 Perinatal outcomes measures

Perinatal outcome measure	Туре	Stage
Common mental health disorders		
Edinburgh Postnatal Depression Scale (EPDS) A 10-item measure for screening and measuring the severity of postnatal depression	PROM	Consider if woman responds positively to Whooley questions or if clinical concern at booking, during pregnancy and in first year after birth
Patient Health Questionnaire (PHQ-9) A 9-item measure for screening, monitoring and measuring the severity of depression based on each of the nine DSM-IV diagnostic criteria	PROM	Consider if woman responds positively to Whooley questions or if clinical concern at booking, during pregnancy and in first year after birth
Generalised Anxiety Disorder scale (GAD-7) A 7-item measure for assessing the presence and severity of generalised anxiety	PROM	Consider if woman responds positively to GAD-2, Whooley questions or if clinical concern at booking, during pregnancy and in first year after birth
Generic measures		
Health of the Nation Outcome Scales (HoNOS) A 12-item scale measuring behaviour, impairment, symptoms and social functioning	CROM	At initial assessment, CPA review and discharge as part of a minimum data-set to assess overall care
Health of the Nation Outcome Scales Children and Adolescent Mental Health (HoNOSCA) A 15-item scale measuring behaviour, impairment, symptoms and social functioning in children and adolescents under 18 years of age	CROM	At initial assessment, CPA review and discharge as part of a minimum data-set to assess overall care
Recovering Quality of Life (ReQoL) An 11-item scale developed to measure improvement in quality of life in different mental health conditions	PROM	At initial assessment, CPA review and discharge
Clinical Outcomes in Routine Evaluation Outcome Measure (CORE-OM) A measure of global distress with 34-items and 4 subscales, including well-being symptoms, function and risk	PROM	At initial assessment, CPA review and discharge Consider for in-patient and psychological services
CORE-10 10-item measure taken from the CORE-OM	PROM	At initial assessment, CPA review and discharge, as part of a minimum data-set for all services Consider for perinatal community services and MBU
Camberwell Assessment of Need for Mothers (CAN-M) A semi-structured interview schedule for assessing the needs of pregnant women and mothers with severe mental illness	CROM/PROM	At initial assessment, CPA review and discharge Once fully assessed (CAN-M-C) it may be appropriate to complete a 1-page summary at review (CAN-M-S)
Mother-infant measures		
Postpartum Bonding Questionnaire (PBQ) A 25-item measure to identify mother–infant disorders	PROM	MBU or community Initial assessment, review as appropriate and discharge
Bethlem Mother–Infant Interaction Scale (BMIS) A 7-item scale, measuring the quality of mother– infant interaction in an MBU	CROM	MBU only Repeated weekly ratings
Mothers' Object Relations Scale (MORS-SF) A 14-item scale measuring mother's representation of the baby	PROM	Initial assessment, CPA review and discharge

CARE-Index A detailed measure of mother–infant interaction with parental sensitivity central. Seven aspects of interactional behaviour are observed. Three maternal scales: sentivity, control and unresponsiveness. Four infant scales: cooperativeness, compulsivity, difficultness and passivity. Valid from birth to 24 months	CROM	Use if concerns raised by clinician or mother of the quality of mother-infant interaction If problem identified use at initial screening and repeat at discharge
Parent–Infant Interaction Observation Scale (PIIOS) A 13-domain measure to evaluate parent– infant relationship with parental sensitivity and responsiveness central. Valid for infants 2 to 7 months old	CROM	Use if concerns raised by clinician or mother of the quality of mother-infant interaction If problem identified use at initial screening and repeat at discharge
National Institute of Child Health and Human Development (NICHD) scale A measure of parent–infant interaction quality. Five core maternal scales and four core infant scales. Valid for infants 3 to 15 months old	CROM	Use if concerns raised by clinician or mother of the quality of mother-infant interaction If problem identified use at initial screening and repeat at discharge
Infant measure		
Alarm Distress BaBy scale (ADBB) An 8-item measure (plus M-ADBB: a quick screening tool with 5 items). Assesses infant social withdrawal behaviours in interaction at the assessment	CROM	Use as minimum in MBU and if concerns raised by clinician or mother regarding baby's interactions (e.g. limited eye contact, little facial expression, withdrawal) Can be used at admission and discharge
Patient experience measures		
Patient rated Outcome and Experience Measure (POEM) A measure of patient satisfaction. Two forms of measure for MBU and community service	PREM/PROM	At discharge from in-patient MBU or community perinatal team as part of a minimum data-set to assess overall care
Perinatal VOICE (Views On Inpatient CarE) Questionnaire A 19-domain measure of patient satisfaction. For use in in-patient MBUs and other acute care settings	PREM/PROM	At discharge from in-patient MBU or community team
Specific conditions		
Brief Psychiatric Rating Scale (BPRS) A 24-item scale used as part of a clinical interview, measuring positive, negative and affective symptoms in people with psychotic disorders, especially schizophrenia	CROM	At assessment, CPA review and discharge
Young Mania Rating Scale (YMRS) An 11-item scale used to assess manic symptoms based on the person's subjective report of their clinical condition in the past 48h	CROM	At assessment, CPA review and discharge
Difficulties in Emotional Regulation Scale (DERS and DERS-SF) 36- and 18-item scales for assessing emotion regulation problems in adolescents and adults	PROM	At assessment, CPA review and discharge
Health Anxiety Inventory (short version: SHAI) A 14-item plus 4-item inventory. The scores can be combined; a cut-off score of 15 indicates a mixture of people who are hypochondriacal and health-anxious; a score of 18 or above fulfils the DSM-IV diagnostic criteria for hypochondriasis	PROM	At assessment, CPA review and discharge
Yale–Brown Obsessive Compulsive Scale (YBOCS) A 10-item scale to assess the severity and type of symptoms in patients with OCD	PROM	At assessment, CPA review and discharge

Impact of Events Scale Revised (IES-R) A 22-item scale primarily used for the provisional diagnosis of PTSD	PROM	At assessment, CPA review and discharge
Panic Disorder Severity Scale (PDSS) A 7- item scale with a cut-off score of 8 that is an indicator of panic disorder	PROM	At assessment, CPA review and discharge
Agoraphobia-Mobility Inventory (MI) A 27- item scale used for provisional diagnosis of agoraphobia. The total score indicates the severity of the agoraphobia	PROM	At assessment, CPA review and discharge

CPA, Care Programme Approach; CROM, clinician-rated outcome measure; IAPT, Improving Access to Psychological Therapies; MBU, mother and baby unit; OCD, obsessive–compulsive disorder; PROM, patient-rated outcome measure; PREM, patient-rated experience measure; PTSD, post-traumatic stress disorder.

Most measures for the assessment of parent–infant interactions require further validation. The CARE-Index has been evaluated but due to time taken to train to reliability it is less suited to routine use. NICHD has evidence in support of its predictive validity to a range of child development outcomes. PIIOS is newly developed as a screening tool and to date has been validated only against the CARE-Index.

Colours:

Consider use in primary care (e.g. midwives, health visitors, GPs and IAPT services)

Recommended as a minimum in community/MBU perinatal mental health services

May be used in community/MBU perinatal mental health services

Generic measures

Health of the Nation Outcome Scales (HoNOS)

HoNOS was developed over 20 years ago as an RCOM (Wing *et al*, 1996). It is used in most trusts and is supported by the Royal College of Psychiatrists (www.rcpsych.ac.uk/clinicalservicestand-ards/honos.aspx). HoNOS comprises 12 clinician-rated scales which cover psychiatric symptoms, functioning and social circumstances. Each scale is rated 0 for no problem, 1 for a problem that would not normally need intervention, and 2, 3 and 4 corresponding to a mild, moderate or severe problem. Scores of 3 and above are considered to be severe. Trusts that have used HoNOS in the perinatal services have tailored them to perinatal psychiatry, for example where the scale asks about the effects of mental disorder on relationships, staff rated the scale with the quality of the relationship with the mother's baby and/or partner in mind.

Recovering Quality of Life (ReQoI-10)

ReQol-10 is a PROM used to assess the quality of life for people with mental health conditions of different severity (excluding dementia or intellectual disability). It was developed by the University of Sheffield and funded by the Department of Health Policy Research Programme in England for use in the NHS (Keetharuth *et al*, 2017). It is free for NHS services, but a licence is needed from the University of Oxford (www.reqol.group.shef.ac.uk/licence.pdf).

ReQol-10 has ten mental health questions plus one physical health question and is consistent with the themes of recovery; the maximum score is 44. It can be used as a therapeutic tool to generate areas of discussion, set goals and evaluate the recovery process. It was developed with service users and clinicians. It is practical, easy to use, has robust methodology and is psychometrically sound. It has not been specifically validated for use in the perinatal population.

Clinical Outcomes in Routine Evaluation Outcome Measure (CORE-OM)

CORE-OM is a self-report questionnaire (PROM) which measures psychological distress (Evans et al, 2000, 2002). It can be used across a range of presenting problems and diagnostic categories. Information about its development is given by Barkham et al (2006). The full version has 34 items covering a wide range of symptoms. Patients are asked to rate how they have felt over the past week. Each item is scored on a 5-point scale (0 to 4), ranging from 'not at all' through to 'most or all of the time'. Eight of the items are reverse scored. Total scores can be calculated, but scores are commonly given as a mean score in the range 0 to 4. This accounts for any missing items: if there are fewer than 3 then the measure is still considered reliable. The mean score is sometimes multiplied by 10 to give a clinical score ranging between 0 and 40. Higher scores indicate more severe symptoms and greater psychological distress. The clinical cut-off is taken as a mean score of greater than 1.00 or clinical score of greater than 10 out of 40 (Connell et al, 2007).

Internal reliability and test-retest reliability were found to be good, as was convergent validity with other established measures (Evans *et al*, 2002).

The CORE-OM is sensitive to change (Barkham *et al*, 2001) and can be used to look at change in clinical significance or recovery, when mean scores change from above the clinical cut-off of 1.00 to below 1.00. Reliable change is considered to be a change in mean score greater than 0.5.

CORE-10

CORE-10 is a subset of 10 items from the CORE-OM (Barkham *et al*, 2013). It is administered and scored in a similar way. It was found to have an internal reliability (alpha) of 0.90 and to correlate with the CORE-OM at 0.94 in a clinical sample. For this measure, the clinical cut-off is a total score of 11.0 (mean score of 1.1). The reliable change index is 6 for the total score (0.6 for the mean score).

Both measures are relevant to the adult population and as such can be used effectively with women during the perinatal period. However, they do not have any items relating specifically to perinatal mental health or the parent–infant relationship.

As the CORE-OM and CORE-10 look at global distress, they do not include symptoms of some specific disorders (e.g. compulsions in obsessive–compulsive disorder (OCD), avoidance of going out in panic disorder with agoraphobia) and therefore it may be advisable to use a disorder-specific measure. CORE-OM has previously been used in published perinatal mental health studies, although often not as a primary outcome measure. Examples include studies by Morrell *et al* (2009) and Brugha *et al* (2011).

Both CORE-OM and CORE-10 are free to use, requiring no license (www.coresystemtrust.org.uk/home/copyright-licensing/).

Camberwell Assessment of Need for Mothers (CAN-M)

CAN-M can be both service user and clinician rated, measuring the needs of the mother, including functioning. It is brief, user friendly, valid and reliable. It consists of 26 domains, scored according to whether there is a need or not and whether the need is met or not. Domains include housing, financial difficulties, pregnancy care, sleep; violence and abuse; language, culture and religion; and information needs. The measure is sensitive to change.

The CAN-M manual with its license costs £75 but the scale can be reproduced from the manual at no additional cost (https://iprlicense.com/Books/Details/ can-m-camberwell-assessment-of-need-for-mothers-16945890).

Mother-infant measures

Since much of the cost of perinatal mental health problems arises from their impact on child mental health (Bauer *et al*, 2014), interventions in the perinatal period need to be directed at alleviating maternal mental distress and associated disruptions in the mother–infant relationship that may confer risks for child mental health outcomes.

In the context of perinatal mental health problems maternal response to infant cues may be disrupted, with low levels of warmth and attunement and/or the presence of withdrawn behaviours or intrusiveness. For instance, symptoms of maternal depression have been shown to be associated with lower maternal sensitivity in many studies, including the large NICHD study of 1000 mother–infant dyads (NICHD Early Child Care Research Network, 1999; Campbell *et al*, 2007).

There is now a wealth of evidence suggesting that maternal sensitive responsiveness is important in the promotion of adaptive child development, including the development of a secure mother–infant attachment and adaptive socio-emotional development (Bornstein *et al*, 2008; Landry *et al*, 1997, 2006; Leerkes *et al*, 2009; Dallaire & Weinraub, 2005; McElwain & Booth LaForce, 2006).

There is also some meta-analytic evidence that interventions designed to effectively encourage maternal sensitivity are likely to enhance infant–mother attachment security (Bakermans-Kranenburg *et al*, 2003). Recent NICE guidance recommends the use of evidence-based video interaction interventions to promote enhanced maternal sensitivity in the early years, which includes the perinatal period.

Specialist perinatal community teams and staff in MBUs will need to evidence the outcomes of these sorts of interventions. Such measures need to be reliable and valid indices of mother–infant interaction. They also need to be sensitive to change and have clinical utility in the perinatal period. The current status of existing measures varies considerably across psychometric and clinical domains, which makes their selection challenging. They also need to be validated as outcome measures. It is generally accepted that clinician-rated observational measures by trained staff are optimal to assess the quality of mother–infant interactions. Self-report measures can be of some use, particularly when women are reporting on their feelings and thoughts about the infant, although social desirability effects need to be considered.

Postpartum Bonding Questionnaire (PBQ)

PBQ is a PROM which has been validated as a general screening tool to identify mother–infant relationship disorders (Brockington *et al*, 2001, 2006), but not (as yet) as an outcome measure. It is easy to administer and consists of a 25-item scale, rated using a 6-point Likert scale. The PBQ has 4 subscales called 'factors' which reflect: factor 1, impaired bonding (12 items); factor 2, rejection and anger (7 items); factor 3, anxiety about care (4 items); and factor 4, risk of abuse (2 items). The original cut-off score for factor 1 was 12, for factor 2 – 17, for factor 3 – 10 and for factor 4 – 3. Subsequent validation suggested a reduction in factor 2 cut-off by 4 (to 13) and in factor 4 by 1 (to 2) to enable greater identification of mothers with a risk of rejection and harm, respectively. Further validation with new thresholds has not been completed.

Factor 1 had satisfactory sensitivity and serves to identify a self-reported problem in the mother–infant relationship. Factor 2 identifies severe mother–infant relationship disorders. It showed high sensitivity in mothers with established rejection (0.88), but was less satisfactory when identifying mothers with threatened rejection and anger. Factor 3 was not felt to adequately identify mothers with infant-focused anxiety. Factor 4 had low sensitivity for identifying mothers at risk to infant, and risk that obsessional mothers could have false positives. A high score indicates the need for urgent investigation.

A high score on factor 1 indicates that a clinical interview is needed to explore the quality of the mother–infant relationship, including infant-provoked anger, infant-focused anxiety or obsessions. An identified problem would also suggest the need for a further observational assessment using a measure such as the CARE-Index, PIIOS or NICHD.

It is important to remember that the PBQ is a screening questionnaire. If the scores are high (especially the score on factor 2), it is essential to interview the mother about her responses to the questionnaire and her feelings about the infant, including her anger.

PBQ is free to use, with no licence required. It was first published in *Archives of Women's Mental Health*: http://sundspsykologerna.se/files/Brockington-et-al-2001-PBQ-Archives-of-women_s-meantal-health.pdf. For more information on the questionnaire and scoring template, please email Ian Brockington (i.f.brockington@bham.ac.uk).

Bethlem Mother–Infant Interaction Scale (BMIS)

BMIS is a validated 7-item, 5-point rating scale used to measure mother–infant adjustment in an MBU over a 7-day observation period (Kumar & Hipwell, 1996; Stocky *et al*, 1996). It focuses on eye, physical and vocal contact, the mother's maternal and general mood, risk to baby and baby's contribution to their interaction. It is scored by two members of staff on a weekly basis, based on a consensus of the previous week's interactions, focusing on the worst day. Scoring is rated from 0 to 4, with 0 indicating the mother is judged to be interacting with her baby in an appropriate, sensitive and wellorganised manner. A rating of 4 indicates that the mother and infant have been nursed separately for the majority of the week. Weekly score is recorded on a 'summary of weekly mother–infant interaction scale' score sheet.

Previous studies showed good inter-rater, test-retest and inter-item reliability and changes over time suggested reasonable validity. BMIS can be adapted for use in the community.

If concerns are raised regarding the quality of the mother–infant interaction, use one of these scales: CARE-Index, PIIOS or NICHD.

The BMIS was first published in *The British Journal of Psychiatry* (https://doi.org/10.1192/bjp.169.1.18). It is free to use (see the Appendix).

Mothers' Object Relations Scaleshort form (MORS-SF)

MORS is a self-report questionnaire developed by Oates in the late 1990s. It was designed to assess parents' internal representation of their child's relationship with them. The full version comprises 44 items but a 14-item short form was developed. It was validated in the UK and Hungary with moderately sized samples (Oates & Gervai, 2003; Oates *et al*, 2006).

The short form was intended for use in population surveys and to assess intervention outcomes. It has good face validity and reduced social desirability as the focus is on the infant. It measures two dimensions of the mother's perceptions of the infant's feelings towards her: 'warmth – coldness' and 'invasion – withdrawal'.

There is limited evidence for its predictive validity in the UK (Davies *et al*, 2008; Milford & Oates, 2009). Its use as a preventive screening method with other short maternal mental state questionnaires has been recommended by Milford & Oates (2009). A further validation study has been completed in 2- to 4-year-olds and the measure has

previously been adopted for use as a screening tool in CYP-IAPT services for children from 0 to 5 years old. However, more research on a larger scale is needed on its reliability and validity in the perinatal period.

Copyright may be limited to 'not for commercial gain' so the scale may not be suitable for some NHS settings, such as private providers (www.bristol.ac.uk/sps/research/projects/current/ assessing-parental-capacity-to-change/materials-and-tools/).

CARE-Index

The CARE-Index is a video-based observation and assessment of the relationship developing between a parent and their child, from birth until 15 months of age. It was devised by Patricia Crittenden under the direction of Mary Ainsworth and John Bowlby (Farnfield *et al*, 2010). Dr Crittenden has devised numerous assessments of attachment based on her dynamic maturational model (DMM) theory of attachment (Crittenden, 2006). Of these, the CARE-Index is the best validated, with several studies of low-risk populations as well as prospective longitudinal studies supporting its validity and reliability (Farnfield *et al*, 2010). The CARE-Index has been used effectively to demonstrate changes in the mother–infant relationship in mothers with severe mental illness (Crittenden, 2004; Kenny *et al*, 2013).

The CARE-Index assesses dyadic interactional patterns and synchrony, that is the 'fit' between caregiver and infant. It can be used as a screening tool to assess the potential risk in the relationship between a mother and her baby, and with other caregivers who have the primary care of the child (such as grandparents and foster parents). As relationships are individually specific, it is not unusual to see differences between parents' sensitivity ratings on the scale.

The initial training course runs over 9 days (3×3 days) followed by a reliability test. Manuals are only available for people who have been trained and have a certificate (http://www.patcrittenden.com/include/manuals.htm).

While top levels of reliability (level I and II) are possible from an initial reliability test (level II is needed for coder-level reliability), levels III and IV are more usually achieved. The CARE-Index really is a 'layered learning' method, and the best coders are those who continue to learn to maintain and improve their reliability.

The Parent–Infant Interaction Scale (PIIOS)

PIIOS is a screening tool to evaluate the parent–infant relationship at age 2–7 months (Svanberg *et al*, 2013). The instrument draws on child development and attachment theories and incorporates elements of theory of mind.

The dyad's interaction is captured on a 3–5 minute video clip, assessed and then scored across 13 domains representative of a range of affective, behavioural and theory of mind dimensions (e.g. eye contact, vocalisation, speaking for the baby, responsive turn-taking, attunement to baby distress). Each dimension is scored on a 3-point Likert scale, with final scores ranging between 0–17 (no concerns), 18–25 (some concerns) and \geq 26 (significant concerns/at risk). PIIOS provides a meaningful interpretation of the quality of the interaction and can inform clinical management and risk assessment.

The PIIOS was designed with accessibility, brevity and intuitiveness in mind to meet the needs of frontline practitioners when routinely assessing parental attunement. It has been shown to be reliable and also 'teachable', with significantly improved ability to recognize 'risky' interaction following the training. It has not yet been validated as an outcome measure, but a process is in place to address this.

Warwick University holds the licence for the PIIOS and is the only provider for the 'train the trainer' and training packages, which are subject to the terms and conditions of the training contract (https://warwick.ac.uk/fac/sci/med/study/cpd/cpd/piios).

National Institute of Child Health and Human Development (NICHD) scale

The scale is based on NICHD Study of Early Child Care Global Ratings (Owen 1992; Cox & Crnic, 2003). Mother and infant are instructed to play as they usually do for a standardised period of time which is dependent on the age of the infant (7 min at 3 months, 10 min at 6 and 12 months). Global impression ratings of 7 subscales of maternal behaviour and 5 subscales of infant behaviour are coded according to a coding manual, on a scale from 1 'not at all' to 5 'highly characteristic', indicating the degree to which behaviours specified in the manual characterised the interaction. An experienced coder takes around 30 min to code all 12 scales from 15 min of footage, so coding of shorter video clips with younger infants takes proportionately less time.

Multiple large-scale studies have shown predictive validity from NICHD scales in the first months of life to attachment security and/or later child behavioural and socio-emotional development (NICHD Network, 1997; NICHD Early Child Care Research Network, 2006). Published papers have focused more on the predictive validity of the sensitivity scale to later child outcomes whereas others use a composite score from more than one scale e.g. sensitivity, intrusiveness and positive regard.

A set of behavioural descriptions are contained in the NICHD coding manual (Owen, 1992; Cox & Crnic, 2003). Training is received on all 12 NICHD global scales, but in clinical practice it may be possible to focus on a subset of these dimensions of mother–infant interaction to index change over time. Most research has focused on five maternal scales: Sensitivity, Intrusiveness, Detachment, Positive and Negative Regard and on the three infant scales indexing mood during the interaction (Positive mood, Negative mood and Activity). This smaller subset of codes would reduce clinician time taken to administer NICHD.

Subscales of maternal and infant behaviour in NICHD coding manual

Maternal behaviour

- 1 Sensitivity/responsiveness
- 2 Intrusiveness
- 3 Detachment/disengagement
- 4 Positive regard/affect
- 5 Negative regard/affect
- 6 Animation
- 7 Stimulation of development

Infant behaviour

- 1 Positive mood
- 2 Negative mood
- 3 Activity
- 4 Sustained attention
- 5 Dyadic mutuality

Training involves 2–3 face-to-face training days followed by a process of independent rating of a small standardised set of interaction videos, before rating the reliability set of 25 videos to achieve inter-rater reliability targets (>0.70) and graduate.

Enquiries regarding training should be directed to Professor Helen Sharp, who has been granted permission to train individuals in the UK (wchads@liv.ac.uk).

Infant measure

The Alarm Distress BaBy scale (ADBB)

ADBB assesses social withdrawal behaviour in infants and young children less than 3 years of age (Guedeney & Fermanian, 2001). It can be used after training for clinical or research use. Withdrawn social behaviour from just 2 months old, indicated by a lack of either positive (e.g. smiling, eye contact) or negative (e.g. vocal protestations) behaviours is more akin to a state of learned helplessness. It should alert the clinician that the infant is not displaying age-appropriate emotional or social behaviour. Such low infant sociability can be due to many factors, including both organic and non-organic disorders (Guedeney & Fermanian, 2001; Matthey *et al*, 2005; Braarud *et al*, 2013).

The scale consists of eight items related to the infant's social behaviour and is used by the clinician during a routine physical examination. It requires the clinician to engage the infant in social behaviour – by talking, touching and smiling to the infant, all part of normal practice during such examinations. The eight items, each rated from 0 to 4, are: facial expression, eye contact, general level of activity, self-stimulation gestures, vocalisations, briskness of response to stimulation, relationship to the observer, and attractiveness to the observer. The clinician observes the eight items during an assessment and then spends 2–3min completing the scale. Low scores indicate optimal social behaviour.

The scale has been developed for professionals – its aim is to aid decision-making. It is not a medical diagnostic tool, but a support to the observation of the baby in a given situation.

Training is over 4 days (www.adbb.net/gb-conditions.html).

Perinatalspecific patient experience outcome measures

Patient Outcome and Experience Measure (POEM)

POEM captures satisfaction over time and can be used routinely to evaluate perinatal services in both MBUs and perinatal community teams. It has been taken up by the CCQI as a continuous routine evaluation to collate feedback from patients and families. The measure can be used to benchmark services against each other. It has good face validity, but has yet to be validated as an outcome measure.

The in-patient measure consists of 2 questions on mental health at first contact and discharge from service using a 5-point Likert scale, 12 questions on patient experience using a 4-point Likert scale and 6 questions specific to the MBU that also use a 4-point Likert scale (https://www.snapsurveys.com/wh/s.asp?k=153777774423). The measure for the perinatal community team use does not include the last 6 unit-specific questions (https://www.snapsurveys.com/wh/s. asp?k=148369367862). POEM is free to use.

Perinatal VOICE Questionnaire

The Perinatal VOICE Questionnaire is an adapted version of the well-validated VOICE measure (Evans *et al*, 2012), derived from interviews by service user researchers with women who had had experiences of acute care in the perinatal period.

The Perinatal VOICE is a 27-item self-administered questionnaire that examines admission processes and therapeutic activities on wards. It contains six sections relating to experience of care on admission: care and treatment (3 items), medication (2 items), staffing (7 items), environment (5 items), and baby's well-being (10 items). At the end of each section, respondents are encouraged to provide further comments about their experience of care (see the Appendix).

Perinatal VOICE is free to use but permission must be obtained. For more information, please contact Louise Howard (SWMH-admin@kcl.ac.uk).

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Appendix

Bethlem Mother-Infant Interaction Scale (BMIS)

Source: Kumar & Hipwell (1996). © 1996 The Royal College of Psychiatrists

Instructions

- 1. Key/Allocated Nurse to complete interaction scale, AM & PM for 7 days.
- 2. Key nurse to evaluate daily entries at the end of 7 days. If one day has varied a lot from another rate the **worst day** in the past week.
- 3. Please plot the appropriate number for each sub scale A-G. NB if any one of the sub scales A-E is rated '4' ALL must be given a score of 4.
- 4. Comments: Where possible please describe in your own words of the problem to amplify the ratings in each sub scale.

□ A – D subscore
□ A –F total score

NB Any score above 1 = RISK AREA

Eve contact

- 0 Mother generally seeks and maintains eye contact with baby in an appropriate way. Her regard and expression are responsive to the baby's state (e.g. smiling, crying).
- 1. As above (0) but break breaks when mother may look away or seem not to focus on baby.
- 2. As above (1) but breaks are longer and mother seems to initiate eye contact less often, giving the impression that there times when she avoids looking at the baby, finds to hold gaze or is too distracted to do so.
- 3. As above (2) but very little eye contact with baby.

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Date							
Score AM							
Initials of nurse completing							
Score PM							
Initials of nurse completing							

4. N.A., separated most of the time.

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Physical contact

- 0. Mother generally holds and supports baby in a relaxed and efficient manner. Seeks and maintains physical contact with sensitive awareness of baby's state (e.g. alert, playful, drowsy, asleep).
- 1. As above (0) but occasionally seems 'out of tune' e.g. picks up too often or too little. Contact may appear mechanical or brusque.
- 2. As above (1) but mother is persistently and obviously insensitive to baby's state. Can nevertheless hold baby successfully for a few minutes at a time.
- 3. As above (2) but unable to hold baby for than for a few moments without disturbing him/her.

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Date							
Score AM							
Initials of nurse completing							
Score PM							
Initials of nurse completing							

4. N.A., separated most of the time.

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Vocal contact

- 0. Mother generally initiates and maintains dialogue and the rate, tone, volume and contact are appropriate to baby's state (e.g. laughing, babbling, crying).
- 1. As above (0) but minor brief breaks in dialogue through lack of, or through inappropriate responses by mother.
- 2. As above (1) but breaks are longer and more obvious in quality. At such times she is clearly unable to sustain 'conversation' with the baby but at other times she does manage some success.
- 3. Clearly out of harmony with the baby almost all the time. Vocal output is lacking or excessive or so inappropriate in rate, tone, volume or content that there is very little sustained dialogue between the two.

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Date							
Score AM							
Initials of nurse completing							
Score PM							
Initials of nurse completing							

4. N.A., separated most of the time.

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<u>Mood</u>

- 0. Generally comfortable, relaxed, caring, warm and sensitive to baby's mood and state. Able to tolerate baby's distress or irritability.
- 1. As above (0) but punctuated by brief periods when affective responses to baby are inappropriate or lacking. Nevertheless sensitive to baby much of the time.
- 2. As above (1) but mother's mood dominates the interaction with the baby. Some of the time, however, she is able to respond appropriately e.g. successfully soothing baby or maintaining play.
- 3. Mostly out of harmony with baby. Mother's mood is not responsive to baby for more than a few moments at a time.

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Date							
Score AM							
Initials of nurse completing							
Score PM							
Initials of nurse completing							

4. N.A., separated most of the time.

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General routine

- 0. Well organised in relation to looking after baby e.g. feeds, nappies are generally prepared in good time. Unflustered by unexpected minor problems. Copes independently.
- 1. As above (0) but occasional lapses which result in staff reminding or prompting mother. No serious difficulties.
- 2. As above (1) but lapses are more frequent and severe, so that staff often have to intervene and help.
- 3. Very disorganised. Requires considerable intervention and help from staff every day.

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Date							
Score AM							
Initials of							
nurse							
completing							
Score PM							
Initials of							
nurse							
completing							

4. N.A., separated most of the time.

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Physical risk to baby

- 0. Generally safe no perceived risk to baby.
- 1. Sometimes careless or neglectful but quickly corrects or responds to risk.
- 2. Unintentionally careless, rough or neglectful; thus puts baby in potentially dangerous situations <u>without</u> awareness of risk. Occasionally voices fears that she will harm baby but still has full care.
- 3. Threatens or definitely fears that she will harm the baby and care is taken over by staff while the baby is perceived as being at risk.
- 4. Actual harm caused intentionally or unintentionally, or separated most of the time because of perceived risk.

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Date							
Score AM							
Initials of nurse completing							
Score PM							
Initials of nurse completing							

If there is a score of 2 or more on the 'risk scale' please ensure documentation in the notes reflect:

- The nature of any incidents and indicate whether through neglect or intention.
- If no actual incident, what did the mother say to suggest risk?
- Relevant aspect of mother's mental state e.g. suicidal, manic, delusions incorporating baby.

COMMENT ON THE VARIABILITY: (date & sign)

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Baby's contribution to interaction

- 0. Healthy, alert, happy and responsive baby.
- 1. Occasionally baby seems 'difficult' or there is some other health problem which interferes with the relationship to a small extent.
- 2. As above (1) but baby is 'difficult' or there is some health problem for most of the time.
- 3. Clearly 'difficult' or in poor health all the time.

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Date							
Score AM							
Initials of nurse completing							
Score PM							
Initials of nurse completing							

4. N.A., separated most of the time due to baby's illness/condition.

If the baby is rated 1 or above please indicate in the notes what the problem is in as much detail as possible.

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Perinatal VOICE Questionnaire

The questionnaire is available here for information only. To request permission for free use, contact Louise Howard (SWMH-admin@kcl.ac.uk).

"The questions below refer to your <u>experiences</u> of the services you received. We are interested in your honest opinions, whether they are positive or negative. Please tick one answer per question, focusing on your opinions of one type of service"

I am basing this questionnaire on my experience of:

Acute inpatient ward

Mother and Baby Unit

Home/Community Treatment (please tick one ONLY)

Item no.	Questions		ers				
		Strongly Disagree	Disagree	Slightly disagree	Agree Slightly	Agree	Strongly Agree
1	I had a say in my care and treatment						
2	There were enough things available to do to keep from being bored.						
3	I think the therapeutic session/activities on offer met my needs						

Any comments?		

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ltem no.	Questions	Answers							
		Strongly Disagree	Disagree	Slightly disagree	Agree Slightly	Agree	Strongly Agree		
1	Staff gave me medication instead of talking to me.								
2	I had the opportunity to discuss my medication and side effects.								

Any comments?			

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ltem no.	Questions	Answers					
		Strongly Disagree	Disagree	Slightly disagree	Agree Slightly	Agree	Strongly Agree
1	Staff took an interest in me.						
2	Staff were available to talk to when I needed them.						
3	My partner was able to be involved during my treatment.						
4	I trusted the staff to do a good job.						
5	I felt that staff understood how my illness affected me.						
6	I felt that staff treated me with respect and compassion.						
7	Having social services involved was/would have been reassuring						

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Any comments?

ltem no.	Questions	Answers					
		Strongly Disagree	Disagree	Slightly disagree	Agree Slightly	Agree	Strongly Agree
1	I found it easy to keep in contact with family and friends.						
2	l felt safe						
3	My environment was suitable for being with my baby.						
4	My food was nutritious and met my dietary needs.						
5	I had the opportunity to get support from other mothers who were going through something similar.						

Any comments?

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ltem no.	Questions	Answers						
		Strongly Disagree	Disagree	Slightly disagree	Agree Slightly	Agree	Strongly Agree	
1	I felt my baby was safe where s/he was.							
2	I had the opportunity to bond with my baby.							
3	It was important to me to stay with my baby							
4	I was able to care for my baby as I saw best.							
5	I worried about harming my baby.							
6	I was given enough information to know my baby was doing well.							
7	Facilities for my baby were clean and adequate.							
8	Staff offered consistent advice for the baby care.							
9	Staff were skilled at helping me take care of my baby.							
10	If applicable, I had enough privacy to breastfeed comfortably							

Any comments?

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