

A shared outcome perinatal mental health
value scorecard to support health visitors to
improve outcomes for children 0-5 years
and their families

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Definitions

1. For the purposes of the scorecard, perinatal mental health problems were defined as including depression, anxiety, post-traumatic stress disease and alcohol-related problems
2. Value was defined as the cost per outcome gained
3. The term “mother” was used when referring to the primary care-giver; however, it is acknowledged that there are others who also fulfil this role
4. Inclusion criteria: women in the prenatal stage from 28 weeks gestation to birth, women from 10-14 days up to one year post-partum, infants from birth up to one year

Project sites

1. East London NHS Foundation Trust
2. Bart's Health NHS Trust
3. Homerton University Hospital NHS Foundation Trust
4. North East London NHS Foundation Trust

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Abbreviations

EPDS = Edinburgh Postnatal Depression Scale

HCP = Healthy Child Programme

HV = Health visitor

KPI = Key Performance Indicators

NICE = National Institute for Health and Care Excellence

NQB = National Quality Board

PDSA = Plan Do Study Act cycle

PND = Perinatal depression (including both ante-natal and post-natal depression)

QI = Quality Improvement

Executive summary

What is the scorecard?

The scorecard is a service-level quality improvement (QI) tool that is completed monthly and records national best practice adherence and a range of activity, outcome and experience data. These data are used to inform local QI projects and the impact of these QI projects can be monitored and reviewed by examining changes in scorecard data over time. The scorecard is designed to work by making data visible for health visitors (HVs) to reflect on their current practice and to highlight any areas where there are departures from best practice. Service user feedback is made available to HVs who are empowered to make improvements in quality in their local area. The outcomes of using the scorecard and related QI projects will potentially include better adherence to best practice guidance, improved experiences of care, more practice-based evidence, continuous identification of areas for QI and, ultimately, better perinatal mental health outcomes for women and their families.

Key questions addressed

1. Are perinatal mental health concerns being identified early enough?
2. Are those concerns being acted upon?
3. Are appropriate evidence-based interventions being used?
4. Are outcomes improving for the woman/child/family?
5. Population based processes: what percentage of the expected local perinatal mental health problems are being picked up by the local HV service?
6. End user processes: do mothers with perinatal health problems view the service they receive as “good”?
7. End user outcomes: do mothers who have received an intervention from the health visitor feel better/more able to manage their own mental health
8. Clinical outcomes: do health visitor perinatal interventions produce beneficial clinical change?

Development of the scorecard

Patient reported outcome measures (PROMs) and patient reported experience measures (PREMs) were both included on the scorecard. These were coproduced following extensive consultation with health visitors, managers, local commissioners, children’s centres, parents, and other experts. This resulted in a set of eleven outcome measures which formed the patient-reported outcome measures (PROMS),

Data were collected by four NHS provider sites to show how many women in the perinatal period were seen as recommended, and the number and efficacy of interventions instigated by health visitors in line with the NICE guidance (baseline data collection period March to December 2014). Gaps in these data led to identification of areas amenable to quality improvement projects to evidence the care that was being provided. Data were then collected monthly from January to June 2015.

Support for health visitors

Training was provided in QI, and awareness-raising sessions were held in each of the provider sites to ensure all health visitors were aware of the project. The local health visitor leads implemented their quality improvement projects by utilising the BMJ quality improvement tool, supported by the quality improvement health visitor champions. Action Learning Sets were also provided for health visitors

Evaluation aims and methods

Based on the project aims of driving up quality and consistency in HV services, identifying quality indicators and training others in QI, three research questions (see below) were evaluated using a realistic evaluation approach.

Evaluation research questions were:

1. Does the scorecard improve adherence to best practice and what areas of change to current practice does the scorecard help to identify?
2. How can the scorecard be used to improve patient experience?
3. What are the main facilitators and barriers to implementing the scorecard?

Data were collected using qualitative and quantitative methods from a range of sources including: data from the scorecard; interviews, focus groups, and questionnaires with HVs; focus groups and questionnaires with service users; and observations and field notes from meetings.

Discussion of findings

The perinatal mental health value scorecard has the potential to be a useful tool to report and reflect on health visiting practice within the context of national best practice guidelines and aspects of service provision that are important to service users. Although the time allowed to conduct the evaluation was short, and it was not possible to measure intended outcomes of using the scorecard, it has been possible to identify the key areas of change that can be identified through use of the scorecard. These include increasing adherence to best practice principles and guidelines, improving experience of services for women during the perinatal period and affording HVs a means of reviewing and reflecting on their own practice. Evidence from the evaluation does suggest that use of the scorecard has the potential to improve the ability of health visiting services to demonstrate their adherence to best practice, with quality improvement projects undertaken by sites showing increases in adherence to national guidelines.

A PREM was developed to include service user experience in the scorecard. There was little change in PREM responses over time, which may be explained by a) none of the QI projects targeting patient experience, b) the short time-frame over which PREMs were collected, and/ or c) the generally high levels of satisfaction service users reported, similar to measures of patient experience in other healthcare settings. The ceiling effect in the PREM responses found in the present evaluation should be considered if the PREM continues to be collected by HV services; high baseline levels of satisfaction may make it more challenging to assess change overtime. This could be mitigated by examining particular items, which revealed more variation than the subscales in the present evaluation, or by examining qualitative feedback (e.g., using free-text survey responses) to identify potential QI projects that target experience. Qualitative data analysis of

interviews and focus groups with HVs and mothers showed a more nuanced picture than the PREM data and particularly highlighted potential areas for future QI projects.

Facilitators and barriers to implementing the scorecard

A key facilitator identified through this evaluation was that the scorecard **fits with the values and ideology** of HVs in supporting families and promoting positive wellbeing. This is an important aspect of the scorecard in that HVs reported that they viewed the scorecard as a means of ensuring the best outcomes for families. The **timing** of the scorecard was also described as fitting with upcoming changes to IT systems and service commissioning. Finally, the scorecard was described as **empowering HVs** to reflect on practice and to discuss service provision with commissioners. A **toolkit** to aid implementation by new sites has been created.

The barriers to implementing the scorecard reflected the wider context in which health visiting services operate and may be key areas to address before introducing the scorecard in the future to enable a faster implementation and wider involvement of health visiting staff. A key barrier was **IT systems and data quality** which meant that extracting data to populate the scorecard was challenging. Other barriers included **a lack of management support, lack of experience and knowledge in QI and challenges communicating the aims and methods of the scorecard**.

Economic analysis

Introduction

A report in 2014 by *The Centre for Mental Health and London School of Economics* suggested that the cost to the public sector of perinatal mental health problems is five times the cost of improving current services. A perinatal mental health scorecard was designed to drive up quality and consistency of service delivery through the implementation of the scorecard by the health visiting workforce. This report focuses on the economic costs and benefits of implementing the scorecard.

Aims and objectives

The aim of this analysis was to conduct an economic evaluation, comparing the cost of implementing the perinatal mental health scorecard with the assumed change in care and service post-implementation. As part of this aim, there were four objectives:

1. Quantify the cost of implementing the scorecard
2. Quantify the change in service based on the outcomes included as part of the scorecard
3. Perform a literature search to identify the possible economic and quality of life benefits from implementing routine outcome measurement for perinatal mental health services.
4. Calculate the cost-effectiveness of implementing the scorecard using an economic model.

Methods

Secondary analysis of routine clinical data collected through the scorecard pilot project (baseline: March 2014 to December 2014; post-implementation: January 2015 to May 2015) at one particular site as a case study was used for this economic analysis. All questions were completed on a monthly basis and reflect a change in type or quality of the service dependent on the construct of the question. This analysis was restricted to only those perinatal mental health scorecard questions for which there were complete data. In particular, the data related to the questions of 'Maternal mood assessed ([antenatal/postnatal])' were fully completed and therefore a focus of this analysis.

The cost of the scorecard was based on the hourly wage of the health visitors implementing the scorecard multiplied by the time spent implementing the scorecard in relation to the study site. Descriptive statistics of performance and data quality metrics were reported to provide an overall summary of change, pre versus post implementation. A simple linear regression was used to evaluate if there was a statistically significant (p -value < 0.05) change in service based on the recorded data for the questions in the scorecard post-implementation as a whole time period and per month. Coefficients from the regression analysis that represent the change in service post-implementation and 95% confidence intervals (CI) were reported.

A literature search was undertaken to identify cost-effectiveness or more generalised studies that described potential outcomes related to: (1) the service as a result of implementing a quality improvement activity such as a scorecard; (2) the patient as a result of the scorecard, potentially through improved evidence based management of perinatal depression (PND). These results were also used to inform the design of the economic model.

An economic model based on a decision tree format was developed to assess the cost-effectiveness of screening for PND and referral to other services or listening visits post-implementation of the scorecard versus pre-implementation. The probability and costs for this model were obtained from the literature search and the results obtained from the assessment of the perinatal mental health scorecard, as presented in this report.

Results

For this case study, a total of 11 out of 20 questions as part of the mental health scorecard were completed, of which six (within two question grouping categories) had baseline and post-implementation data and therefore of use for the analysis in this report; these questions were: (1) two questions related to antenatal care - 'past history of mental health problems (antenatal)' and 'maternal mood assessed (antenatal)'; (2) four questions related to postnatal care - 'past history of mental health problems (postnatal)', 'maternal mood assessed (postnatal)', 'receive listening visits' and 'PND after birth'. It was estimated that a total of 334 hours by two health visitors was spent implementing the perinatal mental health scorecard. The total cost of implementing the scorecard was therefore estimated to be £14,362 over the pilot study period for this site.

When analysing the baseline and post-implementation data as two independent groups at two time points, a statistically significant increase in service was identified for the 'maternal mood assessed (antenatal)' ($p = 0.006$) and 'maternal mood assessed (postnatal)' ($p = 0.025$) questions of 12% and 2.5% at the mean value post-implementation, respectively; there were no statistically significant increases in service identified for any of the other questions over the post-implementation time period.

When analysing the baseline data against the change in reporting by month post-implementation, there is evidence to suggest that there may have been a time lag between the scorecard being implemented and a change in service based on the data reported for the 'past history of mental health problems (antenatal)' and 'maternal mood assessed (antenatal)' questions. For 'past history of mental health problems (antenatal)', a statistically significant increase in service was identified for the months of April ($p = 0.024$) and May ($p=0.003$) with an increase in service of 11% and 17% for those two months, respectively. For 'maternal mood assessed (antenatal)', a significant increase

in service was identified for the months of March ($p = 0.002$), April ($p = 0.001$) and May ($p = 0.003$) with an increase in service of 19%, 20% and 18%, respectively.

The generalised results from the cost-effectiveness economic model were that the implementation of the scorecard appeared to reduce costs (cost difference across main and sensitivity analysis ranged from a cost saving of £3,357 to a cost increase of £7,965) and increase in QALYs (QALY difference across main and sensitivity analysis ranged from a QALY gain of 0.1 to 0.4 with no estimated QALY loss) for postnatal and perinatal screening, and was cost-effective at a threshold of £20,000 per QALY gained for antenatal screening in the main and all assessed sensitivity analyses. The sensitivity analyses though suggested that this may have been as a function of fewer listening visits rather than anything else, as costs increase significantly when the proportion of women who receive listening visits increases. Listening visits do not perform favourably in regards to cost-effectiveness (they cost significantly more than providing nothing, with only a small additional benefit). It is possible that cost-effectiveness of the scorecard may have been the result of improved screening and identification of women and hence more appropriate and cost-effective onward referral, but there is insufficient data to confirm this conclusion using the scorecard dataset.

Limitations of the analysis for this report

Due to the lack of data that was obtained from the routine service systems, the analysis in this report was restricted to a case study which involved the data obtained from one site. All results should be treated as exploratory as part of the analysis of a pilot project of the perinatal mental health scorecard – results should be interpreted with caution due to the limited data available for analysis.

Conclusion

The perinatal mental health scorecard showed a significant increase in screening for both antenatal and postnatal depression and was shown to be cost-effective in the modelled cost-effectiveness analysis. A lack of data obtained for the scorecard restricted this analysis to a case study and restricted the number of outcomes that could be assessed. These results should be considered exploratory based on the implementation of the scorecard as part of a pilot study – further analysis with a larger quantity and better quality data in relation to the perinatal mental health scorecard is required. Qualitative data revealed that HVs in general were positive towards the scorecard in terms of its ability to record adherence to the recommended use of tools and screening questions. HVs recognised the importance of early detection and intervention for perinatal mental health difficulties and welcomed the chance to show what they routinely do in this area through data collection on the scorecard. The scorecard provides an ability for providers and commissioners to have evidence of the valuable work that is being done by health visitors.

Recommendations

Drawing on learning from the implementation and evaluation of this work, these are the recommendations for future work.

Implementation:

- Refine, upscale and evaluate the scorecard, embedding its use in routine practice to inform quality improvements and future commissioning of services to improve

outcomes in the perinatal period for children and families

- Evaluate its effectiveness as a quality improvement tool for provider organisations to achieve the delivery of high quality, safe and effective services, and ensure its transferability to other organisations

Practice:

- Engage with other partners to ensure work is embedded to inform the development of clinical data systems to measure quality. This is especially important in the light of the Mayor of London's response to the recent report from the London Health commission, which highlights the need to address variation in quality of care for children and the need for action to improve outcomes

Future development work:

At a national level:

- Develop roll-out of the national training for the Parent Infant Interaction Observation Scale Tool (validated for use by health visitors within the Healthy Child Programme)
- Commission further economic modelling of the scorecard to allow commissioners and providers to see the cost per outcome achieved
- Scope other patient feedback tools better able to show change of patient reported experience measures over time

At a local level:

- Evaluate the use of the Scorecard Implementation Toolkit, which will enable providers to improve systems and methods of data recording and extraction that are essential for providing the ability to evaluate the current service provision against national guidelines for quality and effectiveness
- Encourage providers to subscribe to tools such as the BMJ quality tool, or IHI tools to enhance the reflection and learning, and continue to drive up the quality of practice through collaboration
- Encourage ownership for improvements at the 'coal-face' and not only at management/strategic levels

Policy:

- Develop a new scorecard for infant mental health, concentrating on maternal attachment and attunement. This need was highlighted in the recent report on Child Mental health & Maltreatment: Building Great Britons (2015), which emphasised that the parent-child attachment is intergenerational, and the costs implications to the public purse if we fail to take action on perinatal mental health & child maltreatment.
- Include fathers' emotional health and wellbeing at key stages along the perinatal mental health pathway
- Ensure inclusion of specialist health visitor role in each service to cater for perinatal and infant mental health
- Ensure inclusion of quality improvement expertise in the health visiting team
- Ensure the methodology of developing the scorecard is shared to enable scorecards to be used for other conditions

- Ensure testing and development of tools specifically tailored to different communities

Summary

Future testing and evaluation of the scorecard is necessary to measure the impact it has on outcomes for families and for perinatal mental health specifically. The findings suggest that these longer-term outcomes could be achieved when the necessary supports are in place to implement the scorecard successfully and to accurately track and measure changes over time.

1 Development of the scorecard

1.1 Introduction

In 2015, responsibility for commissioning health visiting services transferred to local authorities. The same year saw the culmination of a government commitment to provide an extra 4,200 health visitors, including 700 in London (1). As highlighted in the Five Year Forward View the future health of millions of children, the sustainability of the NHS, and the economic prosperity of Britain all now depend on a radical upgrade in prevention and public health (2). The challenge for commissioners of 21st century health and social care services, therefore, is the ability to shift funding upstream to make a difference, by preventing ill-health and prioritising resources to support this approach. These drivers led to the Department of Health (DH), awarding Health Education England (HEE) a grant to commission and coordinate three projects to evaluate the efficacy of the increased health visiting workforce in line with improved commissioning linked to public health outcomes. These evaluation projects are centred on a partnership with key stakeholders across North Central and East London and are also aligned to the DH six high impact areas for health visiting. The projects are:

- **Maternal Mental Health** – Perinatal Mental Health Value Score Card
- **Pre-conception care** – Start at the beginning
- **Supporting parents to manage minor ailments** – DIY health

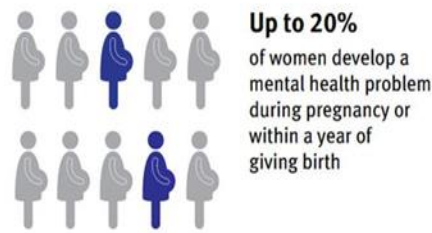
These projects build on the Public Health Outcomes Framework and the NHS Outcomes Framework, as set out in 'The National Health Visitor Plan: progress to date and implementation 2014 onwards' (3), and they provide evidence of the unique contribution that health visitors provide to achieve those outcomes. This report covers the first of the three projects – the perinatal mental health value scorecard.

1.2 Background

There are approximately 700,000 women who give birth each year in England. Perinatal mental health problems affect at least 10% of women, with 35% experiencing anxiety in the antenatal period and 50% in the postnatal period. Twenty-eight percent report difficulty bonding with their baby, and 22% report suicidal thoughts (4). One quarter of adults using mental health services in the UK have dependent children, and approximately 122,000 babies (<12 months of age) in the UK live with a parent with a mental health problem (5). The perinatal period is the period of time through pregnancy, childbirth, and up to one year postnatally.

Morbidity in mothers with and without previous problems, if untreated, leads to long term severe problems for mother, child and the wider family network. Compelling evidence links the correlation between cases of adolescent depression at 16 years and association with depression in the mother in early life (5).

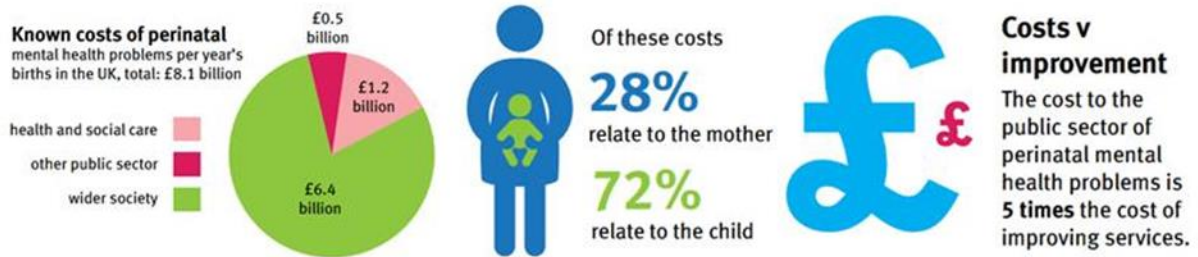
A recent report commissioned by the Maternal Mental Health Alliance shows that perinatal depression, anxiety and psychosis carry a total long-term cost to society of about £8.1 billion for each one-year cohort of births in the UK, with up to 20% of women developing mental health problems during the perinatal period (Figure 1) (6).



From Bauer A, Parsonage M, Knapp M, Lemmi V, Adelaja B., (2014) Costs of Perinatal Mental Health Problems. London School of Economics and Centre for Mental Health

Figure 1: Schematic showing prevalence of mental health problems during the perinatal period

Perinatal mental illnesses cost the NHS around £1.2 billion for each annual cohort of births, whereas it would cost only an extra £280 million a year (or an extra £400 per average birth) to bring the whole pathway of perinatal mental health care up to the level and standards recommended in national guidance (7). Compelling evidence suggests that postnatal depression (PND) has a significant impact on the emotional and cognitive development of the baby, as well as the interaction between mother-baby and the wider family network, especially when depression occurs in the first year of life (7, 8). Nearly three-quarters of the cost of these illnesses are related to adverse impacts on the child rather than the mother (Figure 2) (7).



From Bauer A, Parsonage M, Knapp M, Lemmi V, Adelaja B., (2014) Costs of Perinatal Mental Health Problems. London School of Economics and Centre for Mental Health

Figure 2: Costs and impact of perinatal mental health problems

Traditional approaches to establishing the burdens of mental illnesses, such as depression, alcohol dependence and schizophrenia, have seriously underestimated their impact, by concentrating on death but ignoring disability caused by these diseases. While psychiatric conditions are responsible for little more than one per cent of deaths, they account for almost 11 per cent of disease burden worldwide. In both high- and low-income countries, depression is women's leading cause of disease burden (9).

Projecting figures forward from 1990 to 2020, psychiatric and neurological conditions could increase their share of the total global burden by almost half, from 10.5 per cent of the total burden to almost 15 per cent in 2020, which is a bigger proportionate increase than that for cardiovascular diseases (10).

1.3 The role of health visitors

Health visitors have a remit to support the effective improvement of Public Health Outcomes for children 0 – 5 years and their families, as well as work within an environment that seeks to promote evidence-based practice underpinned by The Healthy Child Programme (HCP) (10). Integral to this is a preventative holistic approach, in order to assist and enable parents and carers to manage issues and challenges they experience. This workforce of health visitors not only provide

expert, invaluable advice and support to families with children in the first years of life, they are trained to systematically identify ante- and post-natal depression and deliver psychologically-informed interventions supported by evidence-based tools. The aims of these interventions are to:

- Detect mental health problems
- Undertake basic psychological treatments such as listening visits and non-directive counselling and cognitive counselling so that they can identify which women would benefit from additional visits and support
- Refer to the appropriate services along the integrated perinatal mental healthcare pathway

However, literature suggests that fewer than 50% of cases of PND are detected by primary healthcare professionals in routine clinical practice (11).

The Health Visitor Implementation Plan, 2011 (1) outlines a model of progressive universal service provision offered to families by their health visiting services which they have named the **4-5-6 Model** (Figure 3).

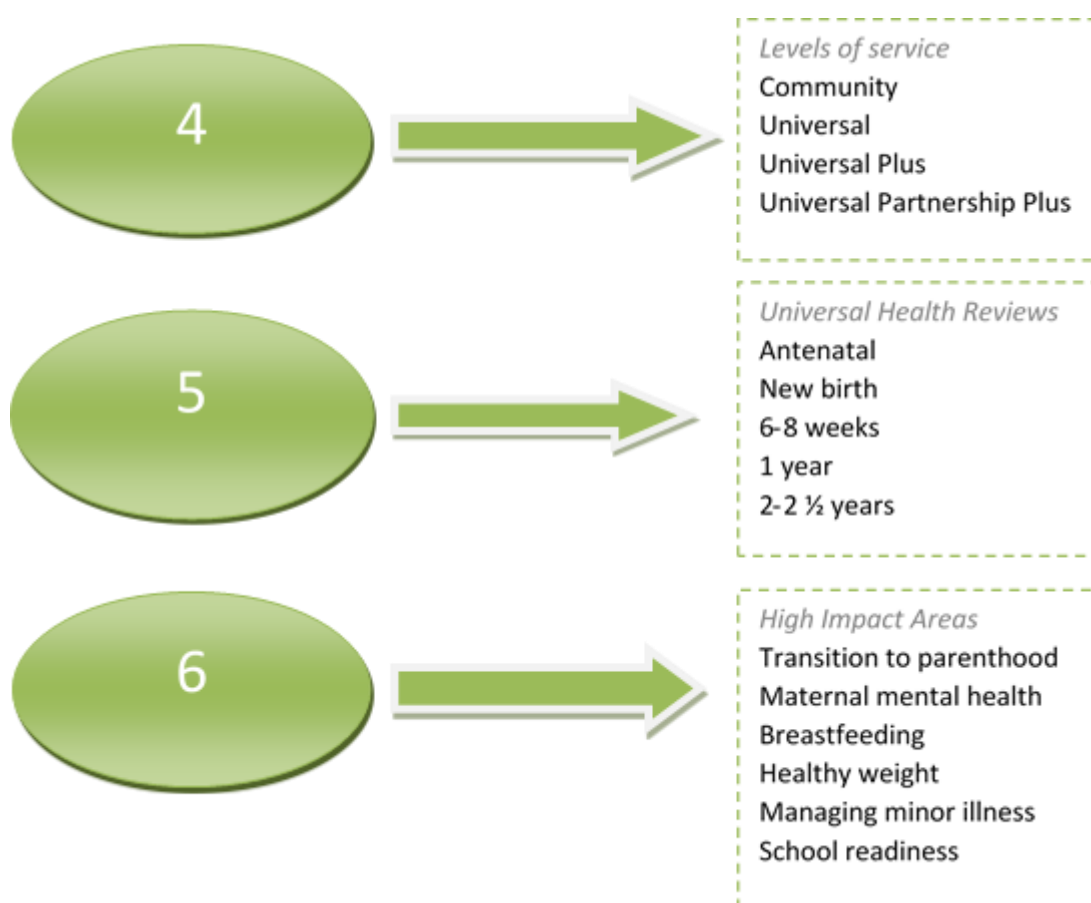


Figure 3: Components of the Department of Health’s 4-5-6 model of health visiting (Dept. of Health, 2011)

Each level of service as outlined in the model is targeted to families dependent on their particular individual needs:

- *Community:* Health visitors have a broad knowledge of the needs of the community and the resources available to them (e.g. children’s centres) and work to disseminate information about them to families

- *Universal*: Every new mother and child should have access to a health visitor and receive relevant developmental checks and information
- *Universal Plus*: Families should have access to timely, expert advice from health visitors on specific issues, such as postnatal depression, when they need it.
- *Universal Partnership Plus*: Ongoing support is provided by health visitors in partnership with other relevant local services where there are complex, multiple or ongoing needs.

In addition, the implementation plan proposes six 'high impact areas' that should be specifically targeted by health visitors to help to ensure the best outcomes for children and their families. The perinatal mental health value scorecard focuses primarily on maternal mental health although it recognises that there are inter-relations between all of these factors and had initially sought to include assessment of attachment and attunement during the pathway until it was confirmed that there is currently no national validated evidence-based measurement in use within health visiting. Attempts were also made to include paternal mental health, but this proved impossible. Only one of the four sites incorporated details of fathers during the initial contact in family records, and the other services do not currently have a clinical record specific to fathers enabling collection of the relevant data.

International evidence supports the theory that sustained home visiting by professional public health nurses promotes the development of trusting relationships between clients and professionals (12). However, a recent systematic review of health visiting services noted that the existing evidence of the effects of health visiting across a range of public health outcomes is fragmented and fails to provide a 'comprehensive understanding of the specific contribution of the health visitor; rarely does it explain how outcomes are achieved and whether results can be achieved as part of generic service provision.' (13).

1.4 Scope of the project

Health visitors deliver care in a variety of settings; for this project the settings included home, hospitals, Children's Centres, GP practices, Health Centres and other community venues

Since postnatal depression is the most prevalent perinatal mental health problem, the scorecard focussed on management of this. Effective management of postnatal depression can be viewed as a proxy indicator of a more broadly effective service.

All women within the health visiting/GP-aligned case load who were pregnant or had children up to one year old were included in the scope of the project, and all perinatal mental health problems were included.

1.5 Key questions for the project

1. Are we identifying perinatal mental health concerns early enough?
2. Are we acting on these concerns?
3. Are we using the appropriate evidence-based interventions?
4. Are we improving the outcomes for the woman/child/family?
5. Population based processes: what percentage of the expected local perinatal mental health problems are being picked up by the local HV service?

6. End user processes: do mothers with perinatal health problems view the service they receive as “good”?
7. End user outcomes: do mothers who have received an intervention from the health visitor feel better/more able to manage their own mental health
8. Clinical outcomes: do health visitor perinatal interventions produce beneficial clinical change?

1.6 Interfaces with national projects

The National Perinatal and Epidemiology Unit in Oxford are currently leading a project developing and pilot testing a national perinatal mental health indicators. The indicators are designed to reflect perinatal mental health and care at critical time-points during pregnancy and the postnatal period. These time points are antenatal booking, the early postnatal period, and approximately one year postnatally.

The aim of the indicator set is to ensure that maternity and postnatal care services are identifying women, offering appropriate and accessible mental health services, and achieving outcomes acceptable to women and clinicians which minimise potential harms to the woman, her family, and the development of the child.

Throughout this project we have aimed to align the perinatal mental health scorecard with the project in Oxford, to ensure that the outcomes of this project will inform the national indicators being developed.

1.7 Development of training package

Health visitor leads and relevant colleagues attended training sessions to gain a general introduction to quality improvement. Further training was then given in a bespoke manner to those health visitors who would be actively involved in the quality improvement projects, with the material tailored to make it relevant to health visitors. Awareness-raising sessions were held in each of the provider sites to ensure all health visitors were aware of the scorecard project. The local health visitor leads implemented their quality improvement projects by utilising the BMJ quality improvement tool, supported by the quality improvement health visitor champions.

1.8 Development of the Action Learning Sets

The action learning sets provided each health visitor with the time and space for reflection, questioning, and action planning on the real time challenges/ experiences they faced as they implemented the quality improvement projects supported by the BMJ Quality tool.

They also learned how to facilitate action learning sets, which further developed their coaching skills, and helped embed capacity for facilitation of action learning sets within their organisations, enhancing sustainability of the work.

1.9 Aspects on attachment

Although questions relating to attachment of mother and baby were originally planned to be included in the PREMS, there is currently no recognised evidenced-based tool validated for use by health visitors and no nationally-used method of collecting data on this. Several of the sites used free text to report on attachment issues which was not amenable to data extraction within the resources and timescale available for this project. It is anticipated that national training for the Parent Infant Interaction Observation Scale (PIIOS) will start in 2015 and will provide a validated tool for collecting these data. Following discussions with Professor Peter Fonagy, (Freud Memorial

Professor of Psychoanalysis, UCL) the questions covering attachment were removed from the current scorecard. This area will benefit from further work once this tool is in use and clinical records/ data systems are developed.

1.10 What is the scorecard?

The scorecard is a service-level quality improvement (QI) tool that is completed monthly and records national best practice adherence and a range of activity, outcome and experience data. These data were used to inform local QI projects and the impact of these QI projects can be monitored and reviewed by examining changes in scorecard data over time. A screenshot from the Excel spreadsheet scorecard is shown in Figure 4.

Measure	London (2012)	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15
ANTENATAL																
The service consistently assess all women antenatally for peren together, "I know what is in my care and support plan and I know what to do if things go wrong".																
% mothers/fathers assessed antenatly who are asked about past history of mental health problems, and a care history documented in mother's clinical record		14%	12%	12%	8%	12%	11%	11%	0%	13%	11%	8%	9%	14%	22%	28%
% mothers assessed antenatally who have maternal mood assessed using a relevant tool: Whooley mood assessment tool/EPDS/PHQ9 or maternal mood assessment tool		43%	49%	42%	45%	39%	40%	40%	33%	39%	42%	37%	48%	60%	61%	59%
% women assessed antenatally who have moderate to severe perinatal mental health problems and are referred to GP/ psychologists/ perinatal mental health services		missing data	missing data	missing data	missing data	missing data	missing data	missing data	missing data	missing data	missing data	missing data	missing data	missing data	missing data	missing data
POSTNATAL																
The service identifies all local women with low - moderate pe was asked how I felt"																
% mothers/fathers assessed postnatally who are asked about past history of mental health problems, and a care history documented in mother's clinical record		10%	10%	13%	11%	11%	9%	7%	9%	7%	9%	8%	9%	8%	11%	10%
% mothers assessed postnatally who have maternal mood assessed using a relevant tool: with Whooley mood assessment tool/EPDS/PHQ9 or maternal mood assessment tool		65%	65%	63%	64%	64%	61%	60%	60%	61%	60%	64%	66%	64%	64%	66%
All women who are HARM negative receive effective intervention or helped me to understand & make use of local services that are relevant to me & my family"		missing data	missing data	missing data	missing data	missing data	missing data	missing data	missing data	missing data	missing data	missing data	missing data	missing data	missing data	missing data

Figure 4: Example screenshot of the scorecard

The logic model shown in Figure 5 outlines the aspirational uses of the scorecard and the processes of change theorised to occur through use of the scorecard.

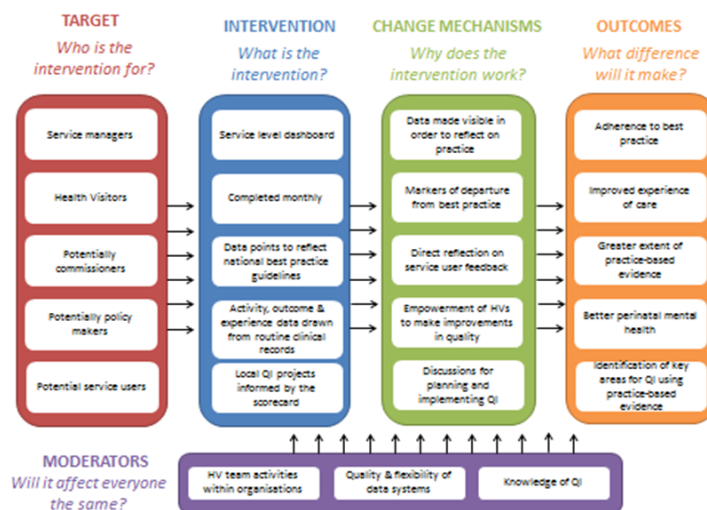


Figure 5: Theory of change/logic model for the perinatal mental health value scorecard (developed by Julian Edbrooke-Childs, Anna Freud Centre, and reproduced with permission)

The scorecard can be used by managers and health visitors (HVs) and may be shared with commissioners or policy makers and could in future be made publicly available for service users to access. The scorecard was design to make data visible for HVs to reflect on their current practice

and to highlight any areas where there are departures from best practice. Service user feedback was made available to HVs and HVs were empowered to make improvements in quality in their local area.

An overview of how the scorecard can be used for QI is shown in Figure 6 below. Current practice was reviewed and areas for improvement identified. Changes were made using QI methodology and progress was reviewed. Each of these processes were moderated by a number of factors, most notably the culture and team activities within local HV organisations, the quality of existing data systems or their flexibility to be adapted to local need and finally, local knowledge and expertise in QI. The outcomes of using the scorecard and related QI projects potentially include better adherence to best practice guidance, improved experiences of care, more evidence-based practice, continuous identification of areas for QI and ultimately, better perinatal mental health outcomes for women and their families.



Figure 6: How the scorecard can be used for QI

1.11 References

1. Department of Health (2011): Health Visitor Implementation Plan 2011–15, A Call to Action February 2011
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/213110/Health-visitor-implementation-plan.pdf
2. NHS England (2014) Five Year Forward View <https://www.england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf>
3. Department of Health (2011) The National Health Visitor Plan: progress to date and implementation 2013 onwards
4. Boots Family Trust Alliance (2013). Perinatal mental health: Experiences of women and health professionals
5. Pawlby, S., et al. (2009). Antenatal depression predicts depression in adolescent offspring: Prospective longitudinal community -based study. *Journal of Affective Disorders*, 113, 236-243
6. Bauer, A., Parsonage, M., Knapp, M., Lemmi, V., Adelaja, B. (2004). The costs of perinatal mental health problems. Report from the Centre for Mental Health and London School of Economics. Available from: <http://everyonesbusiness.org.uk/wp-content/uploads/2014/10/Embargoed-20th-Oct-Final-Economic-Report-costs-of-perinatal-mental-health-problems.pdf>. Accessed September 14th, 2015.
7. Wave Trust (2013). Conception to age 2 – the age of opportunity. Addendum to the Government’s vision for the Foundation Years: ‘Supporting Families in the Foundation Years. Croydon, Surrey.
8. Chief Medical Officer (2012). Our Children Deserve Better: Prevention Pays. London: Department of Health.
9. Murray C, Lopez A. (1996) A comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020.
10. Department of Health (2009). Healthy Child Programme: Pregnancy and the First 5 Years of Life. In: Health Do, editor. London: Department of Health
11. Hearn G, Iloff A, Jones I, Kirby A, Ormiston P, Parr P, et al (1998). Postnatal depression in the community. *Br J Gen Pract*. 48(428):1064-6
12. Appleton, J.V. & Cowley, S. (2008). Health visiting assessment – unpacking critical attributes in health visitor needs assessment practice: A case study. *International Journal of Nursing Studies*, 45, 232-245
13. Cowley, S. et al. (2013). Why health visiting? A review of the literature about key health visitor interventions, processes and outcomes for children and families (Department of Health Policy Research Programme, ref. 016 0058). London: King’s College London
14. BMJ Quality tool <http://quality.bmj.com/>

2 Evaluation findings for the Perinatal Mental Health Value Scorecard

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2.1 Evaluation aims and methods

2.1.1 Evaluation aims

This evaluation was conducted with a view to assessing the implementation of the perinatal mental health value scorecard, to explore how it could be used to improve adherence to best practice, to assess experience of services, and to identify the main barriers and facilitators to successfully implementing the scorecard. As this evaluation was conducted during the development and initial roll-out of the scorecard through the project, the primary focus of the evaluation was to identify key early learning points from the project and the QI projects that were introduced during this time, rather than measuring changes to longer term outcomes, although the potential of the scorecard to impact on such outcomes (e.g. maternal mental health) was an important framework for analysing and understanding the data collected.

Based on the project aims of driving up quality and consistency in HV services, identifying quality indicators and training others in QI, this evaluation sought to explore three main research questions (see below) through a realistic evaluation approach (1). The theory of change model described in Figure 5 outlines the inputs, change mechanisms, anticipated outcomes and moderators in the scorecard project and was the framework that was used to interpret the results from this evaluation.

The purpose of this evaluation was to assess the process of developing and implementing the scorecard, and subsequent QI projects, across four sites, and to identify the main barriers and facilitators to its introduction and use as a tool with the potential to impact on perinatal mental health service quality and provision.

Specifically, the evaluation research questions were:

1. Does the scorecard improve adherence to best practice and what areas of change to current practice does the scorecard help to identify?
2. How can the scorecard be used to improve patient experience?
3. What are the main facilitators and barriers to implementing the scorecard?

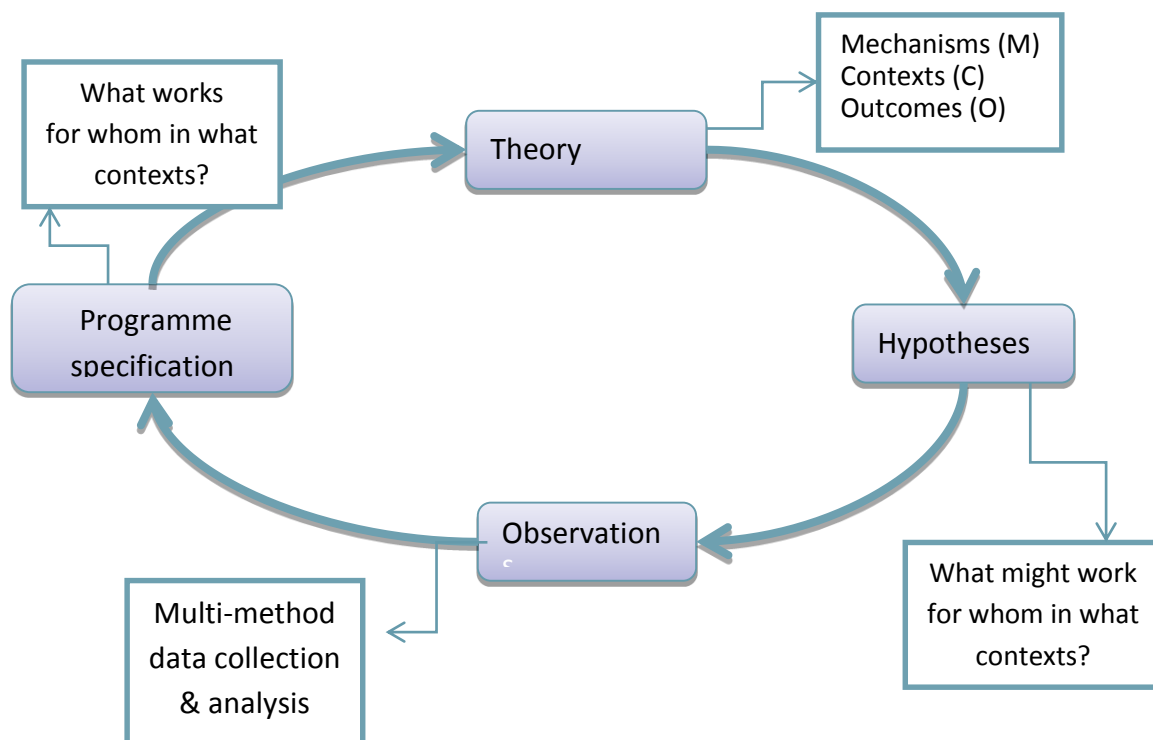


Figure 7: The realistic evaluation cycle (adapted from Pawson & Tilley, 1997)

2.1.2 Evaluation methods

The approach used in this evaluation study was a multi-level, mixed-methods realistic evaluation framework (1) (Figure 7). This framework aims to:

1. Understand the mechanisms through which interventions work
2. Understand the contextual conditions necessary to trigger these mechanisms
3. Develop outcome pattern predictions according to the context and mechanisms triggered (see Figure 5).

Multiple methods and data sources are used in the realistic evaluation framework to help provide a comprehensive understanding of the myriad of factors involved in producing change through an intervention. Realistic evaluation is a theory-driven framework that aims to explore ‘what works, for whom, in what context and to what extent’ by focusing on the ways that the context (i.e. settings) of a social intervention interacts with a mechanism of action (i.e. underlying processes or structures) to produce outcomes and how outcomes in turn impact on subsequent contexts and mechanisms.

For example, if at the close of the evaluation study, it appeared that the implementation of the scorecard was more successful in one site than others, a realistic evaluation approach can help to explain why this may have been the case by examining the wider contextual factors at play such as: staff motivation, resources available and characteristics of the service population. Likewise, if the scorecard appears to have made no impact in one site, a realistic evaluation approach can explore the reasons behind this such as: management structures, time burden/caseload of HVs and language barriers in implementation.

2.2 Scorecard data

Data were collected using qualitative and quantitative methods from a range of sources including HVs, service users, observations and field notes from meetings, in addition to data from the scorecard itself. The type of data collected and the measures used for each strand are outlined below.

Secondary analysis of routine clinical data collected through the scorecard project was used for the evaluation and included baseline data from March 2014 to December 2014 and implementation data from January 2015 to May 2015. Initially the baseline data available on the scorecard tended to show very low levels of compliance with national guidelines. Meetings with HV leads suggested that this was mainly due to problems extracting the necessary data for the scorecard rather than problems within practice. To assess the validity of this argument, a random audit was conducted at each site for 20 case files looking at four main data points (past medical history, maternal mood assessment, given listening visits and referred to relevant services). These data were then compared to the data available on the scorecard to assess the differences between practice and data extraction. The findings from this audit are outlined in the results section below.

Changes over the course of the project in relation to individual site QI interventions were assessed through scorecard data where available. Types of data collected through the scorecard included for example: number of mothers due contact visits (both antenatally and postnatally), proportion of mothers who received maternal mood assessments and proportion of mothers who received listening visits when deemed necessary.

2.3 Service user questionnaire

A service user experience questionnaire was designed for the project and evaluation based on focus group findings with service users and the extant literature in this area (full details of the development of this questionnaire are available in Appendix E). The final questionnaire comprised 13 items focusing on service users' perceptions of their relationship with HVs and their previous experiences of services; an additional open comment box was also included. The full questionnaire (13 items) gave a reliability score of $\alpha = .94$ (see Appendix E for a copy of the final version).

The questionnaire had a 5-point Likert type response option ranging from 1 = 'strongly agree' to 5 = 'strongly disagree'. Scores were calculated for each individual item across the questionnaire and also under each of three themes included in the scorecard. The three themes were:

1. *'I feel supported and understood by my health visitor'* (7 items). Theme 1 included items that asked about perceived support and understanding from health visitors (e.g. *I feel that my health visitor treats me with respect* or *I feel that my health visitor understands how I'm feeling and why*). Reliability for this theme was acceptable at $\alpha = .88$.
2. *'After contact with my health visitor I feel confident and more knowledgeable about things I need to know'* (5 items). Theme 2 addressed perceptions of information about relevant services given to women by their HVs (e.g. *After contact with my health visitor I know where I can get help if I'm feeling low or upset* or *I feel that my health visitor helps me to get the support that I need*). Reliability for theme 2 was also $\alpha = .88$.

3. *'I was asked how the whole family is adjusting to the new baby'* (1 item). The final theme was a single item asking if health visitors had enquired about how the family was adjusting to the baby; reliability for this item was not calculated as it was a single item.

2.4 HV questionnaires

Two questionnaires were developed to assess HV's attitudes to maternal mental health, self-efficacy in offering support, perceptions of the scorecard and attitudes towards QI interventions through a free-text response question. In particular, the questionnaire asked about HV's current practice and how this fitted with existing guidelines (e.g., use of maternal mood assessments: *'Do you use any of these tools/measures to assess mental or emotional health?'*). Overall, 16 items asked about HV's self-efficacy in supporting perinatal mental health (e.g., *'Initiate discussion with women about their mental health'*), which was drawn from an existing framework for measuring self-efficacy (2). The internal consistency was .97. Finally, 17 items asked about HV's general attitudes to perinatal mental health (e.g., *'I feel I know enough about the factors that put women at risk of PND to be able to effectively carry out my role as a HV with this group'*) which were developed drawing on existing measures (3-9). The internal consistency was .77. The first questionnaire (Time 1) was collected during the early implementation stages of the project and the second (Time 2) was distributed during April/May 2015. As only two Time 2 questionnaires were returned before the end of the evaluation, these are not included in the final analysis. The full Time 1 questionnaire is available in Appendix D.

2.5 Service user focus groups

Focus groups were conducted with a self-selected group of service users at each site to explore their experiences and perspectives of health visiting services in greater depth than achievable through questionnaires alone. General themes explored in the focus groups included past experiences of health visiting, positive and negative views of health visiting and perceptions of the HV's role in promoting and supporting positive maternal mental health. A topic guide for service user focus groups is available in Appendix C.

2.6 HV interviews and focus groups

HVs at each site participated in either focus groups or one to one interviews or email/written response interviews. Participants self-selected to participate in interviews/focus groups to explore their views on current perinatal mental health service provision, barriers and facilitators to implementing the scorecard and areas of focus for QI projects. Topic guides for focus groups and interviews can be found in Appendix B. In addition, each HV lead from the sites was also interviewed towards the end of the project to gather information on their experiences of being involved in the piloting of the scorecard and to assess what they perceived to be the main barriers and facilitators that they faced.

2.7 QI project case study data

Case studies were performed for three of the four sites focusing on the processes and outcomes of QI projects that were implemented over the course of the study. The case studies aimed to better understand how the individual contexts of each site influenced the change mechanisms and subsequent outcomes of intervention and to explore potential barriers and facilitators to using the scorecard in the future.

2.8 Evaluation research questions and data analysis

The evaluation sought to answer three research questions through the collection and analysis of the body of data outlined in the previous section. A mixed methods approach was used where qualitative and quantitative data were collected and analysed concurrently. The primary data were qualitative with quantitative data used to add breadth to the findings. The data were triangulated after collection in order to fully understand the research findings and to adequately answer each of the evaluation research questions. A summary of the research questions, data sources and methods of analysis is given in Table 1 below.

Table 1: Summary of research questions, data sources and analyses

Research questions	Data sources	Analysis
Does the scorecard improve adherence to best practice Does the scorecard and what areas of change to current practice does the scorecard help to identify?	Routine clinical data used to populate the scorecard	Run charts to track change over time Descriptive analysis of scorecard data and case studies of QI projects
	Interviews and focus groups with HVs	Thematic analysis of data
	HV questionnaires	Descriptive statistical analysis
How can the scorecard be used to improve patient experience?	QI project observations and reports and field notes	Case study analysis of individual QI projects Descriptive qualitative analysis of observation notes
	Patient experience questionnaires	Descriptive statistical analysis of responses by month, site and item Descriptive statistical analysis for each scorecard theme Content analysis of open comments on questionnaires
	Focus groups with service users	Thematic analysis of data
What are the main facilitators and barriers to implementing the scorecard?	Interviews and focus groups with HVs	Thematic analysis of data
	Health visitor questionnaires	Descriptive statistical analysis of data
	Interviews and focus groups with HVs	Thematic analysis of data

Research questions	Data sources	Analysis
	QI project observations and reports and field notes	Case study analysis of QI projects Descriptive qualitative analysis of observation notes

2.9 Participants and procedures

The scorecard study was conducted at four London NHS Trusts (referred to in this report as Sites 1, 2, 3 and 4). Each of the research sites were represented by one or two HV leads who attended monthly Task and Finish group meetings, liaised with local IT teams and managers, and organised HVs at their own sites for awareness and training sessions.

At each of the sites, all HVs were invited to take part in the evaluation regardless of their level of involvement in the scorecard project. This approach was taken so that a wide variety of views could be gathered from staff at each site to help the evaluators better understand the contexts within which the scorecard was being introduced and to gain an insight into current practices around perinatal mental health. There were a number of ways that HVs were able to participate in either a qualitative or quantitative part of the study; the types of participation and numbers involved are outlined in Table 2 below.

Table 2: Data collection methods and participant numbers for staff data

Data collection method	Number of participants
Focus groups	15
One to one interviews	6
Email interviews	2
Open ended written questions	18
Questionnaire – Time 1	34

Focus groups were held on site where HVs normally worked and primarily included those who were part of QI teams set up as part of the scorecard project, and lasted an average of one hour each. One-to-one interviews took place either at the site where HVs were based or were conducted over the telephone, and took an average of 40 minutes each.

Open-ended written questions were distributed to staff at local forum meetings, although at one site as it was not possible to hold a focus group with HVs due to a number of factors. Email interviews were conducted with two participants who expressed an interest in being interviewed but were unable to take part in face-to-face or telephone interviews within the timeframe of the evaluation.

Service user participants included those who completed an experience questionnaire consisting of 13 items that asked about their perceptions of the relationship between themselves and their HV. These were collected monthly at each site, usually through health visiting clinics, over the course of

a specified week in that month. A total of 659 questionnaires were returned over the course of the evaluation from all sites.

A number of service users also took part in focus groups that were held at their local health centre or children's centre and lasted approximately one hour. In total, 26 service users participated in focus groups across the four services, with at least one focus group being held in each site.

2.10 Findings

This section outlines the findings of the evaluation data analyses by each research question.

2.10.1 Research question 1: Does use of the scorecard improve adherence to best practice and what areas of change does it help identify?

One of the key aims of the scorecard study was to drive up the quality and consistency of perinatal mental health service delivery and to be able to use these data to inform commissioners of the activity, outcomes and experiences of health visiting services.

This first research question addresses this aim through a focus on current best practice adherence at each site and the ways in which the scorecard has, and can in the future, be used to increase quality and consistency in relation to best practice in perinatal mental health services. Data for exploration of this research question were drawn from baseline and implementation data available from the scorecard, qualitative analysis of interviews and focus groups with HVs, QI project case studies and observations and descriptive statistical analysis of HV questionnaires. Case studies of QI projects underway at three of the sites are included here as examples of the ways in which the scorecard has already been used to help improve the quality and consistency of health visiting services.

Increased use of recommended national health visiting guidelines and evidence-based practices are thought to contribute to better quality of services by identifying potential perinatal mental health problems and ensuring that the correct intervention is implemented to treat or prevent these problems. The specific element of the theory of change being tested through this research question is shown in Figure 8.

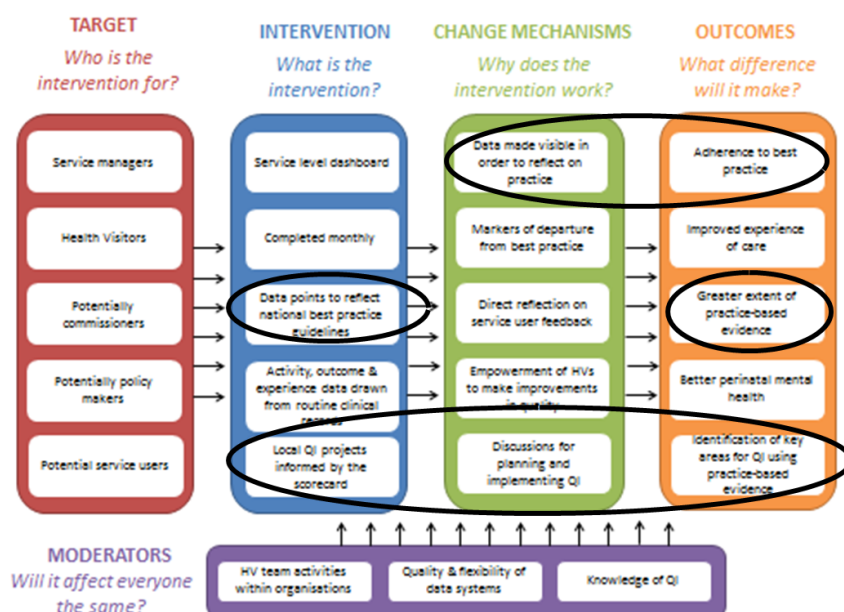


Figure 8: Elements of theory of change model relevant to research question 1

2.10.2 What is best practice?

Best practice in health visiting is set out in a number of national guideline documents including: the Healthy Child Programme (HCP) (10), the National Institute of Health and Care Excellence (NICE) and the Health Visitor Service Specification 2015-2016 (11).

An overarching theme from all of these guidelines and recommendations is a focus on prevention and early intervention for a range of physical and mental health difficulties. The guidelines most pertinent to the focus of the scorecard are summarised in Table 3 below and provide the framework for which this research question was approached.

Table 3: Summary of best practice guidelines issued by HCP, NICE and the HV service specification

HCP	NICE	HV Service Specification 2015-16
The programme should be led primarily by health visitors		Have lead role in delivery of the HCP
Early identification of need and risk and protective factors	Use of Whooley questions in the first instance to be followed by EPDS or similar measure, if there is an indication of depression, at first contact and during early postnatal period. Assessment of past history of mental health difficulties.	Maternal mental health assessment at each contact
Supporting parents to provide sensitive parenting especially in first months and years	Assess and address the needs of the whole family that may have an effect on mother's mental health	Promote parent and infant mental health and secure attachment

HCP	NICE	HV Service Specification 2015-16
Screening programmes in the context of agreed local pathways, with clear guidelines on assessment and referrals and data systems that can support the pathway	Have clearly specified care pathways that detail how to access assessment and treatment for service users experiencing mental health difficulties	Keep appropriate records to enable high-quality data collection to support the delivery, review and performance management of services
Interventions that are linked to evidence-based practice	Provide interventions within a stepped-care model of service delivery	

As the scorecard and QI projects were still in a relatively early stage of implementation, the results for this research question as presented here focus more on the potential for future use of the scorecard for increasing the use of evidence-based practices and adherence to national and local guidelines; in particular, this section focusses on the ability of health visiting services to demonstrate their adherence to evidence-based practice, a crucial first step for increasing adherence. The analysis focuses primarily on the areas of best practice that have to date been identified as targets for QI in the sites, for example in ensuring a maternal mood assessment is conducted at every contact.

2.10.3 Scorecard data

A number of data points on the current version of the scorecard directly reflect the best practice guidelines as outlined above. For example, best practice guidelines state that HVs should use validated measures to assess for the presence of perinatal mental health problems at first contact and in the early postnatal period. Row 12 of the scorecard (as depicted in Figure 9) provides a means of recording the proportion of women seen who have been assessed using a validated measure on a monthly basis. HVs can then keep track of how often they are using these tools and recording them in a way that can be used for the scorecard; this reflective practice can help identify areas for potential QI.

	A	D	E
1	Perinatal Mental Health Value Scorecard - Health Visits	3/15	
2	Measure	UK/UK	London
9	ANTENATAL	Lowest	
10	The service consistently assess all women antenatally for perinatal mental health problems: Taken together		
11	% mothers/fathers assessed antenatally who are asked about past history of mental health problems, and a care history documented in mother's clinical record		
12	% mothers assessed antenatally who have maternal mood assessed using a relevant tool: Whooley mood assessment tool/EPDS/PHQ9 or maternal mood assessment tool		
13	% women assessed antenatally who have moderate to severe perinatal mental health problems and are referred to GP/ psychologists/ perinatal mental health services		
14	POSTNATAL		
15	The service identifies all local women with low - moderate perinatal mental health problems: "I was asked about your mental health during pregnancy"		
16	% mothers/fathers assessed postnatally who are asked about past history of mental health problems, and a care history documented in mother's clinical record		
17	% mothers assessed postnatally who have maternal mood assessed using a relevant tool: with Whooley mood assessment tool/EPDS/PHQ9 or maternal mood assessment tool		
18	All women who are HARM negative receive effective intervention: health visitor helped		

Figure 9: Example screenshot of the scorecard

Best practice guidance also requires HVs to assess parents' past history of mental health difficulties and data point 11 (in Figure 9) can be used to record the proportion of parents asked about this. Again, if performance here is less than desired, it could be a target for a QI project (as has already been implemented in one of the sites, see case studies in the following section).

Best practice guidelines state that women during the perinatal period who are identified as experiencing more serious mental health difficulties at this time should be referred to appropriate services for help and support. Row 13 in Figure 9 shows where this can be recorded and tracked over time; if identified as an area of improvement, this could be another potential QI project (e.g., assessing the availability of appropriate services in different areas if it is found that referrals are not made due to a lack of services).

In order to answer this research question, scorecard data were used to first assess current best practice adherence at each site through baseline data available from March 2014 to December 2014. Changes were then explored at each site from the initial start of the scorecard in September 2014 to the launch of QI projects in January 2015 to the end of the evaluation study in May 2015.

QI theory is based on the assumption that data relating to current practice are available and will help to accurately identify areas that are not meeting best practice, or optimal, service provision (12). In order to effect change in services it is first necessary to measure and review current practice and this can only be done when data reflect actual service provision.

However, for many of the sites, the data necessary to accurately measure their current adherence to best practice guidelines was not possible, as much of the data was unavailable in a format that was suitable for extraction to populate the scorecard. Much of the information relevant to the scorecard was reported by HV leads to be recorded in free text format rather than being coded onto the IT system and at times, when it was coded, there being numerous options to choose from, which were

not standard within or across sites. This meant that many of the cells in the scorecard remained unfilled with 'missing data' or recorded as 0% (see research question 3 for a full discussion of barriers to implementation).

In light of this issue of missing data, many of the sites made better completion of data, according to more standardised read codes on their IT systems, their first QI project in an attempt to be able to collect more accurate data on service provision. In turn, this should lead to a clearer assessment of the areas that are in actual need of service improvement and those that simply need a more suitable means of being recorded.

Once a standard means of recording the relevant areas of a service has been established at each site, it would be expected that areas for QI would be easier to identify and target. Changes over time could then be measured monthly to assess progress towards targets and QI projects can be regularly reviewed and updated.

In order to gain a sense of how much of the missing scorecard data was due to reporting differences, and how much was due to departures from guidelines, each site conducted a random audit of 20 antenatal and 20 new birth visit case files (one site provided only 10 of each). These cases were randomly chosen and examined manually in January 2015 to assess where a) guidelines were being followed and recorded in free text in case notes, which could not be extracted and pulled into the scorecard vs. b) guidelines were being followed and coded onto IT systems, which could be extracted and pulled into the scorecard. Case notes were reviewed for four scorecard data items: whether parents had been asked about past medical history, whether a mood assessment with a recommended tool had been conducted, whether a mother had been referred to other mental health services if necessary, and whether a listening visit had been conducted if necessary.

The third question of mothers being referred to other services and the fourth relating to the proportion of women given listening visits are based on the proportion of women who are deemed to be in need of specialist services or extra support on the scorecard, so optimal best practice service provision should show 100% of women in need of services have been referred each month or offered listening visits. However, it is not clear if HV leads took this into consideration in assessing the case files and may have simply reported the total number of women referred or offered listening visits regardless of level of need and this should be kept in mind when interpreting the graphs below. Nonetheless, almost all sites reported a discrepancy between the proportion of women referred or given listening visits recorded on the scorecard and those referred from case files suggesting a data recording or extraction issue. Comparisons of each site between this audit and the available scorecard data at the time are given in Figure 10 and Figure 11.

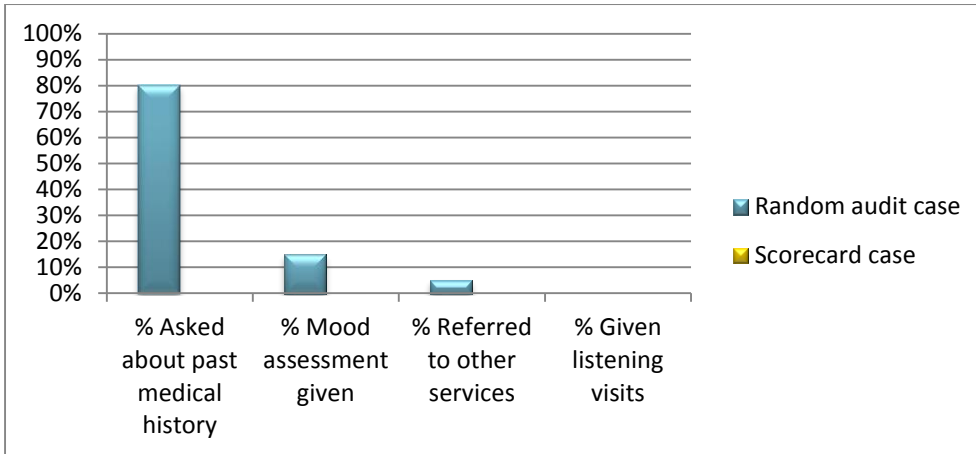


Figure 10: Site 1 comparison data for ante natal contacts (N = 20)

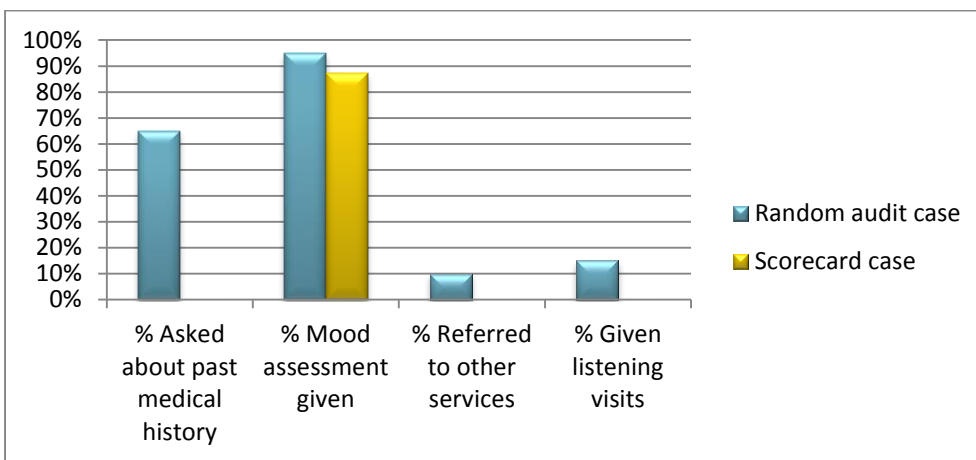


Figure 11: Site 1 comparison data for new birth contacts (N = 20)

In Site 1, there are clear differences between what has been extracted to populate the scorecard and service provision as recorded on case notes, in different ways for almost all of the questions included. No data were available for inclusion in the antenatal section of the scorecard for Site 1 (Figure 10) and while they were only conducting a small number of antenatal visits at the time of the audit, there was some recording on case note files, although mood assessments were still only being given approximately 15% of the time.

For the new birth visits (Figure 11), only mood assessment was recorded on the scorecard although, from the random case file data, it appears that best practice guidance is being followed to some extent. The proportion of women given a mood assessment at this visit was similar between the scorecard and random audit cases and was over 80% in both sets of data; this may be partly due to this being a targeted area for measurement within this site at the time leading up to and throughout the implementation of the scorecard.

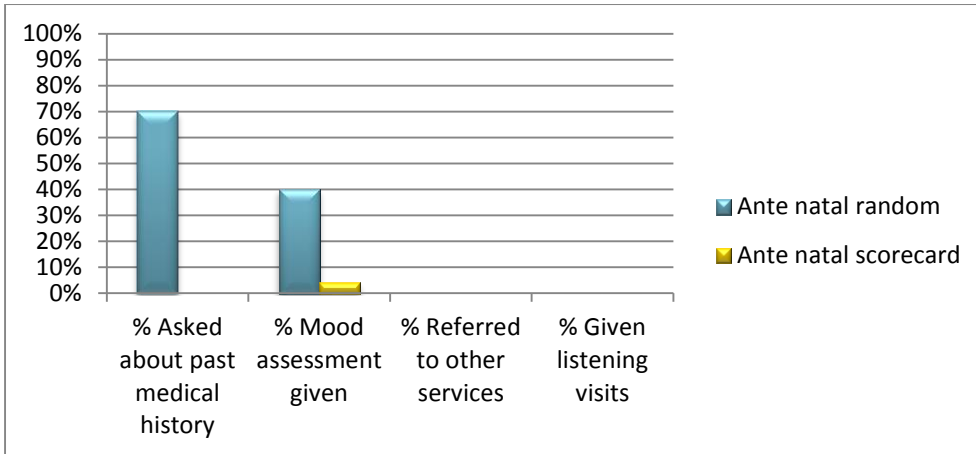


Figure 12: Site 2 comparison data for antenatal contacts (N = 20)

At Site 2, it was not possible to distinguish which case files contained details on antenatal or postnatal contacts and, of those randomly selected for this comparison, none of the files recorded a new birth contact. It was therefore, only possible to compare audit files with the scorecard data for antenatal visits in this instance (Figure 12). However, there was still a clear difference between what was extracted for the scorecard and what was entered as free text on case files in terms of the first two data points. While there was no scorecard data on the proportion of women asked about past medical history, 70% of those randomly audited recorded this question being asked.

In terms of mood assessments, less than five percent of those recorded in the scorecard appeared to have received a mood assessment while 40% of the random audit cases had. This suggests that what appears to be a low level of adherence to best practice guidelines in the scorecard data is at least partially due to the nature of recording these actions, which makes it difficult to extract the necessary data for the scorecard.

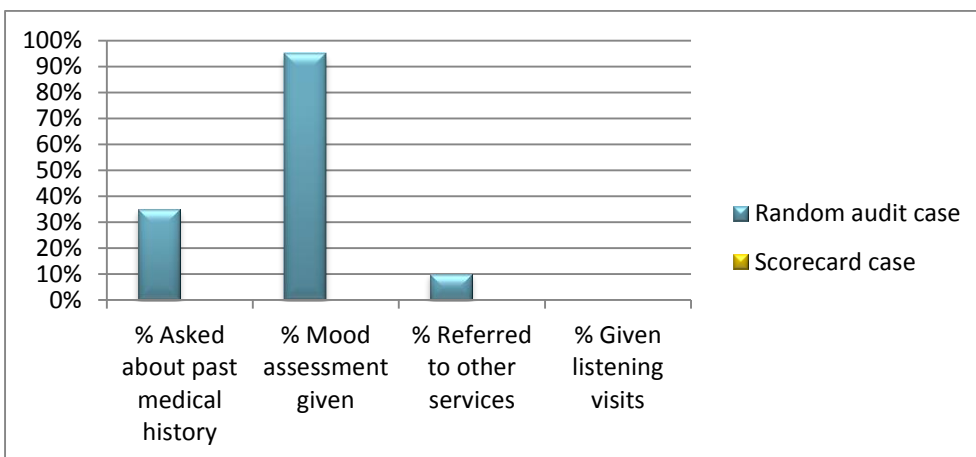


Figure 13: Site 3 comparison data for antenatal contacts (N = 20)

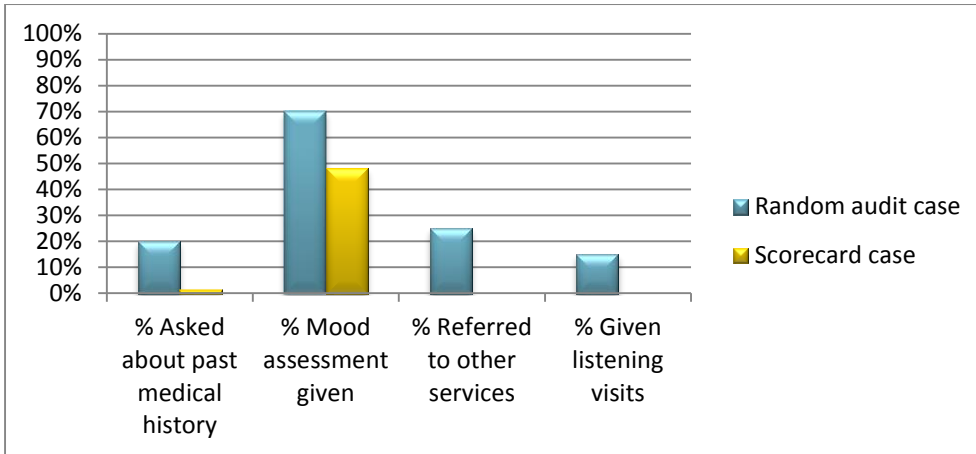


Figure 14: Site 3 comparison data for new birth contact (N = 20)

At Site 3, there were again clear differences between what was extracted to populate the scorecard and what was revealed through the random audit exercise. Most notably in the antenatal cases (Figure 13), over 90% of random cases recorded using a maternal mood assessment whereas the scorecard showed this as missing or 0%. There was no data available for the scorecard for any antenatal contacts but these were clearly being conducted and some recording of service provision was recorded through manual notes in case files.

Discrepancies were also seen for the new birth contact data (Figure 14) where less than 5% of those included on the scorecard appeared to have been asked about their past medical history, whereas 20% of the random audit case files recorded this question as being asked. While the scorecard showed almost half of all new birth contacts included a maternal mood assessment, a further 20% were recorded as having been assessed according to case files. Likewise, with referrals and listening visits offered, there were no data available to populate the scorecard but these were being conducted at least to some extent based on the random case audit.

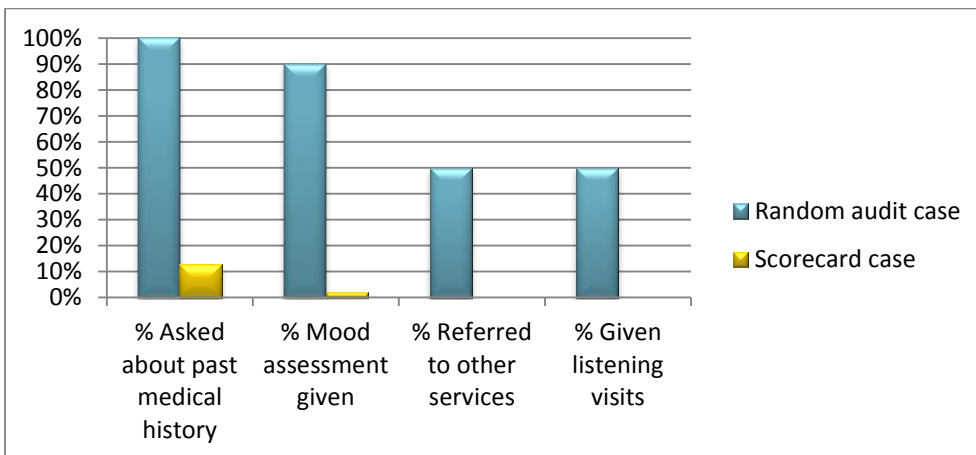


Figure 15: Site 4 comparison data for antenatal contacts (N = 10)

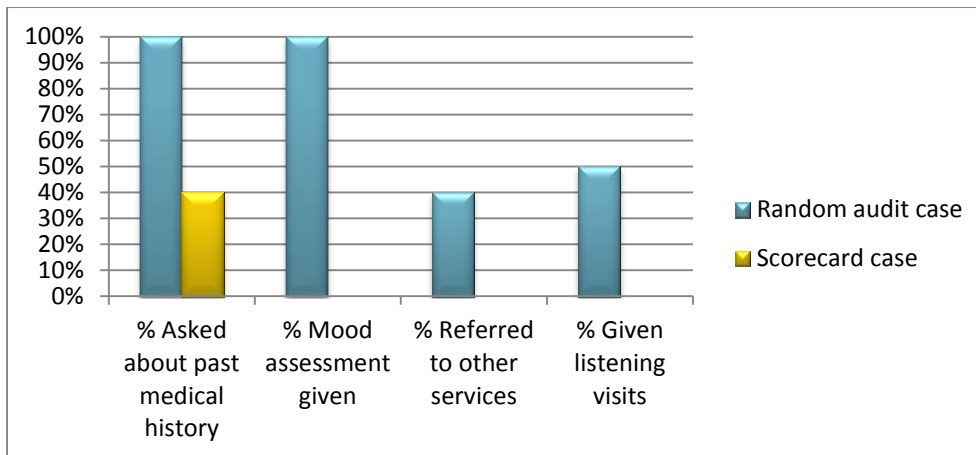


Figure 16: Site 4 comparison data for new birth contacts (N = 10)

Site 4 provided similar results. For example questions about past medical history and conducting a maternal mood assessment were at either 90 or 100% in the random case files for both antenatal (Figure 15) and new birth visits (Figure 16), but were either missing entirely or showing only 40% compliance in the scorecard. Likewise, there were no recorded instances of mothers being referred to other services or being offered listening support on the scorecard for Site 4 but these were happening up to 50% of the time when looking at the random case notes.

We compared scorecard data over time for the four sites on the data point for which there was the most comprehensive data available: conducting a maternal mood assessment at postnatal contacts (Figure 17). Across baseline and implementation of the scorecard, there appeared to be a general trend of increasing use of mood assessments at three of the sites with all of these sites showing a higher proportion of mood assessments being completed at the end of the evaluation compared to the pre-implementation phase. Only Site 4 appeared to have maintained a consistent level of completing maternal mood assessments across the fifteen month data period. Meetings with HV leads suggested that this may have been due to a local focus on other areas relevant to the HCP that were promoted over this time period to the detriment of recording maternal mood assessments.

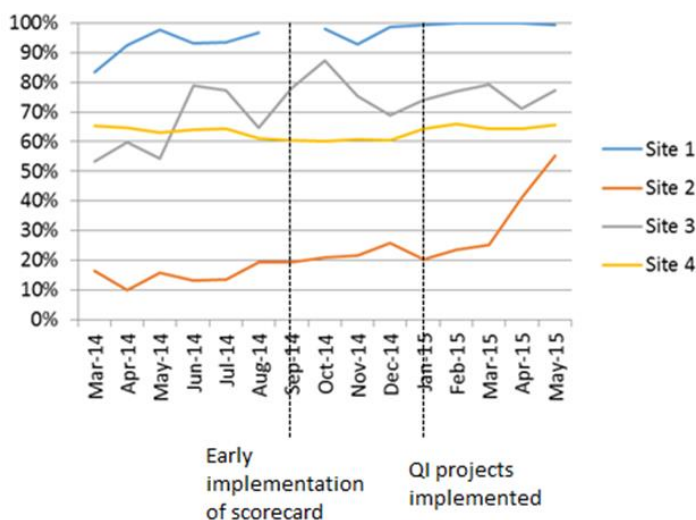


Figure 17: Proportion of women at each site recorded as having a maternal mood assessment at postnatal contacts

Note: September 2014 data from site 1 was missing.

Overall, the average proportion of mothers with a maternal mood assessment recorded increased from 55% in March 2014 to 74% in May 2015. Site 2 in particular showed a marked increase in the recording of maternal mood assessments, which may have been due to the QI project introduced at Site 2 in March 2015. This project involved the use of a common template for recording maternal mood assessments across the trust and is discussed in more detail later in this section.

2.10.4 HV questionnaire data

HVs at each of the sites were asked to complete a questionnaire in the early stages of scorecard implementation. These questionnaires asked about current use of validated or recommended tools, levels of confidence in assessing and addressing perinatal mental health difficulties and attitudes toward perinatal mental health. The questionnaires also contained a number of open comment spaces for health visitors to give their opinions on current service provision and where improvements could be made.

A total of 34 HVs completed and returned questionnaires across the four sites. Results from this survey showed that 83% of HVs reported assessing maternal mood/mental health at every visit for more than half of the service users they saw. Just over 91% said that they use the Whooley questions at each visit and 81% reported use of the EPDS at each visit. All of those who responded to the survey said they spent a minimum of 30 minutes with mothers at each contact visit with most spending an average of 1 hour (56%) for each contact.

Self-efficacy is thought to develop through past experience, training and knowledge and support from others (2). HVs who feel they are more capable of assessing and responding to mental health difficulties in women are likely to make use of measurement tools more often, to be better able to detect problems and may be more successful in addressing difficulties compared to those who have low levels of self-efficacy in this area.

The self-efficacy scale used was adapted from other similar scales based on Bandura's theory of self-efficacy (13). Participants were asked to rate their level of confidence on a scale of 0 to 10 on statements such as "*Encourage women to talk about their worries or anxieties*" or "*Offer the most appropriate type of support for mental health problems*". A score of 0 indicated no confidence and 10 indicated complete confidence in abilities. The mean score for self-efficacy in the present sample of HVs was 8.1 ($SD = 1.30$) indicating relatively high levels of confidence. Internal consistency for this 16 item questionnaire was high at $\alpha = .97$.

In order to examine the association between self-efficacy and use of evidence-based practice, the correlation between self-efficacy and the use of the EPDS (as a proxy for best practice) was calculated. Findings indicated that there was no correlation between reported use of the EPDS and self-efficacy for these participants ($p = .46$). Although the EPDS is a self-report questionnaire, it is recommended that it be administered by those who have had specific training in its use and in mental health assessment (14). During Task and Finish group meetings it became clear that not all HVs had been trained in using the EPDS and many had not had access to the scale manual, which may have led to the scale being administered to women during the perinatal period without sufficient discussion of responses or guidelines in completing it. The questionnaire asked participants

if they had received training in general in the area of perinatal mental health, and the correlation between use of the EPDS and having received training in perinatal mental health was also non-significant ($p = .66$).

It is possible that the question in the evaluation questionnaire relating to the use of the EPDS was not sufficiently detailed to be able to use it as a true marker of best practice service provision and that further questions on self-efficacy in using the EPDS specifically may have been useful to understand the non-significant correlation in this case. Field notes from monthly Task and Finish group meetings indicated that many HVs were unaware that there was a manual available for the EPDS, which supports the suggestion that further support, training and guidance might be useful. This was further confirmed through focus groups with service users who spoke about being given the questionnaire without understanding its purpose or the consequences of revealing that they were having mental health difficulties.

Attitudes to mental health were also assessed in the evaluation questionnaire as they are thought to have an influence on how HVs are likely to respond to mental health issues in service users (15) and could potentially have an impact on the intervention services they offer to those in need. The attitudes to mental health scale contained 17 items (four items were reverse scored) and included statements such as *“Postnatal depression is an illness just like any other”* and *“Women with postnatal depression usually feel that they are responsible for their problem”*.

Responses ranged from 0 to 10, with 0 indicating strong disagreement and 10 indicating strong agreement. Lower scores on this scale indicated more negative views towards women with postnatal depression. The mean score for attitudes toward mental health in this group was 7.5 ($SD = 1.01$) indicating small levels of negativity towards women with postnatal depression but overall positive views. Internal consistency for this scale was good at $\alpha = .77$.

The correlation between attitudes to mental health and the use of the EPDS was also tested to see if more positive attitudes were related to greater use of recommended tools. Findings showed that there was no correlation between these two indicators ($p = .39$). However, there was a significant correlation between positive attitudes to mental health and self-efficacy in assessing and identifying perinatal mental health difficulties ($p = .04$). This would suggest that those who felt more confident in identifying and addressing mental health difficulties in women during the perinatal period were also likely to have the most positive attitudes toward mental illness and may have been more inclined to offer support to those identified with difficulties.

As with the correlation between use of the EPDS and self-efficacy above, it may be that simply asking if health visitors used the EPDS on a regular basis was not a sufficiently detailed question to identify the relationship between attitudes to mental health and the use of best practice guidelines. In light of the positive correlation between these attitudes and self-efficacy, it is possible that HVs who were more confident in addressing mental health difficulties used other methods to identify and respond to issues that were not solely concentrated around the use of a questionnaire such as the EPDS.

2.10.5 Qualitative Data

Qualitative data for this research question were drawn from interviews and focus groups with HVs and HV leads and open comments on HV questionnaires. Questions asked HVs about their current use of best practice guidelines and how they viewed the ability of the scorecard to help increase and monitor use.

HVs talked about the importance of perinatal mental health as a key factor in ensuring positive outcomes for children and families. They were aware of best practice guidelines, in particular the need for early detection and intervention and the use of validated screening tools. Despite this, some HVs reported a lack of current emphasis on perinatal mental health and viewed the introduction of the scorecard as a positive way of increasing the profile of this issue and of making HVs more attuned to possible risks and difficulties being experienced by mothers.

The scorecard was also viewed as a means of reviewing, reporting and reflecting on the work that HVs do in relation to perinatal mental health that was not previously possible and some HV leads reported seeing small changes even at this early stage of implementation.

'...what it will improve is, basically, the sensitivity of the health visitors, for them to be aware of what they are doing, as well as being able to get, you know, the service users involved, this is the service, this is what they want, you know, they want the health visitors to be present, they want them to listen to what they have to say, they want the health visitor to be more involved in the family rather than just ticking the boxes' (HV lead 1)

Yea, I do, I think it has done [made changes], the whole point of the project, I think the project itself has raised awareness, and I think therefore decisions have been made strategically based on that, and I think individuals in our own areas have looked at what they're doing and have put improvement opportunities in place, so yea, I think it will make a difference (HV lead 2)

'...this is a high impact area, this is an area that we should be putting focus on as a result of increases in health visitor numbers so you know, this will show you exactly what your health visiting teams are doing without doing any extra work. You will be able to demonstrate that you are meeting if not exceeding against the national guidelines.' (HV lead 5)

'I know that HVs are trying their best to be committed to...asking the maternal mood assessment at every contact and trying to input that...I don't think everybody had been doing it...so, I think there's been change so that people are now more aware of...the importance of how often it does need to be done' (HV lead 4)

The scorecard was also viewed by some HVs as a useful way of reporting to commissioners both the work that they do and the impact of this work in terms of perinatal mental health and of showing where the needs of mothers are not being met through a lack of other relevant services.

Because actually you're highlighting the need, if we're doing the assessments and highlighting that there is a need out there and that there's nowhere to send them, and that moral thing really, that you're highlighting something but then what do you do with them and then we're left, sort of holding and supporting those families (HV focus group)

This will inform commissioners of how much health visiting services is already doing based on evidence to identify and support mothers with mental health issues for better outcomes for them and their families. It's innovative and practical (HV comment)

The QI aspect of the scorecard, which focused on targeting areas where best practice was not being met in full, was also generally welcomed by HVs in that it allowed them to focus on the services they provided and the ways that they could make improvements to their services in the future.

I think it forces you to focus down on where you want to make improvements I think it certainly has for us, you know, we've got a clear idea of where we need to focus on in our work, which I think has been helpful, definitely (HV lead 3)

This will help the professionals to see if the services in place are effective or if there is need for service improvement. (HV comment)

It will help us to know how successful our listening visits are. If there needs to be a change in the postnatal care we offer (HV comment)

...it's saying that, they do this all routinely, you know, they are depending on their expert knowledge you know, 'I know what I'm doing, I know what is informed' and then, sometimes it's good to sit back, stand back and see what is the evidence that my intervention is really achieving anything, and are the outcomes really of benefit to the children are they of benefit to the family and what can I do to make things work better? (HV lead 5)

Overall, the scorecard was welcomed by HVs who saw it as a potentially useful tool to help evidence the various services that they routinely offer to women during the perinatal period. Current IT systems were seen as inadequate in being able to accurately record and show these aspects of health visiting services such as supporting wellbeing. In line with results from the random audit case search and HV questionnaires, the qualitative data suggested that HVs were largely following best practice guidance but were not currently able to record this in a standardised format. The scorecard

was seen as a positive step towards being able to measure the extent to which they were meeting national guidelines and to identify areas that were in need of service improvement.

...the whole point of the project, I think the project itself has raised awareness, and I think therefore decisions have been made strategically based on that, and I think individuals in our own areas have looked at what they're doing and have put improvement opportunities in place, so yea, I think it will make a difference (HV lead 3)

...it truly is an eye opener for me to see what we have done and so much gaps, in the sense of we are not, not being able to capture those kind of data to support what we are doing. So, to that extent I'd say that the scorecard is going to be very useful for us to use in our day to day work. (HV lead 1)

2.10.6 Identifying areas in need of change

HVs saw the potential of the scorecard to highlight areas that may need improvement in services in a way that is not currently available to them. As they will be able to view data on the scorecard as it changes month to month and quickly identify gaps in service provision, it is thought that the scorecard will be able to assist with pinpointing areas for QI and thereby lead to better service provision overall.

I think it's helped us to focus on what projects or areas that we can improve which has been helpful. And obviously learning about processes that can make change, I guess those are skills that we hadn't necessarily really honed in on I guess before...or had the opportunity to do before, so we've been provided with that opportunity (HV lead 3)

HVs also spoke about other potential benefits of introducing the scorecard in their area that will eventually have an impact on their ability to introduce QI projects and sustain them, and they talked about other skills that had been learnt over the course of the project that they felt would be of benefit more generally in providing quality perinatal mental health services.

So that, [setting up QI teams] of course a good outcome because of what we have started and the kind of skills that, the champions have picked up from the value scorecard project,...kind of getting people on board for them all to see, why do we have to change, why do we have to, you know, bring in changes, to be able to improve, to have a second look at what we are doing currently and see how we can bring in some changes to improve what we are doing (HV lead 1)

2.10.7 QI projects

At each site, a number of QI projects were formed and many were in progress. In many cases, the initial focus of QI at sites was to find ways to ensure that data were being recorded in a consistent manner and in a way that allowed for easy extraction of these data for the scorecard. While the lack of data across many points of the scorecard was disheartening for HV leads initially, and was seen as

an barrier to reviewing current practice, it helped to motivate them to look more closely at the work that they do and the current inability of systems to accurately represent activity. Table 4 outlines the area of focus for the various QI projects that were undertaken, how they linked with data points in the scorecard, how they reflected national guidelines and recommendations and progress made on them to date.

Table 4: Examples of some of the QI projects introduced since the introduction of the scorecard, and how they relate to national guidelines

QI project aim	Link to scorecard data	National guidance	Progress to date
Increased recording of maternal mood assessments completed at postnatal visits	Records the proportion of women who receive mood assessments at each visit	HVs are required to assess emotional wellbeing in mothers at each contact	Information on project has been disseminated to health visiting teams Increased recording of mood assessments has been observed
All mothers will have mood assessed with EPDS vs. Whooley questions at every visit	Records the proportion of women who receive mood assessments at each contact	HVs are required to assess emotional wellbeing in mothers at each contact	Training in using the EPDS has been completed Marked increase in the proportion of assessments at antenatal contacts
HVs will routinely ask about past medical history at new birth visits	Records proportion of women who are asked about past medical history	Women who have previous experience of poor mental health are at greater risk for perinatal depression, therefore medical history should be assessed to determine the presence of this risk	HVs have been informed of the project, training has begun Small increases have been noted Specific code needs to be created on IT system so it can be recorded accurately
Women who receive listening visits will have a repeat EPDS assessment to measure change	Records the proportion of women who have received listening visits, whether there has been a reduction in EPDS score post intervention or not and actions taken subsequently	HVs are required to offer early interventions to women who report perinatal depression. These interventions need to be seen to be effective	Not started yet

2.10.8 QI project case studies

This section outlines the QI projects that have been undertaken to date at three of the four sites (data were not available for the fourth site). Each case study introduces a problem identified through the use of the scorecard, how this problem was approached and the early findings of the QI projects in this area.

2.10.8.1 Site 2: Case study

The QI project at Site 2 focused on reducing the variation in reporting on the use of maternal mood assessments at contacts. Before the project, HVs tended to record assessments through free text on case notes rather than through using the electronic coding system.

According to the scorecard data, fewer than 20% of mothers were given a maternal mood assessment at postnatal contacts and the random audit case exercise extracted no new birth contact data. The HV lead at Site 2 however, believed that mood assessments were being completed but were not being recorded in a way that made this information suitable for data extraction for the scorecard: *'I think people were recording it, but just on free text, so it was very difficult to see what people were inputting'* (HV lead).

Based on this belief, and evidence from the random audit check with antenatal contacts - which showed a difference of more than half between what was recorded in free text and what was available for scorecard extraction - a QI project to increase the electronic recording of mood assessment was introduced. The PDSA cycle for this QI project is outlined in Figure 18 below.

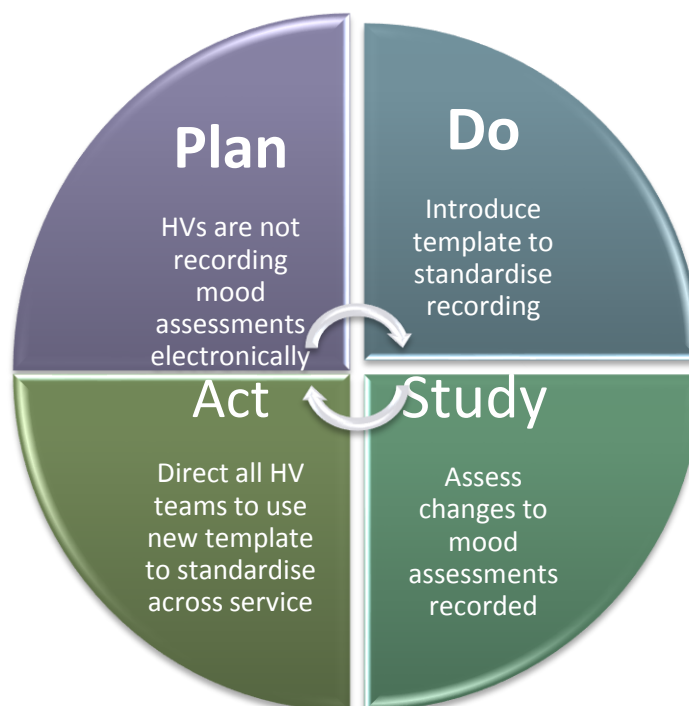


Figure 18: PDSA cycle for QI project at Site 2

The QI project involved producing a common template for all HVs to use electronically to record when a mood assessment had been completed. HVs across the site were directed to use this template for every contact so that the real level of best practice adherence in this area could be clearly shown. Instructions were given to individual teams over two months and the changes in the use of maternal mood assessments at postnatal visits were recorded on the scorecard.

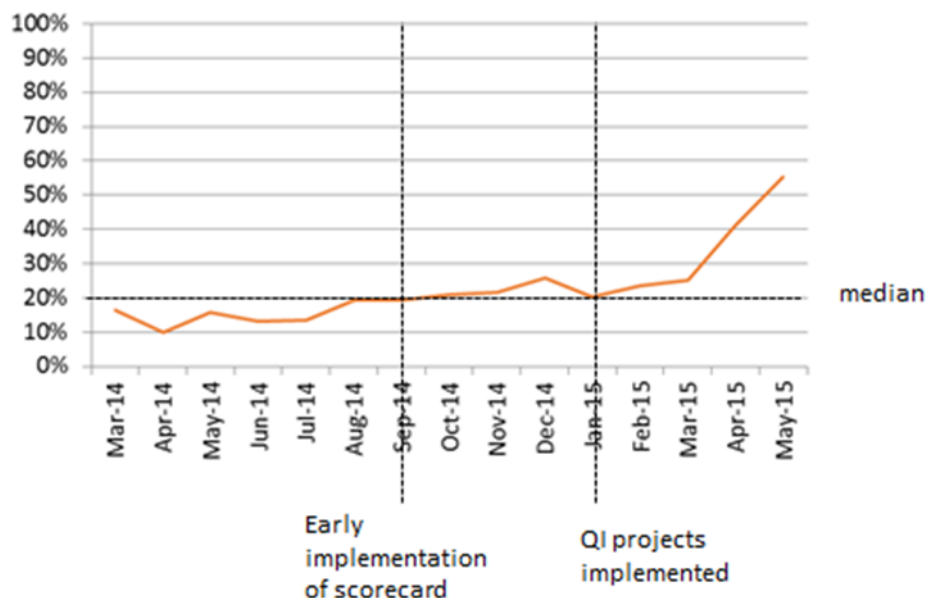


Figure 19: Run chart showing the effect of introducing a common template to record maternal mood assessments antenatally, on the proportion of women with a maternal mood assessment recorded

The percentage of mothers with a maternal mood assessment recorded antenatally increased from fewer than 20% in March 2014 to over 50% in May 2015. Using rules to identify statistically significant non-random patterns in the data (15) we can infer that there is a significant non-random pattern in the data as there is a shift of seven consecutive points below the median line (March-September 2014) and two runs which is too few for the number of data points (Figure 19). These data suggest that the scorecard may be associated with an increased ability for Site 2 to demonstrate adherence to best practice.

2.10.8.2 Site 3: Case study

The QI project at Site 3 focused on one item of the scorecard, which recorded whether women were asked about their past medical history at the new birth visit. This item reflects national best practice guidelines that state women should be assessed for any previous history of mental health difficulties at the first contact with HVs so that an accurate risk assessment can be made. In Site 3, this option was available for recording on current IT systems but appeared not to be routinely completed. Comparison between the random audit exercise and what was available on the scorecard appeared to show relatively low levels of this question being asked across the service Figure 20.

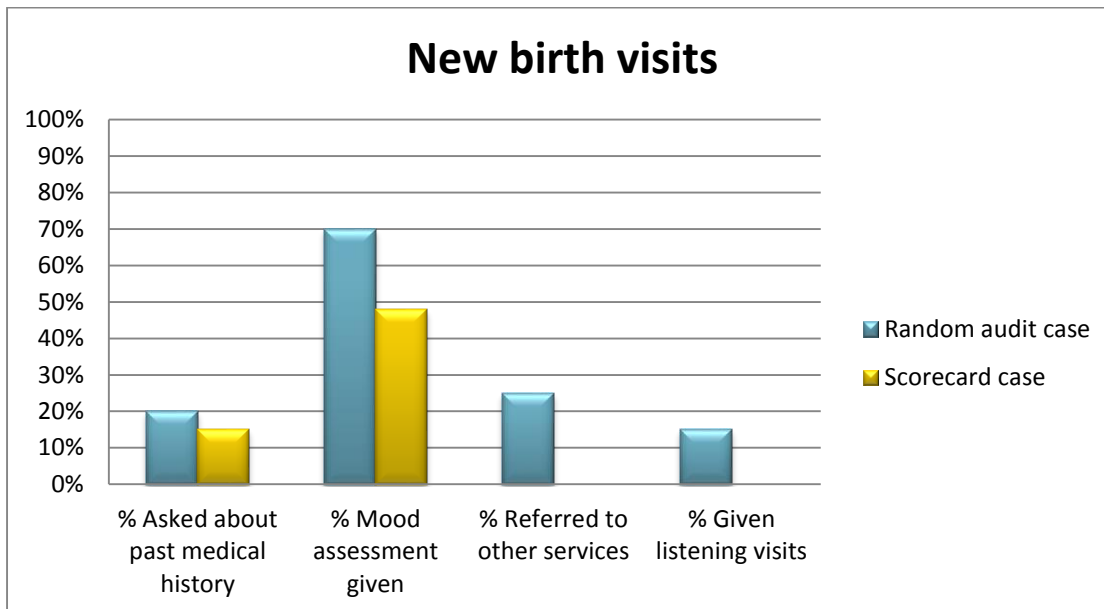


Figure 20: Bar chart showing the difference between data extracted from the scorecard and the results of a random audit of case files (N = 20)

Based on meetings with site managers, it was decided that HVs here required training and motivation to understand the importance of collecting these data and to help ensure that all HVs saw this as part of routine assessment. The PDSA cycle for this QI project is given in Figure 21.



Figure 21: PDSA cycle for QI project at Site 3

The electronic data system at Site 3 was under review and due to be replaced following this work. This meant that changes were not made to the current system in terms of adding new codes or templates as the focus was on ensuring that the new system would be better suited to record data needed for the scorecard. Instead, changes to the instance of asking this question were recorded for the scorecard manually by the local HV lead from January to May 2015.

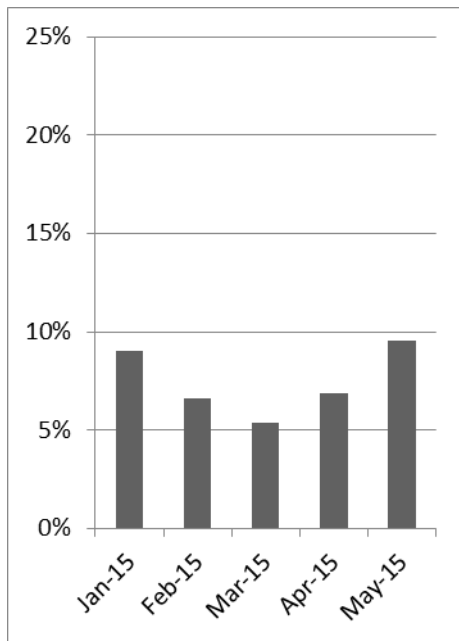


Figure 22: Bar chart showing the effect of introducing training on the proportion of mothers who had been asked about past medical history at antenatal visits. (Data were available from January 2015 onwards)

Figure 22 shows that there was little change in the recording of the proportion of mothers who had been asked about past medical history at antenatal visits. Nonetheless, it was expected that once training was rolled out to all staff, and this became embedded in routine practice, it would continue to increase. A target of 50% of mothers being asked this question by September 2015 was set with a view to steadily increase this percentage as each new target was met.

2.10.8.3 Site 4: Case study

At Site 4, perinatal mental health training was conducted alongside (although not as part of) the scorecard. As part of this, all HVs in the area were given training in administering the EPDS according to the survey manual. Post-training, HV leads introduced a QI project to ensure that all HVs were using the EPDS as the main assessment tool in place of the two Whooley screening questions.

Prior to training, the scorecard showed that mood assessments were being recorded electronically less than 50% of the time for antenatal contacts and around 60% of the time for postnatal contacts. The EPDS was chosen as a more rigorous means of assessing the presence of perinatal depression than the Whooley questions and, as perinatal mental health training was conducted during the project, it was deemed a suitable QI project as HV leads would also be able to direct HVs to record mood assessments consistently on their IT case files. Figure 23 shows the PDSA cycle for this project.



Figure 23: PDSA cycle for QI project at Site 4

Changes in the recording of the use of maternal mood assessments were monitored after training. The run chart in Figure 24 shows that a change was seen in the recording of maternal mood assessments for antenatal contacts after the introduction of this QI project.

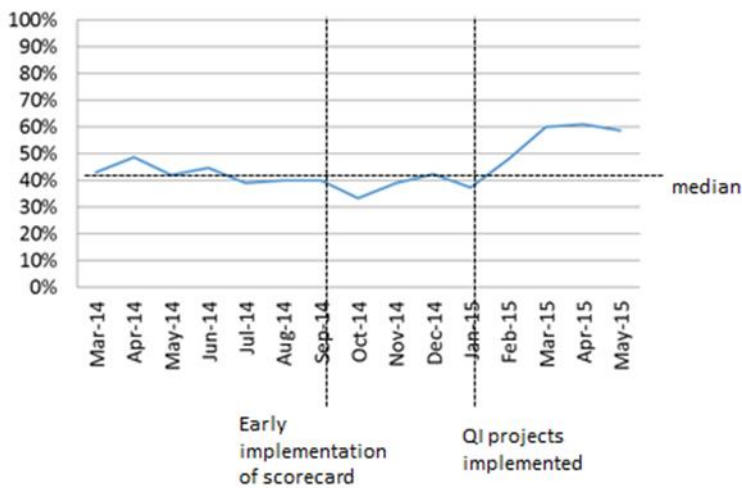


Figure 24: Run chart showing the effect of training in use of the EPDS on the proportion of mothers with recorded maternal mood assessments for antenatal contacts

The percentage of mothers with a maternal mood assessment recorded antenatally increased from 43% in March 2014 to 59% in May 2015. Using rules to identify statistically significant non-random patterns in the data (15) we can infer that there is a significant non-random pattern in the data as there is a shift of six consecutive points below the median line (July 2014 to January 2015) and three runs which is too few for the number of data points. These data suggest that the scorecard may be associated with an increased ability for Site 4 to demonstrate adherence to best practice.

2.10.9 Summary and synthesis of findings

The purpose of this research question was to explore whether the scorecard has the potential to improve adherence to best practice within health visiting and to assess what areas of change can be identified through use of the scorecard. Data were drawn from the scorecard itself, a random case audit, HV questionnaires and qualitative responses from HVs and HV leads collected through interviews and focus groups.

In the theory of change model, having data points present on the scorecard makes the data visible so that HVs can reflect on current practice and assess the extent to which they are adhering to evidence-based practice and national guidelines. Once these data are visible, HVs can clearly see where there are departures from best practice and implement QI actions to rectify this.

In all sites, the initial difficulty encountered in making the data visible was an inability to extract the necessary data to populate the scorecard. This was reported to be mainly due to a lack of standardised means of recording actions within current systems and a tendency for HVs to use free text rather than electronic coding to record details of their contacts with women. A random audit of 10-20 case files from each site was conducted to test this argument and found large discrepancies between the randomly chosen files and the data available on the scorecard, supporting this supposition. Additionally, 83% of HVs who completed the questionnaire stated that they use validated screening tools to assess maternal mental health at every visit with at least half of their clients and this was not reflected in the available scorecard data.

Qualitative data revealed that HVs in general were positive towards the scorecard in terms of its ability to record adherence to the recommended use of tools and screening questions. HVs recognised the importance of early detection and intervention for perinatal mental health difficulties and welcomed the chance to show what they routinely do in this area through data collection on the scorecard.

Early QI projects at sites focused on standardising reporting of routine service delivery such as completing maternal mood assessments at each contact. The case studies presented in this chapter showed that early indications from QI projects suggest that improvements were being seen at individual sites and HV leads were keen to ensure that they continued to show improvement after the end of the project. It was not possible to present a QI case study for one site at this time as there were no data available to analyse.

At Site 2, where a common template was introduced to increase the reporting of maternal mood assessments, there was a change in reporting from below 20% before use of the scorecard to 55% in the months following the introduction of the scorecard. Once all health visiting teams are routinely using this template to record the frequency of offering maternal mood assessments, it will be possible to determine actual levels of service provision distinct from data entry issues.

At Site 3, the QI project focused on ensuring that all HVs asked about and recorded any past experience of mental health problems at new birth visits as this is a known risk factor for postnatal depression and other mental health difficulties. While the IT system was not able to record any changes to include on the scorecard, the HV lead was able to manually enter these data for the

scorecard, which can provide a valuable baseline against which future QI projects and changes can be assessed.

At Site 4, all HVs were given training in perinatal mental health and in using the EPDS appropriately. Since completion of this training, an increase in the recording of mood assessments completed at antenatal contacts was observed, from 43% in March 2014 to 59% in May 2015. As with the case study from Site 2, these data suggest that the scorecard may be associated with an increased ability to demonstrate adherence to best practice.

2.10.10 Research Question 2: How can the scorecard be used to improve patient experience?

The focus of this research question was to determine whether use of the scorecard has the potential to facilitate improvements in the quality and experience of services for women during the perinatal period (Figure 25). Perceptions of the quality of services currently offered and service users' experiences were collected primarily through the use of a patient reported experience measure (PREM), supplemented with focus groups with a smaller number of service users at each site. HV's perceptions of what makes a quality health visiting service, and the corresponding challenges to providing the best service, were gathered through staff focus groups and open-ended questions in HV questionnaires.

Improving patient experience has become a priority for healthcare providers in recent decades as evidence of the effects of positive patient experience is building. In the US, for example, a key aim for improvement of healthcare is to ensure that it is respectful of the preferences, needs and values of individual patients. A key aspect of health visiting services, in identifying and addressing perinatal mental health, is building a trusting and supporting relationship between HVs and mothers. It is important therefore, to understand and measure the quality of that relationship to better assess HV's ability to detect difficulties at an early stage and to offer early intervention support when it is needed.

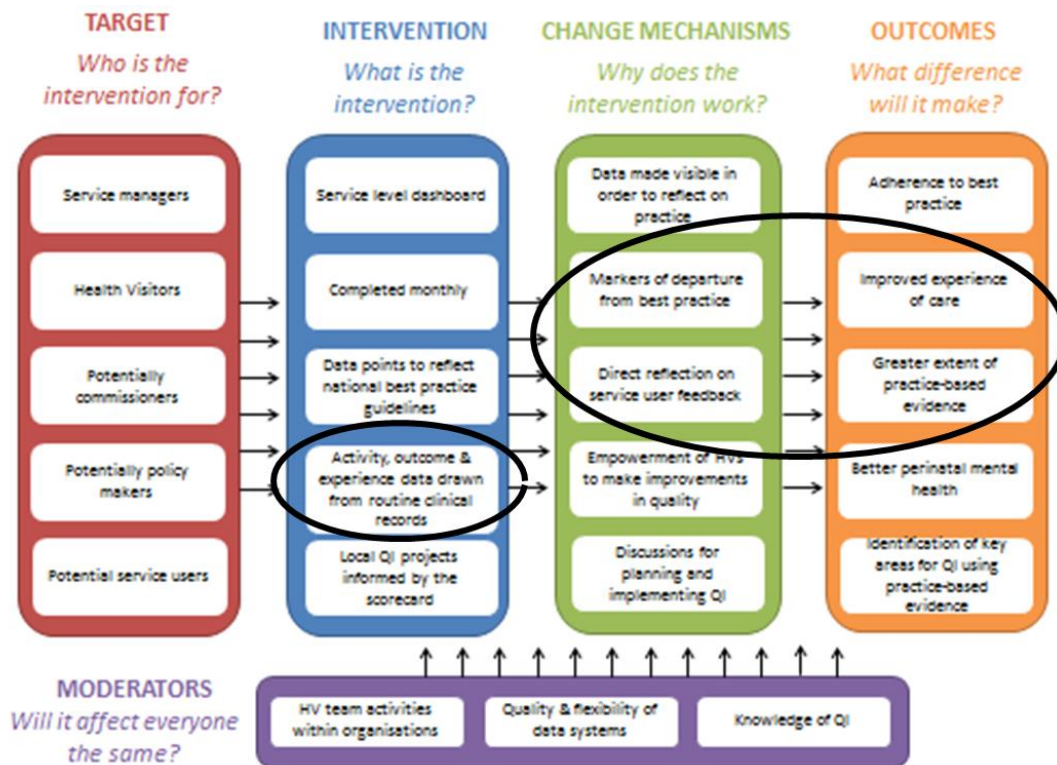


Figure 25: Elements of theory of change model relevant to research question 2

2.10.11 What does a positive experience of care look like?

A recent report published by the National Quality Board (16) outlines what service users of various healthcare providers view as being important to their quality of experience with services. Good experiences of care, treatment and support are increasingly being seen as an essential element of high quality health and social care provision in conjunction with safety and clinical effectiveness. The NQB outlines three domains of experience that are thought to be most relevant to providing high quality and positively experienced health care across different social and healthcare areas and types of service provision:

1. *Relational*: building a supportive and respectful relationship between service users and providers with good levels of communication and listening.
2. *Affective*: service users should feel that they are being treated with courtesy and respect and that they are being treated equitably.
3. *Functional*: service providers should offer practical and timely information and support including information about other services that may be relevant.

These domains are reflected in findings from an extensive review of the literature conducted in 2013 by King's College (17) that reviewed research on patients' experiences with health visiting. This review reported that service users value HV's knowledge, support and reassurance generally and in particular with issues such as postnatal depression. This is underpinned by the nurturing relationship between HVs and service users, although the research shows that there is variation in the quality of experiences of health visiting across the UK.

Qualitative evidence from this literature review suggested that service users found that positive experiences of health visiting included being listened to, feeling supported, and continuity and

consistency of contact with a named HV. Negative experiences included feeling judged by HVs, being given information not tailored to their family’s individual needs and experiencing disruption in their care.

Drawing on this existing rationale, the scorecard incorporated three key elements of experience of care: feeling supported and understood by a HV, feeling knowledgeable and confident about information and being asked how the whole family is adjusting to the baby. By drawing on service user responses in this way, the scorecard can provide a direct feedback mechanism and gives services a clear view of aspects of experience that could be improved. For the scorecard project, focus groups were conducted with service users to assist with the development of the scorecard. Data revealed similar issues highlighted as important by service users in these groups. These views were subsequently used to inform the patient experience section of the scorecard so that service users’ perspectives were included as a vital part of the quality of health visiting and so they could be used as a measure to reflect the importance of the relationship between HVs and service users (full details of the development of the PREM is available in Appendix E).

Qualitative and quantitative data are presented together in the sections that follow to illustrate the similarities between findings from both approaches and to give a comprehensive outline of both current reports on experience of services and areas that have been identified for potential QI work in the future.

2.10.12 Current experiences of health visiting services

Service users’ experiences of health visiting were primarily assessed through the PREM developed for this project (see Appendix E). This was supplemented with focus groups with service users at each of the sites and results were also informed by questionnaires and interviews with HVs. Findings from the PREM and qualitative data analysis were compared and triangulated and are presented here together. As views collected via both questionnaires and focus groups relate to very early implementation of the scorecard, these data have been reviewed to consider current variability in perceptions of the service received and potential for summary PREM data embedded in the scorecard to inform QI and show change over time.

Overall, service users reported largely positive experiences of health visiting services and this was evidenced through both qualitative and quantitative data analysis. Both service users and HVs identified similar areas as relevant for positive experience of care in health visiting; for service users this was based on their own and others’ past and current experiences with health visiting; for HVs, this was largely based on their understandings of what makes a good health visiting service and their own experiences in this role. Table 5 outlines the most common aspects of care that were reported as positive by service users and by HVs to illustrate the similarities between them.

Table 5: Quotes of positive aspects of experience of care as reported by service users and HVs

Service users	Health visitors
<i>“For me it’s just knowing that they haven’t just signed me off and now I’m left, I would feel that I’m just left on my own to get on with things, although I probably wouldn’t do</i>	<i>“We’re very good at writing in our contact details into the red book and making them aware that they can call us when they need us</i>

Service users	Health visitors
<i>anything different, I would feel very vulnerable and I think it would have a big impact”</i>	<i>and talk and we can arrange to see them if it’s necessary.”</i>
<i>“I feel that generally they really care, they care about you, they care about your baby, and I felt incredibly supported”</i>	<i>“...not making a woman feel bad about it but kind of supporting her and giving her options to reduce the impact”</i>
<i>“I got the impression that as well as doing their formal checks, they were also having a bit of their, you know, using their...they were being, sensible and responsible about their judgements about the environment and about how I was doing.”</i>	<i>“...you get a better assessment of mum’s maternal mood when you are in her home place because you get to see if housework’s been done, how is mum dressed, because how she presents herself in clinic and denies any mental health problems is completely different to how you may see how she’s coping at home when you may go into her house”</i>
<i>“She really reassured me and I felt she was doing the right mental health checks on me as well, which was good.”</i>	<i>“...and you can use it (EPDS) as a tool almost to talk around how they’re feeling and explore as well, can’t you? And then it gives them an understanding of the importance of why you’re there to do that contact”</i>
<i>“Outside of becoming a mum, our family has suffered a bereavement and my daughter was very ill when only 3 months old, without H and subsequently Ms support I would have really struggled emotionally and with the new challenges of becoming a mum”</i>	<i>“Being able to support the family, not just the Mum, because the family are important also.”</i>
<i>“I highly recommend to speak to the HV and get the appropriate health advice and support. I think there should be home visits available for the mothers who are shameful to admit that they need help and therefore can't come to the clinic and speak in public”</i>	<i>“I think one of the most important things is that we go into the houses...I think people are more likely to feel comfortable disclosing if they’re in their own home because they feel a bit safer”</i>
<i>“When I have had a query my HV can't answer I am confident she will find out for me and has asked colleagues on my behalf...I am delighted with the care I received.”</i>	<i>“When you’re a health visitor you get quite good at picking up where all the services are, so we’re quite good at, I think, signposting and referring into the correct services to support parents, and you do pick up kind of new services quite quickly”</i>
<i>“P has been very supportive and caring. She always listens carefully and offers advice. I feel that she respects me and genuinely cares about my wellbeing”</i>	<i>“There’s something very valuable about the journey that you go on along with the family, and I think besides the support there’s that empowerment that comes in the work that you do, to make that change”</i>

For both HVs and service users, the most commonly reported factors of positive experiences of services related to the nature of the relationship between mother and HV. Mothers generally wanted to feel supported and listened to by HVs, to be given non-judgemental advice and to know that their HV is available to them if they have questions or anxieties. HVs comments reflected these sentiments and they reported seeing their role as supporting mothers and their families on the 'journey' through the early childhood years and of being in place to intervene when it is necessary.

These factors are reflected in the questions included in the PREM, the results of which also showed largely positive reports of experiences of health visiting services. The PREM was a 13 item questionnaire (Table 6) that asked service users about their perceptions of their relationship with HVs and the skills and knowledge that HVs have (see Appendix E for full details of the development of this questionnaire). Items were scored on a 5-point Likert type scale ranging from 'strongly agree' to 'strongly disagree', with higher scores indicating higher levels of satisfaction.

Questionnaires were distributed at each site over one week each month between January and May 2015. Table 7 shows the number of questionnaires returned by each site per month.

Table 6: Individual PREM items

Q1. My health visitor helps me to talk about my feelings and emotions about becoming a mother
Q2. My health visitor gives me information about local services and support
Q3. After contact with my health visitor, I know where I can get help if I'm feeling low or upset
Q4. I feel that my health visitor really listens to me and gives me the time I need
Q5. I feel that my health visitor treats me with respect
Q6. I feel comfortable talking to my health visitor about my feelings about my pregnancy/baby
Q7. My health visitor helps me to talk about how the whole family is adjusting to the new baby
Q8. My health visitor always takes my worries and questions seriously
Q9. I think my health visitor has the right knowledge and skills to be able to help me if I am feeling upset, low or worried
Q10. I feel that my health visitor understands how I am feeling and why
Q11. If I have a problem or if I am worried about how I am feeling I know my health visitor would be able to help me
Q12. I feel that my health visitor works together with me in decisions about my health and wellbeing
Q13. I feel that my health visitor helps me to get the support that I need

Table 7: Numbers of PREMs returned by month and by site January – May 2015

	January	February	March	April	May	Total
Site 1	45	15	55	44	48	207
Site 2	21	39	33	0	7	100
Site 3	9	0	20	17	16	62
Site 4	119	73	63	35	0	290
Total	194	127	171	96	71	659

A total of 659 questionnaires were returned from all sites. As is clear from Table 7, there was disparity between sites in the number of questionnaires returned each month. Higher response rates from Site 4 in particular may have been influenced by having specialist perinatal mental HVs in this area whose role involves collecting data and improving patient experience (taken from meeting notes). This made it inappropriate to compare results between sites so the analysis focused instead on looking at overall scores on satisfaction with experiences across sites and monthly changes within sites.

Across all sites, mean scores for each of the themes remained close to or above 3.5 suggesting generally positive levels of experience across service users surveyed. An exploratory factor analysis of all 13 items showed that the full questionnaire loaded onto a single factor with each item giving a loading above .65 (a copy of the output from this factor analysis is available in Appendix E).

Although the items loaded well onto a single factor, due to conceptual reasons within the scorecard, it was subsequently divided into three sub-themes identified through the project focus groups, which developed '1 statements' of what service users stated they wanted from their health visiting services (see Appendices E and F). Data were analysed by individual item and also under the three domains that are contained in the scorecard to represent service user experience:

1. Women feel supported and understood by their health visitor (Qs 1, 4, 5, 6, 8, 10, 12)
2. Women feel confident and more knowledgeable about things they need to know (Qs 2, 3, 9, 11, 13)
3. Women were asked about how the whole family was adjusting to the baby (Q 7)

In terms of the three scorecard themes, there was little variation month to month in the average levels of satisfaction as illustrated by the run charts in Figure 26 to Figure 28.

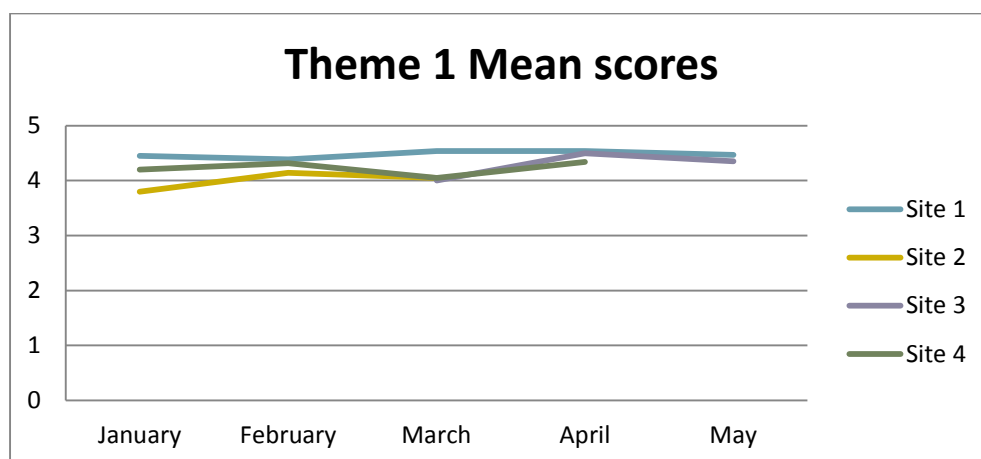


Figure 26: Mean scores for theme 1 (feeling supported and understood) by site and month

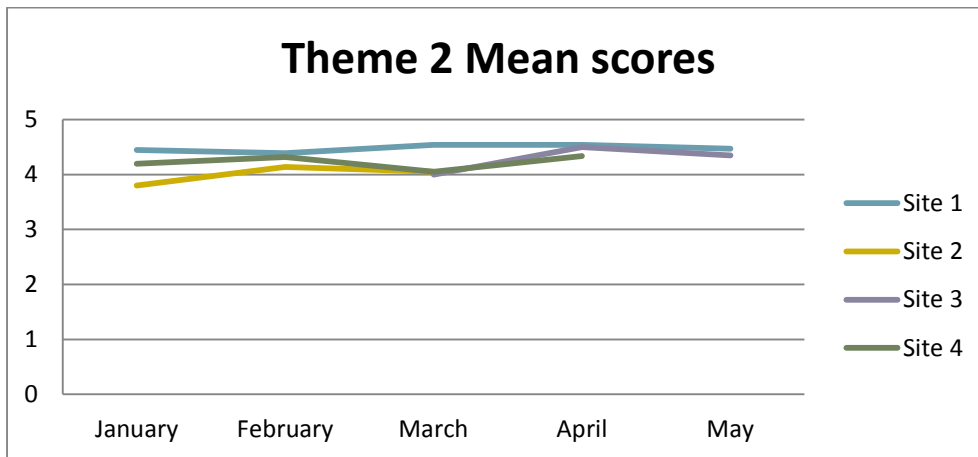


Figure 27: Mean scores for them 2 (confidence and knowledge) by site and month

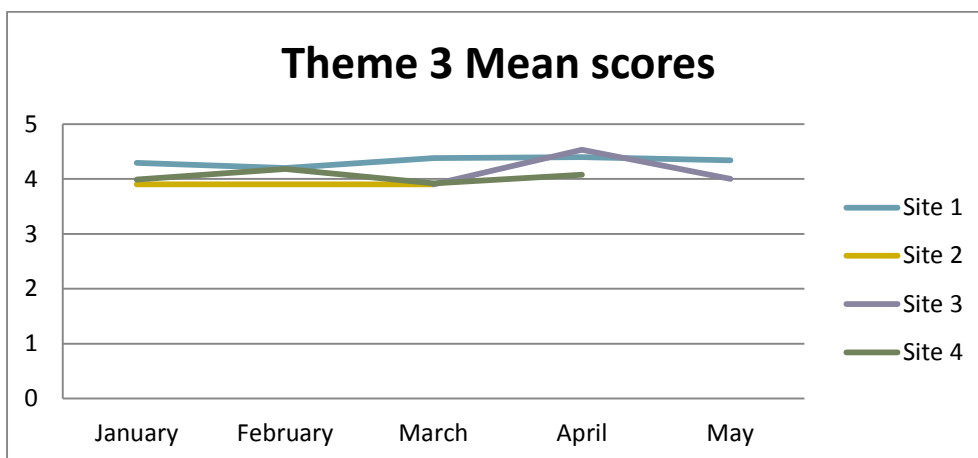


Figure 28: Mean scores for theme 3 (whole family) by site and month

Overall, there was little in this data analysis to indicate any change over time, however it was early in terms of scorecard implementation and no QI projects had been put in place to focus on patient experience so it was not expected that there would be any significant change at this point of the evaluation. As scores based on these three themes appear to be generally high, and there was little variation over the five months that the PREMs were collected, the scores for individual items across sites were also analysed to explore where there may be other areas for potential QI in terms of service user experience and these are discussed in relation to potential areas for improvement in the section below.

2.10.13 Potential for improvement in experiences of care

The data collected through the PREMs to-date suggested that there were few areas that could be identified as being in need of QI in relation to patient experience. However, patient experience questionnaires generally tend to find relatively high levels of satisfaction among those who complete them and it is not clear at this stage how reflective these data are of actual experience across health visiting services.

As stated above, the majority of service users reported a positive perception of their experiences of health visiting. However, there were also a number of negative experiences reported by service users and these were also reflected in comments made by HVs who talked about similar aspects of the health visiting experience. These are illustrated in the table below for comparison.

Table 8: Quotes of negative aspects of experience as reported by service users and HVs

Service users	Health visitors
<i>"I didn't find HV helpful and it felt at times as though she didn't explain why she was visiting. I felt I was given a survey to measure my postnatal mood without any real discussion of the answers. I did not feel I could discuss things with her."</i>	<i>"...you might want to help, but it's not very ethical is it, you can't get someone to open up if then you can't do anything with it...it's just a fear"</i>
<i>"I often get conflicting advice as I always see a different HV. Sometimes this has led me to worry unnecessarily."</i>	<i>"I don't think health visitors feel confident, you know, I don't think it's fair to send them out without adequate training, so although we're criticising the service, I don't feel that they feel confident"</i>
<i>"I have found that sometimes the visits feel like a questionnaire rather than a chat and I have struggled to get practical solutions to problems sometimes, just get told what the government recommends."</i>	<i>"I feel sometimes, there are times when you miss a little bit of the moment there where they might want to say something and because you're writing, even if it's a line...you've missed it"</i>
<i>"When my child was 6 months I had to stop breastfeeding because he was literally awake feeding all night. FAB (breastfeeding support) team and my HV were no help. I was really disappointed with the lack of support"</i>	
<i>"I think I got given quite a lot of leaflets, I did, I remember she went away and we were left with a stack of leaflets [yea], and in your sort of addled state it's quite overwhelming, and I think I would have benefited more if she'd actually maybe just chatted to me"</i>	<i>"I don't like the corporate caseloads, we have huge caseloads, and we don't often know what's going on with all of...so you don't get the chance to get a 'feel' of what's going on, and you don't get to build up the relationships with people and you haven't got the continuity"</i>
<i>"She was good, she was knowledgeable and everything but it was just a very, matter of fact, here to do a job, just get it done, move onto the next one kind of thing"</i>	<i>"...here it does sometimes feel a bit rushed but it's just something that you have to do and you have to get in and out and do it, because you don't have the time to hang around and do more"</i>

In general, service users spoke of negative experiences in terms of their interactions with individual HVs and the extent to which they felt they were treated with interest and respect. For many service users, while they appreciated that HVs asked about relevant issues, the sense that they were merely 'ticking boxes' was framed negatively and service users expressed a desire to have less formal, more friendly interactions with their HVs.

Lack of consistency, in terms of seeing the same HV and also in the advice received was also cited by many as a negative aspect of their health visiting experience. For HVs, there was an

acknowledgement that they do not always have the opportunity to build a positive relationship with mothers and this was mainly cited as being due to large caseloads and little time. Many HVs also spoke negatively about the questionnaire-type approach to assessing women’s mental health and while they accept the importance of recording this information they feel, at times, that there is too much focus on documentation and not enough on talking to and understanding how a mother is feeling.

Many of the issues raised in the qualitative data collection with service users and HVs relating to areas that could be improved were also reflected in the PREM results, in particular when individual items on the questionnaire were isolated and analysed. The main focus of the questionnaire was on the relationship between HVs and service users, which was clearly an important aspect of the overall experience for both mothers and HVs. The PREMs within the scorecard could therefore be a useful means of tracking the overall levels of satisfaction with experiences and relationships from a service user perspective and provide areas for improvement where satisfaction is low. HVs were largely supportive of the inclusion of service experience questions as a means of measuring and reflecting on this aspect of care and, given the correspondence between service user and HV perspectives, would likely be responsive to QI aimed at increasing satisfaction.

PREM results for each site by individual questionnaire item are given below in order to help identify areas that could be targeted for QI in the future. As shown in the section above, there was little variation month to month in the PREM results for each of the scorecard themes.

This section looks at the differences reported from the first collection of PREMs to the last collection in May 2015 to see if there were any change in this time frame across sites for particular aspects of experience of care and if areas for future improvement can be identified for individual sites.

2.10.13.1 Site 1 data

Site 1 returned a total of 207 questionnaires over the course of the evaluation. This site returned the most consistent number of questionnaires month on month. Figure 29 compares the results of the questionnaires for January ($N = 45$) and May ($N = 48$) by response option (i.e. ‘strongly agree’ to ‘strongly disagree’).

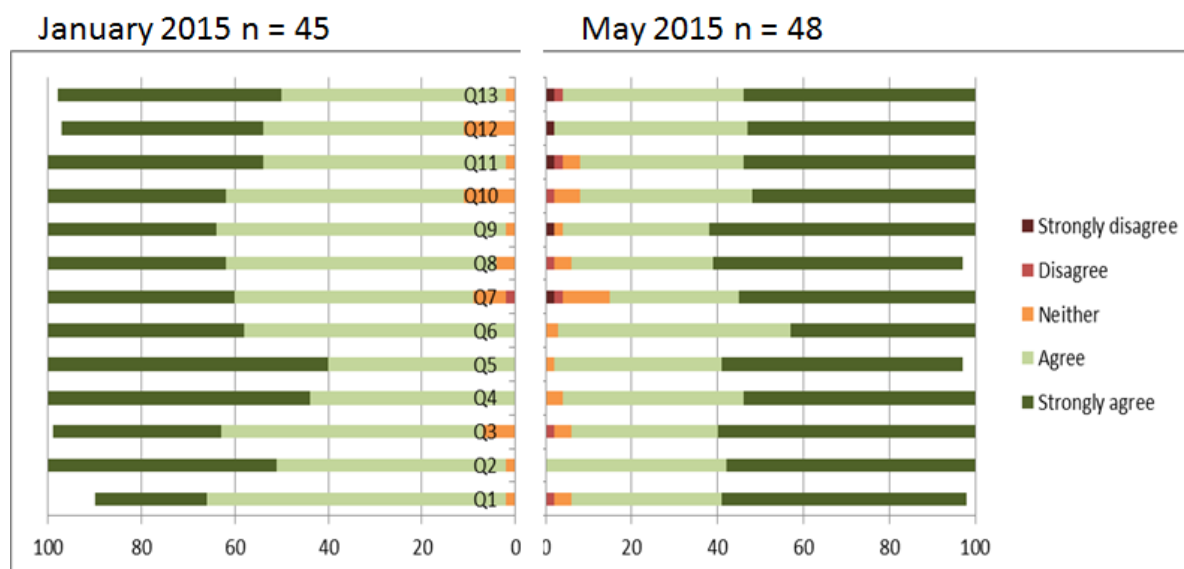


Figure 29: Comparison of responses (% in each category) per PREM item between January and May 2015 for Site 1

Some particular changes worth noting from Site 1 over time were the reductions in the proportion agreeing or strongly agreeing with question 7 ('asked about the whole family') and for question 11 (knowing that a HV can help with problems). QI work in these areas could focus on communication skills of HVs and of raising awareness of the importance of addressing issues known to be important to women.

As can be seen from the graph and table above, questions 4, 5 and 6 (all part of theme 1: 'supported and understood') were 100% positive in January but dropped slightly in May. It is unclear as to why this may have happened at this time but Site 1 had recently recruited a large number of newly qualified HVs, which may have possibly impacted on these scores to some extent and they may see a return when new staff become more experienced and confident.

It should be noted that Site 1 in particular had a diverse ethnic population and it is possible that responses were, to some extent, reflective of language and/or cultural barriers.

2.10.13.2 Site 2 data

Site 2 returned 100 questionnaires over the course of the evaluation. Some of the responses for this site were particularly low with only approximately 60% of participants strongly agreeing or agreeing to statements (Figure 30). It was noted during data collection however, that many parents stated that they were too rushed at the clinic to complete a questionnaire and many did not speak or read English. This may have had some impact on the responses given in the questionnaires returned and could be one factor in generally lower response rates from this site.

January 2015 n = 21

May 2015 n = 7

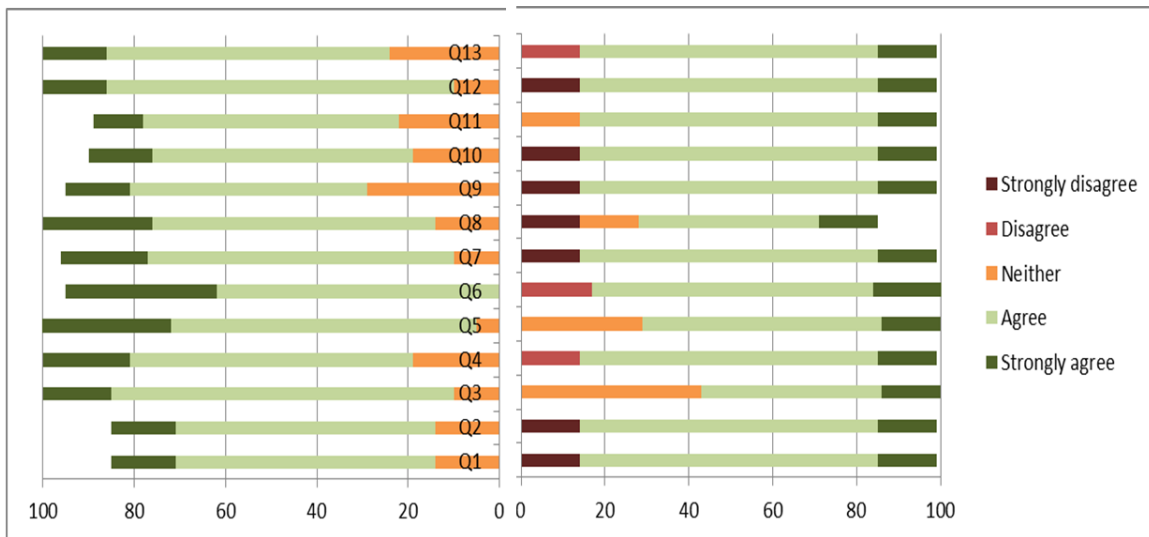


Figure 30: Comparison of responses (% in each response category) per PREM item for January and May for Site 2

Although Figure 30 may appear to show somewhat less positive responses compared to other sites, it is important to be mindful that a small number of responses are included, meaning that any variation in responses will appear more extreme. Some of the items that may be of interest in terms of potential QI projects for Site 2 include items 3, 5 and 9. Items 3 and 9 are part of the second scorecard theme of ‘feeling knowledgeable about things such as other local services’, which could be related to language barriers identified during data collection. A potential QI project to address these areas could involve assessing the impact of language barriers on this theme and trying to alleviate them through providing information in different languages that make services more accessible to diverse groups.

The response rate for May was very low with just seven questionnaires returned so it is likely that this has had some impact on the levels of satisfaction noted above and makes comparisons for change difficult to interpret. It would be necessary for Site 2 to better understand how language and cultural barriers were impacting on health visiting services provided in the first instance before using PREM results to identify QI projects to ensure they are targeting the correct areas in the right way.

2.10.13.3 Site 3 data

Site 3 returned a total of 62 questionnaires over the course of the evaluation. Responses at Site 3 appeared to improve overall from January to May but no specific QI projects were introduced to improve experience of service (Figure 31). Response rates for this site were also very low and comparisons over time and between this and other sites should be understood in this context.

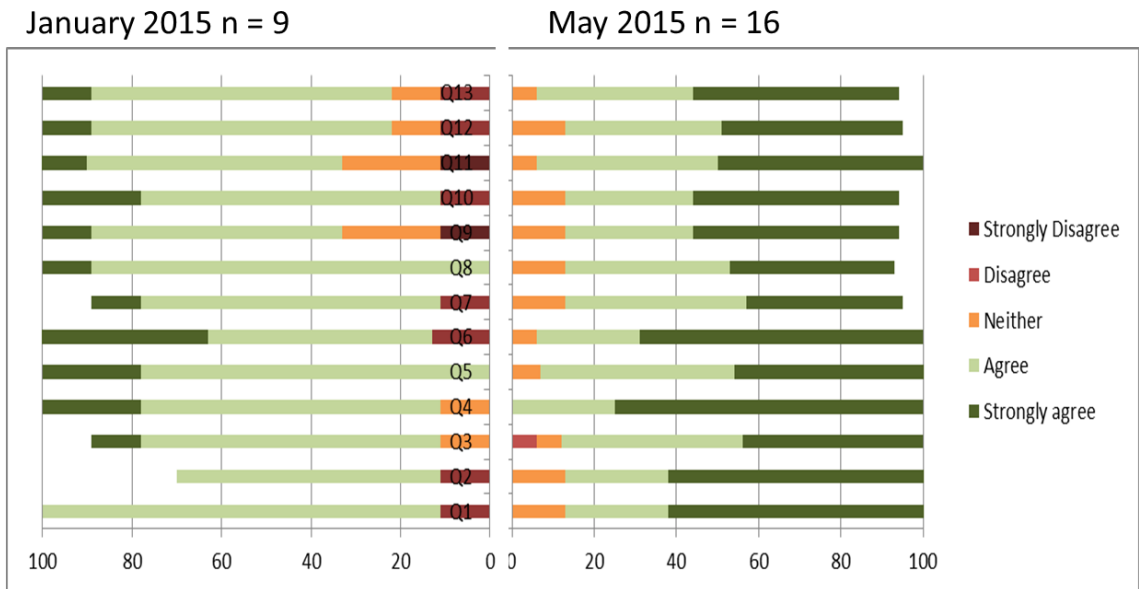


Figure 31: Comparison of responses (% in each response category) per PREM item for January and May for Site 3

There appeared to be an overall improvement in PREM responses comparing January and May at this site. However, as stated above the low response rates mean that it was difficult to draw any conclusions about patient experience based on these data.

Qualitative data with service users from Site 3 in particular revealed that service users were to some extent unsure of the role of HVs and what they should be receiving from services and this may have a bearing on questionnaire data. However, each of the items that declined during May relate to feeling respected and being taken seriously, which could highlight a potential area for QI that focuses on interactions between HVs and service users and how they communicate with each other.

2.10.13.4 Site 4 data

Site 4 returned a total of 290 questionnaires over the course of the evaluation. This was the highest responses across all four sites and meeting notes suggest this may be partly related to the local focus on perinatal mental health services more generally adding to the motivation of staff to distribute and collect these questionnaires. However, it should be noted that there was some difference between the numbers returned for January (118) and for April (35) and no questionnaires were distributed in May suggesting a possible decline in motivation among staff to collect these data over the course of the study.

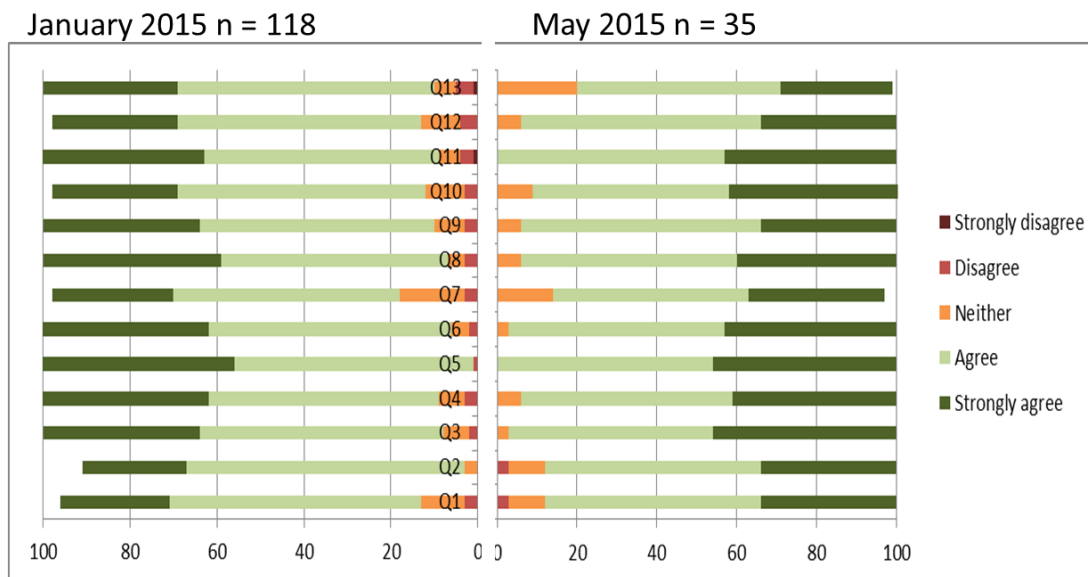


Figure 32: Comparison of responses (% in each response category) by item for January and April for Site 4

Overall, responses were generally positive at this site and almost all items showed some increase over time. Item 7 (theme 3, which asked about the whole family) appeared to be the lowest scoring item at both time points. Potential QI projects in this area could focus on ensuring that HVs take the time to enquire about family functioning and how other family members are adjusting to the new birth to help increase agreement with this item.

Item 13 ('I feel my health visitor helps me to get the support I need') showed some decline when comparing January and April responses, with 20% of service users indicating that they would neither agree nor disagree with this statement. This may indicate that service users felt that they did not receive this support all of the time but would need to be investigated further to determine whether there are particular areas that could be targeted for future QI attention.

From both the qualitative and quantitative data presented here it may be seen that embedding the PREM within the scorecard allows HVs to reflect on all aspects of the services they provide for women during the perinatal period in terms of mental health support. HVs will be able to identify any issues that may arise in relation to the interactions between service users and HVs and work towards resolving them. QI projects in this area can then be monitored through the PREM results, which should show increases in scores if QI projects are successful.

Evidence from the first five months of PREM collection showed little in the way of improvement or general change in service users' experiences although at some sites there were variable response rates, which should be kept in mind when interpreting the results of the questionnaire.

Nonetheless, providing positive patient experiences was reported as important to HVs and they were positive about having data on this aspect of the overall service and being able to monitor their performance in this area over time. None of the sites introduced any QI projects to address aspects of patient experience so it would be important to monitor changes in reported service user experience over time in the future.

2.10.14 Summary of findings

The purpose of this research question was to explore whether the scorecard could be used to help improve experiences of health visiting services. The key data source for this research question was the newly-developed PREM, which asked for service user's perspectives of their experiences with health visiting and was supplemented with focus groups with service users and HVs. The 13 item questionnaire contained themes reflected in the literature on what constitutes a quality experience of health and social care and was developed in collaboration with service users and HVs. For the purposes of the scorecard, the items were collapsed into three major themes; 'feeling supported and understood', 'feeling confident and knowledgeable' and 'being asked how the whole family is adjusting to the baby'.

There was little change in PREM responses over time, which may be explained by a) none of the QI projects targeting patient experience, b) the short time-frame over which PREMs were collected, and/ or c) the generally high levels of satisfaction service users reported, similar to measures of patient experience in other healthcare settings. The ceiling effect in the PREM responses found in the present evaluation should be considered if the PREM continues to be collected by HV services; high baseline levels of satisfaction may make it more challenging to assess change overtime. This could be mitigated by examining particular items, which revealed more variation than the subscales in the present evaluation, or by examining qualitative feedback (e.g., using free-text survey responses) to identify potential QI projects that target experience.

Qualitative data analysis showed a more nuanced picture than the PREM data and particularly highlighted potential areas for future QI projects. Service users and HVs were relatively closely aligned in what they felt made a positive or a negative experience of services. In general, both groups referred to the relational aspects of health visiting as positive, while the more formal, form filling, or 'tick box' style of assessment was perceived to be more negative. These qualitative data appeared to reflect the items included in the PREM and gave support to the questionnaire as a useful way of measuring service user perspectives of health visiting in a way that reflects what is important to them.

Overall, results on the scorecard PREM themes were positive across each of the sites; the lowest mean score at each site was for the third theme (whole family), which could be a potential area of future consideration for QI for some sites. When individual items were analysed by site, different aspects of experience emerged as potential QI areas of focus for the future dependent on the site they were drawn from.

Variation in response rates across sites for each of the five months that the PREM was collected makes comparisons between sites or over time difficult and subject to some bias. In addition, responses to the PREM were generally positive as is the case for PREM and satisfaction surveys across healthcare services generally. High baseline levels of positive experience as reported in the PREM will make it somewhat more challenging to assess change over time as there will be less room for improvement in PREM scores. While most sites showed slight improvement in many areas over the course of the pilot project, this would need to be monitored in the future to assess the impact of the scorecard on patient experience and to identify areas for potential QI at each health visiting site. It is as yet unclear whether the PREM reflects potential variability in service user

experience well enough to capture change. This should be explored further if or when improvement projects focus specifically on improving service user experiences.

2.10.15 Research question 3: What are the facilitators and barriers to implementing the scorecard?

The purpose of this research question was to identify the particular facilitators and barriers experienced by sites in successfully implementing the scorecard and in using the scorecard to identify areas for QI (Figure 33). Data for this research question were drawn from interviews and focus groups with HV leads, the implementation team and HVs; field notes gathered during meetings and awareness raising sessions; and from QI case study notes. The evaluation study identified a number of factors that could be deemed to be facilitators or barriers to implementing the scorecard in the future. These factors occurred at different levels of service provision and related to various aspects of scorecard implementation and may require different types of input and/or support to address each one. Some of the factors are likely to be common features of introducing a new system or way of working within organisations generally, but others were specific to the implementation of the scorecard.

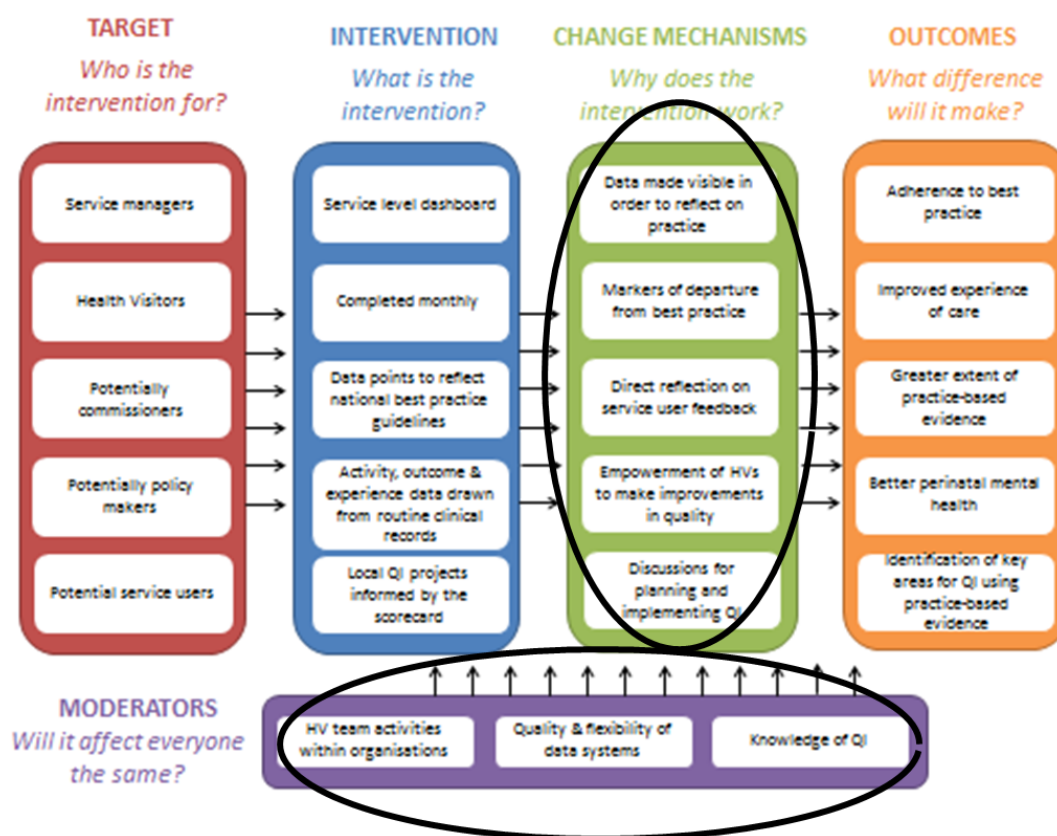


Figure 33: Elements of theory of change model relevant to research question 3

2.10.16 Facilitators

The evaluation identified three major facilitators to implementing the scorecard: that it fitted with the values of HVs, it coincided with the updating of IT systems and changes to commissioning, and that the approach taken helped HVs feel empowered. Each of these facilitators individually and collectively worked to support the implementation of the scorecard at the sites, and are likely to be factors in introducing the scorecard elsewhere in the future.

2.10.16.1 Fit with HV values and ideology

HVs were overall very positive about the focus and purpose of the scorecard as they saw it as fitting with their own remit as HVs and could appreciate the potential benefits a tool like the scorecard could have for improving outcomes for children and families. The scorecard was viewed as fitting well with how HVs saw their role in terms of early intervention and prevention and felt that perinatal mental health was an area they could become involved in improving to a greater extent than has been possible in the past.

I think with the new generation of health visitors as well, because for so long,...there was a lot of apathy so, people weren't wanting to drive change, they weren't wanting to improve anything, and now we've got an influx of new...potentially, a new generation of health visitors, and because we're trained very much as research based, whereas as opposed to 20, 30 years ago that wasn't the case. So it's already in the forefront of our minds, that that's, like, best practice is really important in order to drive change so, hopefully that will help filter it down as well. (HV focus group)

...you have to have an open mind and to be challenged in your thoughts and then seeing where you can improve your practice, you know, for our own benefit and for services and for the outcomes for parents (HV lead 1)

The purpose of the scorecard in improving quality and consistency of services was highlighted by HVs as being one of the most attractive features of the scorecard in that it allowed them to measure the work they did in a way that matched with their ideals of a high quality service.

...it's about trying to show the benefits of what the scorecard can do, you know, improve the quality of services and improve the outcomes for children, we can see it, and that's basically what we're here for isn't it? (HV lead 4)

I think there are people who are already enthusiastic and motivated about perinatal mental health and are wanting to change it and I think it's about being a good role model isn't it? So if you're doing good practice, hopefully that will be disseminated, and I know that our team is very supportive of me, they have been very supportive, so I'm sure that would take things on board and try and work with it. (HV focus group)

...so if we have this scorecard we can see where the gaps are and understand what we have done, have we done a listening visit, you know EPDS, and then you have carried out all the assessments, so what you have

found from the assessments, what intervention you have offered, so that after the intervention, have you done a post assessment as well so this is kind of, you know, not really a tool to confine our practice into, but it's kind of a checklist (HV lead 1)

If the ethos of the scorecard fits with what HVs themselves feel to be important facets of their role and they can see that the purpose of the scorecard is to ultimately improve outcomes for families and children, then it would follow that they would be more likely to engage with the scorecard and QI projects introduced through it. This would mean that HVs would be more motivated to form their own QI projects or to be involved as project coordinators, which in turn would impact on the success and sustainability of QI project outcomes.

Having protected time to take part in the project for collecting PREM data, working with IT services and systems, and conducting QI projects was reported as crucial to implementing the scorecard. When this was part of HV's roles - in terms of specialist HVs or those with a remit to work on QI and/ or perinatal health - the scorecard was reported as strongly fitting with job roles. Management support (also see barriers) was described as crucial to ensure protected time and resources for the scorecard were available.

2.10.16.2 Timing of scorecard introduction

The scorecard was produced within the context of changes across health visiting services, which were to come under local authority commissioning from 1st October 2015. Also, for some health visiting teams, IT systems were soon due to be updated and this combination of changes was seen as conducive to introducing a tool such as the scorecard.

I think the timing of the scorecard has actually been quite useful because it's linked in with us rolling out the perinatal mental health training from the institute of health visiting, so I suppose it's linked in really well with that. And I suppose providing us with the opportunity to update people about the project, it all coincided quite nicely...the health visitor implementation plan that was, it's given us now some actions as we go forward to sort of local authority commissioning (HV lead 2)

...now that a lot of organisations are in the process of changing their [IT] systems, this is the right time to be really doing all these changes together, not once you embed down and you've got to back again and change (implementation team)

Introducing the scorecard at this time was seen as likely to converge well with these other changes across services in that it would be easier to ensure data capture matched with that needed to populate the scorecard when IT systems were being constructed. Also, the changes in reporting of data and service provision necessary for local commissioners aligned with that already present in the scorecard, and HV leads, in particular, viewed being involved in the project as being of benefit in advance of this change.

2.10.16.3 Empowerment of HVs

Giving HVs a sense of 'ownership' over their own services and QI projects to address gaps in services was reported as one of the most positive aspects of the scorecard by HVs and leads. Many HVs felt that service improvements have in the past been introduced by government or management without consultation with them and felt that the scorecard allowed them more control over their own services and what they felt was important to women during the perinatal period.

...but also you want it to be owned by the health visitors on the ground, am...and the health visitors on the ground need to be able to have access to that real-time data to be able to...see how their care is contributing...positively (Implementation team)

...but it was also from a professional point of view, it's good to see what actually health visitors do, you know, because generally you just work and do what you have to do but you never stop to think, are we actually making an impact, you know, are we doing what we're supposed to be doing (HV lead 3)

This 'ownership' of the scorecard and QI projects is also seen as being an important feature of the future use of the scorecard and its success.

...because it's us as health visitors who are using it, so if you give ownership to the people who are using the template, you know it's yea...because for managers they can only promote it they can only pass this information on but it's health visitors on the ground who have to use it (HV lead 5)

Because the structure of the scorecard reflects the daily practice of HVs, it was important that they had some control over how the data collected were used. In focus groups and interviews, HVs were largely enthusiastic about being able to direct QI projects based on their own knowledge and experience and felt it was important for them to be able to do this. This may be a key factor in the successful implementation and sustainability of the scorecard and QI projects over the longer term as it will encourage HVs to reflect more on their own practice and to identify ways to improve what they do and will allow them to focus on improving aspects of services that they feel are important to their role in supporting women during the perinatal period and their families.

2.10.17 Barriers

The evaluation study identified four key issues that could be considered to be barriers to implementing the scorecard across the sites collectively. These barriers relate to site readiness for the scorecard or pre-implementation planning that could be put in place before introducing the scorecard to ensure successful introduction. The four barriers were: difficulty understanding the purpose and scope of the scorecard, lacking the necessary experience or knowledge in QI to plan projects, a lack of management support, and poor data quality.

2.10.17.1 Understanding and communicating the scorecard

HVs and leads reported particular difficulties with fully understanding what the scorecard was and how it was expected to be used, particularly in the early stages of the project. This was reported to have made it more challenging to communicate the importance of the scorecard to other staff and may have impacted on initial levels of interest and involvement from health visiting staff at some of the sites.

Understanding what it is, I think, because it's a kind of a concept, I think it's quite difficult for people to grasp actually what it is what it's purpose is and how it can be used, I think that's the main one (HV lead 4)

We have had that particular challenge in [site name] you know, getting other staff involved, but it takes quite a while for them to, up to know really, for them to appreciate what we are doing (HV lead 1)

...it took time even for some of the local health visitor leads, and some of the managers, you know, even within our advisory group, for people to generally understand what is the scorecard all about (Implementation team)

I think there was a lack of understanding even on my part as a lead, for a long time I didn't even know, I thought actually that is was a tool that we were going to use you know, so I think an understanding of what the scorecard was, that could have been better explained (HV lead 5)

There was also uncertainty around who would have overall control of the scorecard when it was fully implemented and this presented further challenges in promoting the scorecard to health visiting teams. As outlined in the section above, HVs felt it was important for them to have overall control over the scorecard and QI projects but they also reported a need to have the support of management in being able to engage other HVs and to allow for time to implement improvement changes.

2.10.17.2 Experience and knowledge of QI

Some HVs reported challenges in understanding and implementing QI projects because they felt they had little or no expertise in the area. While training was planned to be given during the project, this had to be limited due to circumstances outside the control of the project. However, this led to some HV leads feeling that they were unprepared to offer training to other HVs.

...there is a kind of frustration, I think they're kind of looking to me, as somebody to give them direction and I don't feel like I've got those skills either. So, I think I've been given the title of 'lead' and I've tried my best to do that, but it's difficult when you haven't got the training and the tools yourself, to do it (HV lead 4)

In some cases, however, even when training was offered this was not taken up by HVs.

...because people were not really aware of the project, there wasn't many uptake for the QI training, you know, it was free training available and not many people applied (HV lead 5)

While all HV leads reported that they had some level of familiarity with QI as an approach to service improvement, none of those involved in the project had received any training or had previous experience in using QI approaches. This was seen by HV leads as a barrier to their communicating with other HVs about the purpose or planned implementation of the scorecard. A subscription to the British Medical Journal (BMJ) Quality online platform that allows users to upload details of their QI projects that can be submitted for publication was given to a small number of HVs at each site through funding made available by the project. While each site had signed on to the site and had registered at least one QI project by the end of the evaluation, these reports were not completed partly because HV leads were still lacking confidence in reporting on QI projects and techniques (meeting notes and interviews).

2.10.17.3 Management support

HVs reported challenges in gaining support from management to be able to effectively implement the scorecard and encountered difficulties in gaining protected time to work on the project.

And support from managers really to allow us to go to these QI focus groups and have protected time for doing these things, like they want us to develop these quality initiatives but then, you know, we're not given the protected time to enable us to do it (HV focus group)

HVs also reflected on the need for management support in future uses of the scorecard and QI projects in order to ensure they can be effectively promoted and communicated to health visiting teams.

..really not a lot of people appreciate why this [perinatal mental health] is one of the key areas, that kind of information needs to be scaled down to all health visitors, the majority of health visitors are just, the day to day running of the service is their priority and management does not really communicate, you know, key high impact areas often enough, you might hear it every now and again and you might get a newsletter, but for busy health visitors, they actually might not even read that newsletter. So, I think to have a better collaboration and to have people communicating this too, right from the outset...(HV lead 5)

...it's [management support] quite crucial...otherwise you'll be swimming in your own ocean alone, with nobody, no voice to back up what you are trying to say. Our managers are, (manager) is quite, she's very, very innovative, she's quite happy with changes, and you know, with research so...(HV lead 1)

...if management really understood that, and then if we had a sort of an agreement of how they would work with me to pass that information off, so that people were getting regular updates, so not just, here's a

little bit of information, then a complete silence and oh yea, that scorecard's still here, you know, we needed that kind of system of communication going on. But, then if you didn't have management on board it was difficult to get that going. So, I think it would definitely help if people were informed prior to and continuously (HV lead 5)

While ownership of QI and empowerment of HVs was stated as being one of the most important aspects of the scorecard, support from management in terms of communicating about the scorecard, ensuring other staff are involved in changes and protecting time to be able to work on QI projects was also seen as being a necessary requirement for successful implementation of the scorecard in the future. There was some concern among HVs and HV leads that taking on QI projects would result in extra work for them on top of their regular caseload and that time would not be allowed for focusing on QI as a separate venture. This could lead to HVs being reluctant to be involved in QI more generally and could hamper future improvements if sufficient time and support were not made available to those implementing the scorecard.

2.10.17.4 IT systems and data quality

Numerous problems were experienced by all sites in finding and extracting the data needed to populate the scorecard. This was due in some cases to HVs using primarily free text to record details of contacts and in other cases due to the inability of current IT systems to record data in the necessary format.

But, I think one of the biggest problems that we had was with the data collection, I think that was a lot more difficult than we'd anticipated in finding out who the right person was, and how to collect the data, and that's still ongoing, so I suppose that we have had to learn skills that we hadn't utilised before (HV lead 2)

...it's been really hard to get the data...the systems are not set up to directly get the data anyway, but then it's also been a challenge to actually get the data as well from the analyst (HV lead 4)

I think IT system support is the most important thing that anybody looking to implement this is to have, because it's easy to say that the scorecard will do this, but if your system doesn't allow it, it's just difficult as you've seen. So, they really need to have am...either have a system that's adaptable to the scorecard or a system that, yea, would be willing to, for the changes to be made (HV lead 5)

The underlying purpose of QI is that changes in services are made where the data indicates that they are not being provided at the requisite level. In order to be able to identify areas where services need improvement, it is first necessary to have accurate and reliable data available otherwise services may spend inordinate amounts of time improving areas that do not need it. It is necessary to have data systems that are capable of providing information on current service provision in order to be able to make changes to track the success, or not, of QI over time.

2.10.18 Summary of findings

The purpose of this research question was to identify the main facilitators and barriers to successfully introduce the scorecard in this project in order to inform future use of the scorecard. Data were drawn primarily from interviews and focus groups with HVs, QI project notes and also from field notes of meetings.

The facilitators identified included: the scorecard's fit with the values of HVs, the timing of the scorecard to coincide with other related changes in services and HVs feeling empowered in their work. Each of these facilitators is likely to contribute to the successful implementation of the scorecard in the future.

Barriers identified included: difficulty in understanding the scorecard and communicating it to others, a lack of experience and knowledge in QI, low levels of support from managers, and difficulties in extracting data from IT systems. These are factors that could have an impact on the successful implementation of the scorecard in the future but could be addressed prior to its introduction at least to some extent.

2.11 Limitations and discussion of results

This section is a discussion of the findings from the three research questions as outlined above. Firstly, the limitations of the evaluation study are addressed and following this, each research question is addressed individually and in sequence and their potential implications for the future use of the scorecard in health visiting services is discussed.

2.11.1 Limitations

The aim of the scorecard is to assess the value of health visiting as it relates to perinatal mental health. This is thought to be achievable through the collection of activity, outcome and experience data and the identification of areas for QI in services. The aim of the evaluation was to explore the impact of introducing the scorecard on adherence to national guidelines in practice in terms of routine practice and experience of service, to assess where the scorecard can be used to identify areas for change and to identify the facilitators and barriers that are likely to affect use of the scorecard in the future.

While data were collected from all stakeholders throughout the course of the evaluation in a number of different ways, there are some limitations to the evaluation that need to be borne in mind when interpreting the findings as presented here.

Short timeframes dictated that outcomes of using the scorecard were not possible to record during the span of the evaluation. The scorecard was initially launched in September 2014 but due to time needed for initial development work, it took until January for the QI projects to be introduced. Usually, when measuring the effects of QI, data would be taken over a longer period of time to be able to confidently assess the impact of any changes (18).

Challenges in obtaining the relevant data to populate the scorecard meant that there were many fields within the scorecard that had no data to be analysed. This had a direct effect on the ability to report on QI projects at site 1 where no data relating to the project was available either for baseline or post intervention. This was primarily due to the incompatibility of current health visiting IT systems with the data points on the scorecard. All of the sites are now looking at ways to

improve data recording on their systems (either current or future) in an effort to ameliorate these inconsistencies but it will not be possible to accurately assess current practice or improvements to services until these systems have been put in place.

A third limitation was in relation to service user data collection. Due to time and resource constraints, it was not possible to include service users for whom English was not a fluent language. This meant that a large proportion of service users in the sites were not involved in the evaluation and they may have added a different perspective from those presented here. Also, fathers were not recruited in the present evaluation, and any future evaluation of the scorecard, or of health visiting more generally, would likely benefit from the inclusion of other groups to give a more comprehensive understanding of how all service users experience health visiting.

Finally, there were some challenges in recruiting HVs to participate in the evaluation. Of 34 Time 1 questionnaires returned, only two of these HVs also completed and returned a Time 2 questionnaire, meaning that these could not be analysed for change over the lifespan of the project. Also, focus groups with HVs were conducted at only two of the sites (although alternative means of collecting data from the other two sites were employed); it is possible that some important data were lost by not speaking directly with these groups of HVs. Conversations with HV leads at the two sites who did not participate in staff focus groups, indicated that staff were generally reluctant to engage with the evaluation and the scorecard QI projects as they were seen to be a burden on their time; these were also the sites that returned the lowest number of PREMs each month.

2.11.2 Discussion of findings

2.11.2.1 RQ1: Does the scorecard improve adherence to best practice and what areas of change to current practice does the scorecard help to identify?

A number of national and local guidelines are available to HVs to advise them on best practice based on the current evidence base. Qualitative and questionnaire data from this evaluation suggest that HVs were aware of these guidelines and what they were required to do to follow them and that they were in general agreement with such directives. However, a number of issues were identified early on in the project in relation to data and IT systems at each of the sites, the most influential being the incompatibility of current systems with the recording or extraction of information on scorecard data points.

A small manual random audit of case files showed that there were sometimes quite large discrepancies between what was recorded electronically vs. what was recorded through free text, in terms of alignment of service provision and national guidelines. However, given the difficulties encountered at all of the sites in engaging data analysts and finding ways to extract the data necessary for the scorecard, it is not clear if other sites would persevere to the same extent without being part of a group. This was by far the most time consuming challenge of the scorecard project and even though HV leads were given allocated time to work on the project, many still reported spending extra time on working with IT systems.

It will be important for future use of the scorecard for a data analyst to be part of the initial implementation team so that they can have an understanding of what is required from IT systems

and what is possible to extract. This will also help to reduce the burden on HV leads or specialists with responsibility for using and implementing the scorecard in new health visiting sites.

Evidence from this evaluation has shown that the scorecard identified at least one area for QI in each of the sites. In the first instance, most sites concentrated on finding ways to improve their data collection and to make this easier to extract to populate the scorecard so that it could give a better indication of current practice. It will not be possible to see whether the scorecard can improve adherence to best practice until accurate baseline data are available and this will likely require extra work on the part of data analysts in the initial introductory stages of the scorecard.

The scorecard has the potential to measure the level of adherence to best practice guidelines when the necessary data become available and will be a useful tool to identify departures from best practice and therefore, future QI projects. The aim of the scorecard in this sense is to provide a means for HVs to monitor, on a month-to-month basis, progress against guidelines and to introduce ways to improve adherence. HVs reported that they would find these data useful for presenting to commissioners evidence of the work that they currently perform and help to support requests for further services.

While it was not possible to state whether the scorecard actually led to improvements in adherence to best practice, evaluation results suggest that it has the potential to be used in this way and that it is an acceptable means of collecting and presenting this data to HVs generally. Evidence from the evaluation does suggest that use of the scorecard has the potential to improve the ability of health visiting services to demonstrate their adherence to best practice.

For the three QI projects that had data available for analysis, there was improvement in the areas targeted, although these would need to be monitored after the project comes to an end to ensure they continue on an upward trajectory. Overall, HV leads were enthusiastic about the QI aspect of the scorecard and saw it as a means of directing improvements to services from the 'bottom up' rather than just following directives from management. This could in the future be an important feature of the scorecard that would help to make it acceptable to HVs and to motivate them to become involved in QI across the service.

2.11.2.2 RQ2: How can the scorecard be used to improve patient experience?

Patient experience has become increasingly important within healthcare over recent decades as research has shown the association with physical and mental health outcomes (19). Part of the scorecard includes measures of patient experience relating to the relationship between HVs and service users. This 13 item questionnaire reflects what service users and HVs said were important to them in determining good quality health visiting services. This was particularly welcomed by many HVs as they felt that there has traditionally been a lack of focus on measuring patient experience within health visiting and because they saw the relationship between HVs and families as vitally important to providing good service.

There was little change in PREM responses over time, which may be explained by a) none of the QI projects targeting patient experience, b) the short time-frame over which PREMs were collected, and/ or c) the generally high levels of satisfaction service users reported, similar to measures of patient experience in other healthcare settings. Patient experience questionnaires are known to produce largely positive responses partly because they are completed by individuals who self-select

and there may be some selection bias at play. The ceiling effect in the PREM responses found in the present evaluation should be considered if the PREM continues to be collected by HV services; high baseline levels of satisfaction may make it more challenging to assess change overtime. This could be mitigated by examining particular items, which revealed more variation than the subscales in the present evaluation, or by examining qualitative feedback (e.g., using free-text survey responses) to identify potential QI projects that target experience. Qualitative data analysis of interviews and focus groups with HVs and mothers showed a more nuanced picture than the PREM data and particularly highlighted potential areas for future QI projects.

Overall, there was a good match between what service users and what HVs said made for a positive or negative experience of health visiting. This should help to ensure that service users are receiving a largely supportive and professional service and results from the questionnaire indicated that most service users were satisfied with the care they received.

Also, as noted in the limitations, those who have difficulty reading English are likely to have been excluded from this data collection and analysis. It is unclear therefore, if the results of the PREM data presented here are a true reflection of how all service users view health visiting services.

Examination of PREM data by scorecard theme and by individual items showed that there are some areas unique to each of the sites that could become a focus for future QI. However, there was little variation over time for each of the themes at individual sites, suggesting that it may be more useful to look at individual item scores monthly to assess areas in need of improvement in the future. These aspects of care may be more difficult to implement through QI approaches than those in the clinical data element of the scorecard however, and would likely require input from experts in healthcare QI to be able to introduce QI actions that could address the subjective area of perspectives of services received.

A particular issue that arose in the collection of the PREM data, as reported by HV leads, was the time that it took to both distribute and collect the questionnaires. Local areas may need to plan individually how and when these data can be collected and it may be necessary to appoint one or two people to have sole responsibility of this section of the scorecard to ensure it is collected regularly and in similar numbers each month; this could be part of specialist perinatal mental health HV roles with a remit for QI.

2.11.2.3 RQ3 What are the facilitators and barriers to implementing the scorecard?

A number of facilitators and barriers to implementing the scorecard were identified in the evaluation. Broadly, the facilitators related to health visitors being engaged and interested in improving perinatal mental health and feeling that they have control over the services they provide. The barriers related to lack of support and/or communication between different levels of service providers and difficulties with understanding and explaining the scorecard itself.

Future implementations of the scorecard could be supported through giving ownership of the scorecard to HVs themselves with adequate support from managers to support the uptake of QI projects with HVs. This would likely require some level of targeted training for HVs who generally were aware of QI in a broad sense but had not used this approach before and felt somewhat lacking in the skills necessary to plan and implement QI projects.

Motivation among staff to become involved in the scorecard and/or QI projects varied across sites. For some areas, the scorecard was seen to be an additional burden on their time and HVs were reluctant to take on what they felt would be extra work for which there was not the capacity in the service. Despite this, staff at all sites were generally positive about the focus of the scorecard and supported the need to better capture and evidence the services they provide in terms of perinatal mental health and wellbeing. It would be important in future implementations of the scorecard to be able to harness this support in a way that could ensure the practical input from staff on the ground is secured and sustained so that QI projects have the chance to lead to real changes in the quality of services provided.

Many HVs and HV leads reported that it took considerable time for them to fully understand the scope and purpose of the scorecard. This made it more difficult for leads to encourage other staff to become involved in QI projects at the time. Two of the sites had particular difficulty in involving other staff in the scorecard and QI projects, and by extension the evaluation study, and this was seen to be related to these issues of understanding and training. Effective strategies of communicating the purpose and scope of the scorecard and a clear outline of the actual time being asked of HVs could help to promote its use and ensure that it becomes part of everyday service provision.

Although initially many HVs viewed the scorecard as being an additional burden on their time, some QI projects showed that it did not require HVs to give more time but that communicating this to HVs may itself be a challenge; HV leads reported that management support was necessary to be able to do this.

By far the most challenging aspect of the project experienced by HV leads concerned the sourcing and extraction of relevant data to populate the scorecard. Current IT systems appeared to be incompatible with particular aspects of national guidelines and the data points of the scorecard. HV leads spent considerable time locating an individual within their site who could assist them in extracting the data needed, and, in some sites, modifying the way data were entered in order to use them to assess current practice. The scorecard data are reflective of the type of information that health visiting services are likely to be required to produce in the near future by commissioners, and most HV leads saw the scorecard as being a useful tool to present these data in a useful way. However, by the end of this evaluation study, some sites were still struggling to record and display the data for the scorecard and it is likely that other sites will encounter similar difficulties in implementing the scorecard in the future. Successful future use of the scorecard will depend on IT systems being able to accurately record the data needed for the scorecard and training for staff in coding information in a consistent and reliable way.

2.12 Conclusions

This evaluation has been able to show that the perinatal mental health value scorecard has the potential to be a useful tool to report and reflect on health visiting practice within the context of national best practice guidelines and aspects of service provision that are important to service users. Although the time allowed to conduct the evaluation was short, and it was not possible to measure intended outcomes of using the scorecard, it was possible to identify the key areas of potential change that could be identified through use of the scorecard. These include increasing adherence to best practice principles and guidelines, potential improvements to experience of

services for women during the perinatal period and affording HVs a means of reviewing and reflecting on their own practice. Evidence from the evaluation suggests that use of the scorecard has the potential to improve the ability of health visiting services to demonstrate their adherence to best practice.

The facilitators identified through this evaluation reflect the attitudes and values of HVs in supporting families and promoting positive wellbeing. This is an important aspect of the scorecard in that HVs in this evaluation reported that they viewed the scorecard as a means of ensuring the best outcomes for families. The barriers to implementing the scorecard reflect the wider contexts in which health visiting services operate and may be key areas to address before introducing the scorecard in the future to enable a faster implementation and wider involvement of health visiting staff.

Future testing and evaluation of the scorecard is necessary to measure the impact it has on outcomes for families and for perinatal mental health specifically. The findings from this evaluation of the project suggest that these longer-term outcomes could be achieved when the necessary supports are in place to implement the scorecard successfully and to accurately track and measure changes over time.

2.13 References

1. Pawson, R., & Tilley, N. (1997). *Realistic Evaluation*. London: SAGE.
2. Bandura, A. (1995). *Self-efficacy in changing societies*. Cambridge: Cambridge University Press.
3. Fernando, S. M., Deane, F. P., & McLeod, H. J. (2009). Sri Lankan doctors' and medical undergraduates' attitudes towards mental illness. *Social Psychiatry and Psychiatric Epidemiology*, 45(7), 733-739. doi: 10.1007/s00127-009-0113-6
4. Gabbidon, J., Clement, S., van Nieuwenhuizen, A., Kassam, A., Brohan, E., Norman, I., & Thornicroft, G. (2013). Mental Illness: Clinicians' Attitudes (MICA) Scale—Psychometric properties of a version for healthcare students and professionals. *Psychiatry Research*, 206(1), 81-87. doi: 10.1016/j.psychres.2012.09.028
5. Kassam, A., Glozier, N., Leese, M., Henderson, C., & Thornicroft, G. (2010). Development and responsiveness of a scale to measure clinicians' attitudes to people with mental illness (medical student version). *Acta Psychiatrica Scandinavica*, 122(2), 153-161. doi: 10.1111/j.1600-0447.2010.01562.x
6. Kobau, R., Dilorio, C., Chapman, D., & Delvecchio, P. (2009). Attitudes About Mental Illness and its Treatment: Validation of a Generic Scale for Public Health Surveillance of Mental Illness Associated Stigma. *Community Mental Health Journal*, 46(2), 164-176. doi: 10.1007/s10597-009-9191-x
7. Lobban, F., Barrowclough, C., & Jones, S. (2005). Assessing cognitive representations of mental health problems. I. The illness perception questionnaire for schizophrenia. *British Journal of Clinical Psychology*, 44(2), 147-162. doi: 10.1348/014466504x19497
8. Quinn, K. M., Laidlaw, K., & Murray, L. K. (2009). Older peoples' attitudes to mental illness. *Clinical Psychology & Psychotherapy*, 16(1), 33-45. doi: 10.1002/cpp.598
9. Watson, H., Maclaren, W., Shaw, F., & Nola, N. (2003). *Measuring staff attitudes to people with drug problems: The development of a tool*. Scotland: Scottish Executive.
10. Department of Health (2009). *Healthy Child Programme: Pregnancy and the First 5 Years of Life*. In: Health Do, editor. London: Department of Health
11. NHS England 2015 - 16 National Health Visiting Core Service Specification
12. Portela, M.C., Pronovost, P.J., Woodcock, T., Carter, P. & Dixon-Woods, M. (2015). How to study improvement interventions: A brief overview of possible study types. *BMJ Quality & Safety*. Published online first 25th March 2015. Doi: 10.1136/bmjqs-2014-003620
13. Bandura 2006 Bandura, A. (2006). Guide for Constructing Self-Efficacy Scales. In Urdan, T & Pajares, F (Eds), *Self-Efficacy Beliefs of Adolescents* (pp. 307-337). : Information Age Publishing.

14. Cox, J., Holden, J. & Henshaw, C. (2014). *Perinatal mental health: The Edinburgh Postnatal Depression Scale (EPDS) manual*. London: Royal College of Psychiatrists
15. Perla, R. J., Provost, L. P., & Murray, S. K. (2011). The run chart: a simple analytical tool for learning from variation in healthcare processes. *BMJ Quality & Safety*, 20(1), 46-51. doi: 10.1136/bmjqs.2009.037895.
16. National Quality Board (2015). Improving experiences of care: Our shared understanding and ambition. Available at: <http://www.england.nhs.uk/wp-content/uploads/2015/01/improving-experiences-of-care.pdf>
17. Cowley, S. et al. (2013). *Why health visiting? A review of the literature about key health visitor interventions, processes and outcomes for children and families* (Department of Health Policy Research Programme, ref. 016 0058). London: King's College London
18. Allwood, D. (2014). *Engaging clinicians in quality improvement through national clinical audit*. London: Healthcare Quality Improvement Partnership (HQIP).
19. Doyle, C., Lennox, L., & Bell, D. (2014). A systematic review of evidence on the links between patient experience and clinical safety and effectiveness. *BMJ Open*, 3. doi:10.1136/bmjopen-2012-001570

3 Economic evaluation of the perinatal mental health scorecard

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3.1 Perinatal mental health scorecard questions of interest and short title key

Six questions (as part of two question groupings) included in the perinatal mental health scorecard were of particular interest to the economic analysis presented in this report. These questions are referred to by a short title for reference and descriptive purposes throughout this report, as described in Table K1.

Table K1: Grouping, short title reference and full outcome measure question key for the perinatal mental health scorecard

Grouping	Short title reference	Full perinatal mental health scorecard question
Antenatal	Past history of mental health problems (antenatal)	Percentage (%) mothers/fathers assessed antenatally who are asked about past history of mental health problems, and a care history documented in mother's clinical record
	Maternal mood assessed (antenatal)	Percentage (%) mothers assessed antenatally who have maternal mood assessed using a relevant tool: Whooley mood assessment tool/EPDS/PHQ9 or maternal mood assessment tool.
Postnatal	Past history of mental health problems (postnatal)	Percentage (%) mothers/fathers assessed postnatally who are asked about past history of mental health problems, and a care history documented in mother's clinical record.
	Maternal mood assessed (postnatal)	Percentage (%) mothers assessed postnatally who have maternal mood assessed using a relevant tool: with Whooley mood assessment tool/EPDS/PHQ9 or maternal mood assessment tool
	Received listening visits	Percentage (%) mothers assessed postnatally who receive 6 listening visits of those deemed to require them
	PND after birth	Percentage (%) of expected number of women identified who experience perinatal depression (PND) after birth

EPDS: Edinburgh Postnatal Depression Scale; PHQ9: Patient Health Questionnaire version 9; PND: perinatal depression

3.2 Introduction

The known costs of perinatal mental health problems per year's births in the UK has been estimated to total £8.1 billion; of these costs 28% relate to the mother and 72% relate to the child (1). Women in around half the UK have no access to specialist perinatal mental health services and it has been suggested that the cost to the public sector of perinatal mental health problems is five times the cost of improving current services (1).

A perinatal mental health scorecard was designed to drive up quality and consistency of service delivery through the implementation of the scorecard by the health visiting workforce. The evaluation of the scorecard involved assessing if the scorecard supported best practice for the service (e.g., early identification of perinatal mental health problems, appropriate action based on identification, systematic implementation of guidelines), if the scorecard improved quality and experience of the service, and if it improved perinatal mental health outcomes for the mothers and outcomes for children. This report focuses on the economic costs and benefits of implementing the scorecard.

3.3 Aims and Objectives

The aim of this analysis was to conduct an economic evaluation, comparing the cost of implementing the perinatal mental health scorecard with the assumed change in care and service post-implementation. As part of this aim, there were four objectives:

1. Quantify the cost of implementing the scorecard
2. Quantify the change in service based on the outcomes included as part of the scorecard
3. Perform a literature search to identify the possible economic and quality of life benefits from implementing routine outcome measurement for perinatal mental health services
4. Calculate the cost-effectiveness of implementing the scorecard using an economic model.

3.4 Methods

3.4.1 Study sample

The study sample included two groups of people: (1) local project leads and health visitors who implemented the scorecard; (2) mothers under the care of these health visitors from pregnancy up to 1 year postnatal who received the service. The overall scorecard was implemented at four sites which were Newham, Hackney, Tower Hamlets, and North East London Foundation Trust (NELFT). These scorecards were implemented (for these four sites) by either health visitors or specialist health visitors.

3.4.2 Scorecard and timesheet datasets

The perinatal mental health scorecard consisted of 25 questions that were split into five groups included in the study at two defining time periods: (1) baseline data (March 2014 to December 2014), pre-implementation of the scorecard; (2) implementation data (January 2015 to May 2015), post implementation of the scorecard. All questions were completed on a monthly basis and reflected a change in type or quality of the service dependent on the construct of the question.

The first group of five questions were about the descriptive statistics of service users or potential services users, which included: (1) number of live births; (2) number of children aged 0-4 years; (3)

number of children aged 0-4 years as a percentage of the total population; (4) anticipated number of women who will experience perinatal depression antenatally; (5) anticipated number of women who will experience perinatal depression after birth. The other four groups of questions (20 questions), which are the focus of this analysis, are (1) outcome questions about the antenatal service and its users, (3 questions); (2) outcome questions about the postnatal service and its users, (12 questions); (3) patient-reported experience measure (PREM) questions, (3 questions – these questions were only included in the implementation stage of the study); (4) resource-use in relation to health visitors' time or case load, (2 questions). The full questions are described in Table 9 and Table 10.

Timesheets were allocated to the health visitors who implemented the service at the sites to record the tasks they were completing in order to implement the scorecard and associated time required to complete these tasks. These timesheets included tasks pre and post implementation.

Secondary analysis of routine clinical data collected through the scorecard pilot project was used for this analysis. Due to the quantity and quality of data recording or the ability to extract relevant data to complete the scorecard, and the recording of staff time required to implement the scorecard, this analysis focuses on one particular site (NEFLFT) for which the data were considered to better represent the scorecard as it could work in practice. The analysis of this scorecard as a case study will be described as a limitation at the end of this report.

3.4.3 Descriptive statistics, statistical analysis and unit costs

Benefit from the scorecard was assessed by any recorded improvement in performance and reporting that occurred post-implementation. Descriptive statistics of performance and data quality metrics were reported to provide an overall summary of changes pre versus post implementation. A simple linear regression was used to evaluate if there was a statistically significant (p -value < 0.05) change in service based on the recorded data for the questions in the scorecard post-implementation as a whole time period and per month. The rationale for assessing per month was to identify if there may have been a time lag between implementing the service and a change in service based on the recorded data. Coefficients from the regression analysis that represent the change in service post implementation and 95% confidence intervals (CI) have also been reported.

3.4.4 Literature search of the potential economic and quality of life benefits from implementing routine outcome measurement for perinatal mental health services

Evidence for potential sources of cost and benefit resulting from the scorecard was sought from the literature. The potential sources of costs and benefits were anticipated to derive from: (1) improvements to service as a result of implementing a quality improvement activity such as a scorecard; (2) improvements for patients as a result of the scorecard, potentially through improved evidence based management of perinatal depression (PND). The second point of focus for this literature search (management of PND) was chosen post-hoc after an examination of the statistically significant results in relation to a change in the perinatal service identified by the perinatal mental health scorecard, as presented in section 3.5.4 of this report. The perinatal mental health scorecard aimed to improve more aspects than the management of PND only, as described in section 3.4.2 of this report, but for the purpose of this literature search the focus was only on the management and screening of PND. A literature search of publication databases and Google was undertaken to identify cost-effectiveness or more generalised studies that related to these two areas. Search terms included 'perinatal', 'antenatal', 'postnatal', 'depression', 'mental health', 'screening', 'patient

reported outcome measures', 'PROM', 'cost-effectiveness' or any combination of these search terms, as well as a general search of references and citations to identify papers of interest for this literature search. Note, the term 'literature search' is preferred in this report, rather than any formal use of the term 'literature review', because of the specific and timely nature of identifying papers for this report which meant it could not be described as a more formal literature review (for example, a systematic literature review) – this is described as a limitation at the end of the report.

Table 9: Grouping, short title and full outcome measure questions for the perinatal mental health scorecard (antenatal and postnatal questions)

Grouping	Short title reference	Full outcome measure question
Antenatal	Past history of mental health problems (antenatal)*	Percentage (%) mothers assessed antenatally who are asked about past history of mental health problems, and a care history documented in mother's clinical record
	Maternal mood assessed (antenatal)*	Percentage (%) mothers assessed antenatally who have maternal mood assessed using a relevant tool: Whooley mood assessment tool/EPDS/PHQ9 or maternal mood assessment tool.
	Referral with mental health problems (antenatal)	Percentage (%) women assessed antenatally who have moderate to severe perinatal mental health problems and are referred to GP/ psychologists/ perinatal mental health services
Postnatal	Past history of mental health problems (postnatal)*	Percentage (%) mothers assessed postnatally who are asked about past history of mental health problems, and a care history documented in mother's clinical record.
	Maternal mood assessed (postnatal)*	Percentage (%) mothers assessed postnatally who have maternal mood assessed using a relevant tool: with Whooley mood assessment tool/EPDS/PHQ9 or maternal mood assessment tool
	EPDS assessment and harm negative	Percentage (%) women assessed postnatally with EPDS who score over 10, but are deemed to be harm negative (this site uses score >12)
	Received listening visits*	Percentage (%) mothers assessed postnatally who receive 6 listening visits of those deemed to require them
	Listening visits and EPDS assessment	Percentage (%) mothers who have received listening visits and still score more than 10 on a repeat EPDS assessment
	Listening visits, EPDS assessment and referral	Percentage (%) mothers who have received listening visits and still score more than 10 on a repeat EPDS assessment and who are referred to GP/psychologist/ perinatal mental health service
	EPDS assessment and harm positive	Percentage (%) women assessed postnatally with EPDS who score over 10, and are deemed to be harm positive
	Referral with mental health problems (postnatal)	Percentage (%) women assessed postnatally who have moderate to severe perinatal mental health problems and are referred to GP/ psychologists/ perinatal mental health services
Wellbeing care plan	Percentage (%) women assessed throughout the perinatal mental health pathway who have a wellbeing care plan in place	
Care plan review	Percentage (%) of women who have their care plans reviewed and updated at all stages on the perinatal mental health pathway following PNMH supervision	

PND during pregnancy*	Percentage (%) of expected number of women identified who experience perinatal depression (PND) during pregnancy
PND after birth*	Percentage (%) of expected number of women identified who experience perinatal depression (PND) after birth

EPDS: Edinburgh Postnatal Depression Scale; PHQ9: Patient Health Questionnaire version 9; PND: perinatal depression

* All questions with a short title reference in **bold** were completed for the case study site. Information to complete all the other questions was classified as missing within the mental health scorecard and therefore not included in this analysis.

Table 10: Grouping, short title and full outcome measure question for the perinatal mental health scorecard (PREM and resource use questions)

Grouping	Short title reference	Full question
PREMs	Supported and understood*	Percentage (%) of women who have received listening visits who complete the questionnaire and agree that they feel supported and understood by their health visitor.
	Confident and knowledgeable*	Percentage (%) of women who complete the questionnaire and agree that after contact with their health visitor they feel confident and more knowledgeable about things they need to know.
	Family adjustment to new baby*	Percentage (%) of women who complete the questionnaire and agree that they were asked how the whole family is adjusting to the new baby.
Resource use	PND cases identified ratio*	Number of PND cases identified based on the number of WTE health visitors, represented as a ratio
	Extra HV time	Extra time used by health visitors

PREM: Patient Reported Experience Measure; PDN: perinatal depression; HV: health visitor; WTE: whole time equivalent.

* All questions with a short title reference in **bold** were completed for the case study site. Information to complete all the other questions was classified as missing within the mental health scorecard and therefore not included in this analysis.

The cost of implementing this scorecard was based on unit costs for a health visitor obtained from the Personal Social Services Research Unit's (PSSRU's) Unit Cost of Health and Social Care for the year 2014 (2). The hourly wage for a health visitor was equated as £43 per hour (including on-costs and overheads) based on the cost assumptions for non-patient related work for a health visitor – this unit cost was used, compared to the unit cost for patient-related work, because the tasks involved in implementing the scorecard by the health visitor were not directly associated with patient care. This unit cost was multiplied by the time spent implementing the scorecard over the entire time period of the study (baseline and post implementation) to reflect the initial set up and ongoing costs of the scorecard. However, because all these tasks were associated with implementing the scorecard, no differentiation was made between types of task or time periods for which the tasks were completed – all recorded tasks were associated with the overall time and cost associated with implementing the scorecard for the purpose of this analysis.

All statistical analysis described in this section (section 3.4) was carried out using Stata version 14 (StataCorp, 2015).

3.4.5 Development of cost-effectiveness model

For the cost-effectiveness analysis we focused on the scorecard questions for which there were data available as part of the scorecard dataset and also evidence elsewhere in the literature about potential benefits and costs. The two questions identified from the scorecard were “Maternal Mood assessed (postnatal)” and “Maternal Mood Assessed (antenatal)”. This data was used to assess the cost-effectiveness of increased screening for PND. Note that the papers and empirical evidence identified during the literature search and descriptive statistics and analysis of the service based on the scorecard dataset, which have been identified as part of the first and third objectives of this analysis, has informed the development of this economic model; therefore, some results have been briefly described in this section as part of the methods of developing the economic model, which are also repeated in the results and discussion sections of this report.

The literature search identified one paper, which was a systematic review of clinical and cost-effectiveness of PND screening (3) but reported that screening for PND is not cost-effective. Assumptions made in the model though did not reflect actual service provision as recorded for the scorecard. In particular the authors assumed a high percentage of women (13%) received treatment for depression who do not have a diagnosis of depression, but this was based purely on false positive cases from Edinburg Postnatal Depression Scale (EPDS; having a score above 12, but are not diagnosed with depression). In reality, based on the data from the scorecard, only a very small number of patients are referred to other services to receive treatment for PND. Given the small number it is unlikely that false positive cases are referred and receive treatment, but that only extreme cases with additional evidence of need receive referrals.

A decision tree based on the model in Hewitt et al (3) was developed within Microsoft Excel 2010 (Microsoft, 2010, Redmond, Washington) with the aim of estimating the cost-effectiveness of screening for PND and referral to other services or listening visits that better reflected actual treatment pathways (see Figure 34).

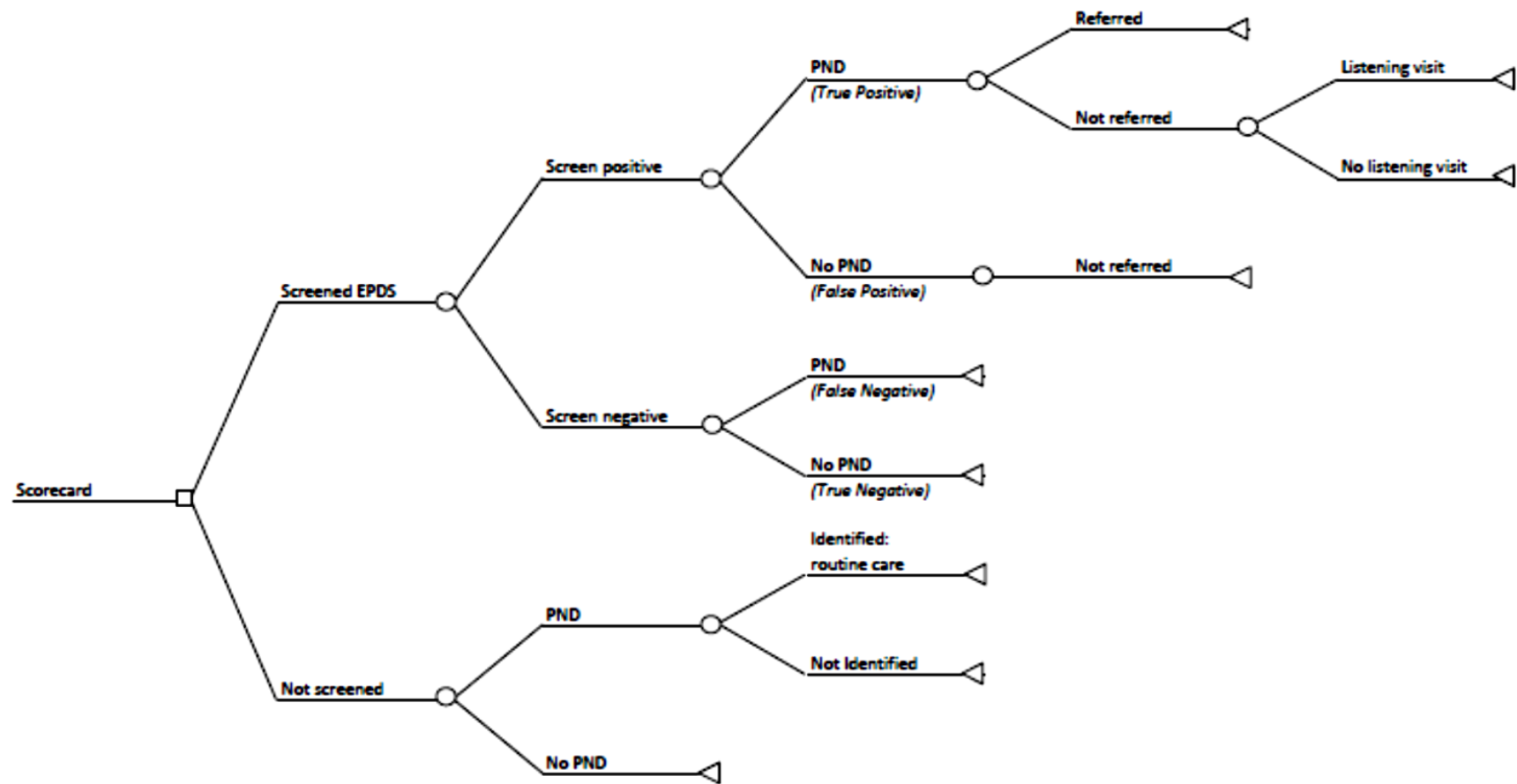


Figure 34: Decision tree diagram for the PND screening cost-effectiveness model

Using the statistics on improvements in performance and the cost of implementing the scorecard as described in sections 3.5.2 and 3.5.4 of this report, we calculated the cost and increase in quality adjusted life years gained (QALYs) for 1,400 pregnancies post-implementation of the scorecard compared to pre-implementation. QALYs are a measure of the quality of life over time and are the statistic recommended by the National Institute for Health and Care Excellence (NICE) for use in cost-utility analyses, also referred to as cost-effectiveness analysis (4).

We report the costs and QALYs over one year for three models: (1) increase in the percentage of patients screened for antenatal depression; (2) increase in the percentage of patients screened for postnatal depression; (3) increase in the percentage of patients screened for perinatal depression (postnatal and antenatal screening statistics combined). In all three models we assumed patients were screened using the EPDS and a cut off score of 12. For each model, the incremental cost per QALY gained post-implementation of the scorecard compared to pre-implementation is reported. NICE generally use a threshold of £20,000 to £30,000 per QALY gained to assess if a new intervention is cost-effective compared to current practice. We also conducted sensitivity tests to provide an estimate of costs and QALYs across a range of scenarios. For all analyses, the costs and QALYs from the combined perinatal results are reported only (for example, results specific to antenatal or postnatal depression are not reported). All probability values were obtained either directly from the perinatal mental health scorecard dataset or Hewitt et al (2009).

- (1) Hewitt et al (3) reported that 38% of patients with PND (5% of all patients) were identified as having PND as part of routine practice. Our estimate from the perinatal mental health scorecard data was that 4% of the expected 12.9% of patients with PND are referred to services (0.5% of all patients). We investigated the impact of increasing the percentage of patients with PND identified as part of routine practice to 38%. Secondly, we tested the figure assumed by the mental health scorecard of 12.9% (5% of all patients), and thirdly we tested if all patients with PND were identified as part of routine practice (12.9% of patients).
- (2) A very small number of women who screened positive on EPDS were then referred to other services (4% as calculated directly from the scorecard dataset) and the scorecard data was not robust. We investigated the impact of a higher percentage of patients who screened positive for PND ([a] 10% and [b] 50%) being referred to other services and receiving psychological therapies as a result of the scorecard.
- (3) We assumed that only women with PND were referred to other services or received listening visits. Hewitt et al (2009) assumed that 13% of women were false positives (did not have PND but screened positive on the EPDS so received treatment). We investigated the impact of false positives being referred to treatment (4% referral rate) and receive listening visits (59% after)
- (4) There was a difference between the two groups pre and post implementation for percentage receiving listening visits based on the scorecard dataset. We assumed that the same proportion received listening visits before and after and report the results.
- (5) Health visitors might be using questionnaires other than the EPDS or cut-off scores to screen patients. We assessed the cost-effectiveness of using the EPDS, but a cut-off of 16.
- (6) A meta-synthesis reported in Hewitt et al (3) reported a range of estimates for the incidence of PND. For this analysis we tested the impact of the incidence of PND: (a) being less than reported (5%) and; (b) greater than reported (15%).

3.5 Results

3.5.1 Descriptive statistics about the service implementing the scorecard and the service-users

Over the study period a total of 518 women (176 baseline and 342 post-implementation) were anticipated to have antenatal depression and 910 women (617 baseline and 290 post-implementation) to have postnatal depression, which equates to 1428 women (793 baseline and 632 post-implementation) who were anticipated to have perinatal depression over the one year and three month time period (all descriptive statistics described in this section are presented in Table 11).

The total number of antenatal women (at 28 to 32 weeks) known to this service was 4019 (1367 baseline and 2652 post-implementation) over the whole study period – the number of women known to the service increased during the post-implementation period from 167 women in December 2014 (baseline), to 188 women in January (first month post-implementation), 585 in March and finally 914 women in May (final month of post-implementation data recording). In contrast, the number of assessments completed in antenatal women (at 28 to 32 weeks) was 1118 over the study period, which was 394 at baseline and 724 post-implementation – this qA approximately 39.4 assessments completed per month at baseline and 144.8 assessments completed per month post-implementation.

Over the whole study period, there were a total of 7036 live births (4782 baseline and 2255 post-implementation) that were due a visit from a health visitor. Over the same time period, 6943 visits were completed (4726 baseline and 2217 post-implementation), which is 98.7% (98.8% baseline and 98.3% post-implementation) of those who were due a visit.

The total number of postnatal contacts due at 4 to 12 weeks and then 8 to 12 months were 6395 (4297 baseline and 2098 post-implementation) and 7095 (4775 baseline and 2320 post-implementation), respectively, over the whole study period. Over the same study period, the total number of postnatal contacts completed at 4 to 12 weeks and then 8 to 12 months were 6113 (4124 baseline and 1989 post-implementation) and 6379 (4211 baseline and 2168 post-implementation), respectively. For the contact at 8 to 12 months, another 330 (300 baseline and 30 post-implementation) contacts were made after the 12 month period, making the total number of 8 to 12 month contacts completed 6709 (4511 baseline and 2198 post-implementation). This is approximately 95.6% (96.0% baseline and 94.8% post-implementation) of 4 to 12 week contacts and 94.6% (94.5% baseline and 94.7% post-implementation) of 8 to 12 month contacts completed which were due over the whole time period.

Table 11: Descriptive statistics about the service and service-users

	Study period	Baseline	Post-implementation
Anticipated numbers of PDN cases			
Women anticipated to have antenatal depression	518	176	342
Women anticipated to have postnatal depression	910	617	290
Women anticipated to have PDN	1428	793	632
Due and completed cases: antenatal			
Women known to the services @28 to 36 weeks	4019	1367	2652
Antenatal visits completed @28 to 36 weeks (% of women known to the service)	1118 (27.8%)	394 (28.8%)	724 (27.3%)
Due and completed cases: new live births			
New live birth due a postnatal visit	7036	4782	2255
Post live birth visit completed (% of women due a visit)	6943 (98.7%)	4726 (98.8%)	2217 (98.3%)
Due and completed cases: postnatal			
Postnatal visit due @ 4 to 12 weeks	6395	4297	2098
Postnatal visit completed @ 4 to 12 weeks (% of postnatal visits due @ 4 to 12 weeks)	6113 (95.6%)	4124 (96.0%)	6379 (94.8%)
Postnatal visit due @ 8 to 12 months	7095	4775	2320
Postnatal visit completed @ 8 to 12 months* (% of postnatal visits due @ 8 to 12 months)	6709 (94.6%)	4511 (94.5%)	2198 (94.7%)

PDN: perinatal depression

* 330 of these cases were completed after the 12 month period, 300 at baseline and 30 post-implementation

3.5.2 Cost of implementing the perinatal mental health scorecard

The time taken and cost of the scorecard, based on the recorded events and time taken by the two health visitors who implemented the scorecard, are presented in Table 12 and Table 13, respectively. The overall time taken and cost of implementing the scorecard by the two health visitors was 334 hours and £14,632 (262 hours and £11,266 was spent on the tasks themselves and 72 hours and £3,096 in travel associated with specific tasks).

The specific tasks associated with implementing the service are presented in Table 12 and Table 13. Tasks (and their cost and time taken to complete) included data collection (£645; 15 hours), focus groups with the health visitors (£258; 6 hours) and parents (£258; 6 hours), scorecard awareness training sessions (£516; 12 hours), more specific scorecard training sessions (£559; 13 hours) and scorecard workshops (£774; 18 hours). Travel time was not associated with all tasks, although on average a total of 3 hours (£129) was associated with travel for each task; although it should be noted that the cost for travel is purely based on the opportunity cost of the health visitors' time, rather than the cost of travel itself (e.g. petrol allowance).

3.5.3 Completion of the scorecard questions

For the NEFLT site, a total of 11 out of the 20 questions were completed after extracting the data from the site's data recording system. Within this results section the questions are referred to by their short title reference, which are described alongside the full questions in Table 9 and Table 10. Of the three antenatal outcome measure questions, two questions (67%) were completed: (1) past history of mental health problems (antenatal); (2) maternal mood assessed (antenatal). Of the 12 postnatal outcome measure questions, four questions (33%) were completed: (1) past history of mental health problems (postnatal); (2) maternal mood assessed (postnatal); (3) receive listening visits; (4) PND after birth. It should be noted that data were collected for the 'PND during pregnancy' question, but only for April and May 2015 and so was classified as missing for the purpose of this analysis. All of the three PREM questions were completed; however, as these questions were only completed post-implementation, these questions were omitted from this analysis. The resource-use questions were not included in this analysis (data was recorded for one of the questions: 'PND cases identified ratio') due to uncertainty about data quality or recording of the required information for these questions. The results reported in the next section based on change in service post implementation are therefore focused on six specific questions from the antenatal (2 questions) and postnatal (4 questions) sections of the scorecard.

Table 12: Time spent in hours implementing the perinatal mental health scorecard as a total and by task and associated travel time

Tasks	Task and travel time						Task time						Travel time			
	N	Total (hrs)	Mean (hrs)	SD (hrs)	Min (hrs)	Max (hrs)	N	Total (hrs)	Mean (hrs)	SD (hrs)	Min (hrs)	Max (hrs)	N	Total (hrs)	Mean (hrs)	SD (hrs)
Data collection	4	15	3.75	0.5	3	4	4	15	3.75	0.5	3	4	0	N/A	.	.
Data collection meeting	8	15	1.88	0.23	1.5	2	8	15	1.88	0.23	1.5	2	0	N/A	.	.
Emails	2	4	2	0	2	2	2	4	2	0	2	2	0	N/A	.	.
Events associated with the scorecard	3	36	12	5.2	9	18	3	30	10	6.93	6	18	2	6	3	0
Focus group with health visitors	2	6	3	0	3	3	2	6	3	0	3	3	0	N/A	.	.
Focus group with parents	2	6	3	0	3	3	2	6	3	0	3	3	0	N/A	.	.
Implementing service user questionnaire	14	31	2.21	0.43	2	3	14	31	2.21	0.43	2	3	0	N/A	.	.
Project work and planning	8	39	4.88	1.94	2	7.5	8	39	4.88	1.94	2	7.5	0	N/A	.	.
Quality improvement training	4	35	8.75	2.02	7	10.5	4	23	5.75	2.02	4	7.5	4	12	3	0
Scorecard awareness training session	12	12	1	0	1	1	12	12	1	0	1	1	0	N/A	.	.
Scorecard training session	2	13	6.5	0	6.5	6.5	2	7	3.5	0	3.5	3.5	2	6	3	0
Scorecard workshop	2	18	9	0	9	9	2	12	6	0	6	6	2	6	3	0
Task and finish group	12	60	5	0	5	5	12	24	2	0	2	2	12	36	3	0
Team lead meeting and planning	2	12	6	1.41	5	7	2	6	3	1.41	2	4	2	6	3	0
Unknown task	6	32	5.33	0.52	5	6	6	32	5.33	0.52	5	6	0	N/A	.	.
Total	83	334 hrs					83	262 hrs					51	72 hrs		

Table 13: Cost of implementing the perinatal mental health scorecard as a total and by task and associated travel costs

Tasks	Task and travel costs						Task costs						Travel costs			
	N	Total (£)	Mean (£)	SD (£)	Min (£)	Max (£)	N	Total (£)	Mean (£)	SD (£)	Min (£)	Max (£)	N	Total (£)	Mean (£)	SD (£)
Data collection	4	645	161	22	129	172	4	645	161	22	129	172	0	N/A	.	.
Data collection meeting	8	645	81	10	65	86	8	645	81	10	65	86	0	N/A	.	.
Emails	2	172	86	0	86	86	2	172	86	0	86	86	0	N/A	.	.
Events associated with the scorecard	3	1,548	516	223	387	774	3	1290	430	298	258	774	2	258	129	0
Focus group with health visitors	2	258	129	0	129	129	2	258	129	0	129	129	0	N/A	.	.
Focus group with parents	2	258	129	0	129	129	2	258	129	0	129	129	0	N/A	.	.
Implementing service user questionnaire	14	1,333	95	18	86	129	14	1333	95	18	86	129	0	N/A	.	.
Project work and planning	8	1,677	210	83	86	323	8	1677	210	83	86	323	0	N/A	.	.
Quality improvement training	4	1,505	376	87	301	452	4	989	247	87	172	323	4	516	129	0
Scorecard awareness training session	12	516	43	0	43	43	12	516	43	0	43	43	0	N/A	.	.
Scorecard training session	2	559	280	0	280	280	2	301	151	0	151	151	2	258	129	0
Scorecard workshop	2	774	387	0	387	387	2	516	258	0	258	258	2	258	129	0
Task and finish group	12	2,580	215	0	215	215	12	1032	86	0	86	86	12	1548	129	0
Team lead meeting and planning	2	516	258	61	215	301	2	258	129	61	86	172	2	258	129	0
Unknown task	6	1,376	229	22	215	258	6	1376	229	22	215	258	0	N/A	.	.
Total	83	£14,362					83	£11,266					51	£3,096		

3.5.4 Assessing change pre versus post-implementation of the perinatal mental health scorecard

When analysing the baseline and post-implementation data as two independent groups at two time points, no statistically significant increase in service was identified for the ‘past history of mental health problems (antenatal)’ ($p = 0.0931$), ‘past history of mental health problems (postnatal)’ ($p=0.917$), or ‘PND after birth’ ($p=0.331$) questions (see Table 14). There was, however, a statistically significant increase in service for the ‘maternal mood assessed (antenatal)’ ($p = 0.006$) and ‘maternal mood assessed (postnatal)’ ($p = 0.025$) questions of 12% and 2.5% at the mean value post-implementation, respectively (see Table 14). A significant change in reporting for the ‘receive listening visits’ question was identified ($p = 0.035$); however, this change was a significant decrease of 20% at the mean value. These results can be interpreted as suggesting that post-implementation (compared to pre-implementation) there was a statically significant increase of 12% and 0.1% in the percentage of mothers assessed antenatally or postnatally who were asked about past history of mental health problems, and a care history documented in the mother’s clinical record, respectively, for example.

Table 14: Regression results from assessing the change in service post-implementation by question

Question	Constant	Coefficient	Std. Error	95% CI Lower	95% CI Upper	p-value
Past history of mental health problems (antenatal)	0.104	.0573	.0316	-0.011	0.126	0.093
Maternal mood assessed (antenatal)	0.412	0.118	0.361	0.040	0.194	0.006*
Past history of mental health problems (postnatal)	0.095	-0.001	0.009	-0.021	0.019	0.917
Maternal mood assessed (postnatal)	0.625	.0245	0.010	0.004	0.046	0.025*
Receive listening visits	0.786	-0.196	0.083	-0.377	-0.016	0.035*
PND after birth’	0.013	0.011	0.011	-0.013	0.035	0.331

When analysing the baseline data against the change in reporting by month post-implementation, there is evidence to suggest that there may have been a time lag between the scorecard being implemented and a change in service based on the data reported for the ‘past history of mental health problems (antenatal)’ and ‘maternal mood assessed (antenatal)’ questions. For ‘past history of mental health problems (antenatal)’, a statistically significant increase in service was identified for the months of April ($p = 0.024$) and May ($p=0.003$) with an increase in service of 11% and 17% for those two months, respectively. For ‘maternal mood assessed (antenatal)’, a significant increase in service was identified for the months of March ($p = 0.002$), April ($p = 0.001$) and May ($p = 0.003$) with an increase in service of 19%, 20% and 18%, respectively. Although an overall significant increase in service was identified over the post-implementation time period for ‘Maternal mood assessed (antenatal)’, the change was not statistically significant for any specific month post-implementation. The reason for this result is because although there was a significant increase over the post-implementation period, this increase was only 2.5% at the mean value. Although this increase was relatively constant over the post-implementation time period (making the result significant as

presented in Table 14), this increase was not sufficient in any one particular month to make this result significant when doing a head-to-head comparison of any one month compared to the baseline data (see Table 15).

Table 15: Regression results from assessing service change post-implementation by question and month

Question	Constant (95% CI)	Month (2015)	Coefficient	95% CI Lower	95% CI Upper	p-value
Past history of mental health problems (antenatal)	0.104 (0.075 to 0.133)	Jan	-0.026	-0.121	0.069	0.558
		Feb	-0.011	-0.106	0.084	0.792
		Mar	0.036	-0.059	0.131	0.415
		Apr	0.113	0.018	0.208	0.024*
		May	0.174	0.079	0.269	0.003*
Maternal mood assessed (antenatal)	0.412 (0.383 to 0.441)	Jan	-0.039	-0.136	0.057	0.379
		Feb	0.069	-0.027	0.166	0.138
		Mar	0.189	0.093	0.286	0.002*
		Apr	0.197	0.100	0.293	0.001*
		May	0.175	0.079	0.272	0.003*
Past history of mental health problems (postnatal)	0.095 (0.082 to 0.108)	Jan	-0.012	-0.055	0.031	0.542
		Feb	-0.006	-0.049	0.037	0.757
		Mar	-0.011	-0.054	0.033	0.592
		Apr	0.014	-0.029	0.057	0.476
		May	0.010	-0.033	0.053	0.621
Maternal mood assessed (postnatal)	0.625 (0.610 to 0.639)	Jan	0.019	-0.030	0.068	0.396
		Feb	0.034	-0.015	0.083	0.155
		Mar	0.019	-0.030	0.068	0.409
		Apr	0.019	-0.031	0.068	0.414
		May	0.032	-0.017	0.081	0.172
Receive listening visits	0.786 (0.692 to 0.881)	Jan	-0.148	-0.462	0.166	0.316
		Feb	-0.155	-0.469	0.159	0.294
		Mar	-0.506	-0.820	-0.192	0.005*
		Apr	0.014	-0.300	0.328	0.924
		May	-0.186	-0.500	0.128	0.212
PND after birth	0.013 (0.001 to 0.025)	Jan	0.005	-0.035	0.044	0.79
		Feb	0.005	-0.035	0.044	0.793
		Mar	-0.013	-0.053	0.026	0.474
		Apr	0.055	0.015	0.094	0.012*
		May	0.004	-0.036	0.043	0.841

3.5.5 Literature search: economic benefit of outcome measurement use for perinatal mental health services and increased antenatal screening

The routine collection of outcome measures and quality of service indicators has gained momentum as part of the NHS's Patient Reported Outcome Measure (PROM) initiative, with the routine collection of PROMs being introduced into the NHS in 2009 (5). The basis for collecting routine outcome measures is that healthcare services aim to do more than avoid death and illness, or cure disease – healthcare services also aim to provide cost-effective, high quality and desirable services for the public, and it is these outcomes that are assessed through the use of routinely collected

outcome measures. The purpose of the perinatal mental health scorecard was to facilitate: (1) early identification of mental health problems and subsequent appropriate action; (2) improved quality and experience of the service; (3) improved mental health outcomes for the mothers and outcomes for children. Some of these facilitated changes have already been described in relation to the results from this analysis of a case study implementing the mental health scorecard in section 3.5.4 of this report. The evidence of achieving these and similar goals from the widespread use of outcome measurement in relation to mental health problems in practice, as identified by this literature search, has been mixed (for a summary of results, see Table 16).

For example, Gilbody et al (6) performed a systematic review to examine the effect of routinely administered psychiatric questionnaires on the recognition, management, and outcome of psychiatric disorders in non-psychiatric settings. They suggested that the routine measurement of outcome is costly and there is little evidence of benefit for improving psychosocial outcomes. Slade et al (7) performed a randomised controlled trial (RCT) using monthly postal questionnaires to record and then assess needs, quality of life and mental health problem severity within adult mental health patients. The intervention did not improve unmet need nor improve quality of life; however, the intervention was associated with reduced psychiatric inpatient admissions. Priebe et al (8) performed an RCT using a computer-mediated intervention to structure patient-clinician dialogue focusing on patient's need for care and quality of life in an attempt to improve patient outcome and service delivery. Structuring patient-clinician dialogue to focus on patients' views positively influenced quality of life, needs for care and treatment satisfaction. Junghan et al (9) used secondary longitudinal analysis to assess the impact of meeting previously unmet mental health needs on the therapeutic alliance between patients, from the perspective of both the patient and clinical staff. They found that patient-rated therapeutic alliance improved by focusing on patient-rated rather than staff-rated unmet need; that is, the patient-reported perspective (which can be assessed through the use of outcome measure like interventions) is important for assessing the therapeutic alliance and addressing unmet mental health need.

Table 16: Results from the literature search about the benefit from outcome measure use in mental health services and PND screening

Author (by publication year)	Study type	Aim and intervention	Overall conclusion: positives	Overall conclusion: negatives
Gilbody et al (2001)	Systematic review	Examine the effect of routinely administered psychiatric questionnaires on the recognition, management, and outcome of psychiatric disorders in non-psychiatric settings.	-	Routine measurement of outcome is costly. Little evidence of benefit for improving psychosocial outcomes.
Slade et al (2006)	RCT	Monthly postal questionnaires to record and then assess needs, quality of life and mental health problem severity within adult mental health patients	Associated with reduced psychiatric inpatient admissions	Did not improve unmet need nor improve quality of life
Priebe et al (2007)	RCT	Computer-mediated intervention to structure patient-clinician dialogue focusing on patient's need for care and quality of life in an attempt to improve patient outcome and service delivery	Positively influenced quality of life, needs for care and treatment satisfaction	-
Junghan et al (2007)	Secondary longitudinal analysis	Assess the impact of meeting previously unmet mental health needs on the therapeutic alliance between patients and clinicians, from the patient and clinician perspective.	Patient-rated Therapeutic alliance improved by focusing on patient rated rather than staff-rated unmet need	-
Hewitt & Gilbody (2009)	Systematic review	Evaluate the clinical and cost effectiveness of antenatal and postnatal identification of depressive symptoms.	Studies identified beneficial effects of using the EPDS to improve care.	No evidence available on cost-effectiveness of identifying PND.
Hewitt et al (2009)	Decision model	Evaluate the cost-effectiveness of screening for perinatal depression	-	Did not find perinatal screening to be cost-effective. Serious limitations in the model due to lack of data.
Bell (2014)	Decision model	Evaluate the cost-effectiveness of screening for perinatal depression taking into account long term benefits for the child.	-	Even accounting for benefits to the children up to 7 years there is no evidence for screening for PND being cost-effective.

An important aspect of the perinatal mental health scorecard was screening for PND (see also the results presented in section 3.5.4 of this report) and then those actions taken after screening had been completed (such as referral to other services). Prior to 2009 there was no evidence for the cost-effectiveness of screening for PND (10). As part of a *Health Technology Assessment*, Hewitt et al (3) developed a health economic model to assess the cost-effectiveness of screening for PND. They found that screening was not cost-effective – at an EPDS cut-off of 12, screening costs an additional £61 with a gain of 0.001 of a QALY per patient. This translates to a cost per QALY gained of £56,697 with a 2% chance it is a cost-effective strategy compared to no-screening. PND struggled to be cost-effective for two reasons: (1) the recommended treatment for PND is psychological therapy – an expensive treatment which is only just cost-effective compared to no intervention – as a result, screening needs to be cheap and efficient if it is to stand any chance of being cost-effective; (2) the model assumed that screening was not cheap and efficient as a large proportion of patients (13%) receive treatment even though they have no diagnosis of PND, due to the less than perfect specificity of EPDS as a screening tool for PND. The model also did not account for the positive future impact that treating PND might have on children.

Bell (11) developed a model to account for the future benefit to children of screening for and treating PND as part of a cost-effectiveness model similar to that of Hewitt et al (3). Screening for PND and treating those who screen positive for PND was not cost-effective even when future benefit to the children was taken into account because although some benefit could be seen at two years; by seven years there was no measurable difference for children of mothers treated for PND compared to those who were not.

3.5.6 Cost-effectiveness of the perinatal mental health scorecard

Inputs for the cost-effectiveness model are reported in Table 17 using the change in service results as reported in section 3.5.4 (see also Table 14) of this report or obtained directly from the perinatal mental health scorecard dataset, and the cost of implementing the scorecard as reported in section 3.5.2 (see also Table 13). Results of the analysis are reported in Table 18. The improved performance as a result of the perinatal mental health scorecard, i.e. an increase in the proportion of women screened for PND, was cost-effective across all analyses and scenarios assuming a threshold of £20,000 per QALY gained for cost-effectiveness. For post-natal and perinatal screening the model was cost-saving, saving £675 and £611 respectively per 1,400 pregnancies over one year and also resulted in a small increase of 0.18 QALYS compared to pre-implementation for both. The option that was least cost-effective is if women who are false positive on the EPDS (having a score higher than 12 but do not have PND) were referred to other services or receive a listening visit.

Table 17: Inputs and sources for decision tree cost-effectiveness model

Input variable	Value	Source
Annual incidence of PND	12.9%	Perinatal mental health scorecard dataset
% Screened – Before / After		
- Antenatal screening	41% / 53%	See Table 14
- Postnatal screening	63% / 65%	See Table 14
- Perinatal screening	62% / 64%	Perinatal mental health scorecard dataset
Percentage screen positive on EPDS and:		
- Referred for treatment	4%	Perinatal mental health scorecard dataset
- Receive listening visit Before/After	78% / 59%	See Table 14
Sensitivity of EPDS score >12	0.86	Hewitt et al (2009)
Specificity of EPDS score >12	0.87	Hewitt et al (2009)
Percentage PND identified routine practice	4% (0.5% of all patients)	Perinatal mental health scorecard dataset
Cost per patient screened with EPDS	£7.57	Hewitt et al (2009)
1 year cost of psychological therapy for PND	£792	Hewitt et al (2009)
1 year cost of listening visit	£947	Hewitt et al (2009)
Cost per patient of implementing scorecard	£2.05	Total cost of £14,362 (see Table 13) and assuming 1,400 patients (ante and post-natal) per month over 5 months
1 year QALY		All values from Hewitt et al (2009)
- no depression	0.86	
- depression – no referral or visit	0.7	
- depression – referral for treatment	0.748	
- depression – listening visit	0.75	

Table 18: Results of cost-effectiveness analysis – costs for 1 year per 1,400 pregnancies

Analysis	Costs			QALYs			ICER
	Before	After	Difference	Before	After	Difference	
Antenatal screening	£19,081	£22,440	£3,358	1183.7	1185.9	2.2	£1,515
Postnatal screening	£26,250	£25,574	-£675	1188.05	1188.23	0.18	Dominant
Perinatal screening	£25,924	£25,313	-£611	1187.85	1188.03	0.18	Dominant
(1a) 38% (5% of patients) identified in routine practice	£44,406	£42,823	-£1,583	1189.99	1189.11	0.12	Dominant
(1b) 12.9% (2% of patients) identified in routine practice	£30,816	£29,9487	-£868	1188.15	1188.31	0.17	Dominant
(1c) 100% of patients with PND (12.9% of all patients) identified in routine practice	£78,110	£74,752	-£3,357	1191.07	1191.08	0.01	Dominant
(2a) 10% of PND women referred after	£25,924	£25,649	-£275	1187.85	1188.06	0.21	Dominant
(2b) 50% of PND women referred after	£25,924	£27,888	£1,964	1187.85	1188.24	0.39	£4,972
(3) False positives on EPDS receive treatment	£163,591	£171,556	£7,965	1187.85	1188.25	0.40	£19,928
(4) % of patients that receive listening visits the same before and after (78%)	£25,924	£29,448	£3,524	1187.85	1188.25	0.4	£3,524
(5) Cut off of 16 used on the EPDS	£14,088	£15,944	£1,856	1185.12	1185.36	0.24	£7,618
(6a) Incidence of PND 5%	£12,194	£14,238	£2,044	1198.05	1198.15	0.1	£19,651
(6b) Incidence of PND 15%	£30,572	£29,047	-£1,524	1184.97	1185.16	0.18	Dominant

QALY – Quality adjusted life years

ICER – Incremental cost-effectiveness ratio or the additional cost of the perinatal mental health scorecard per QALY gained. An ICER < £20,000 is generally assess as the scorecard being more cost-effective than no scorecard.

Dominant – the scorecard costs less and results in more QALYs than no scorecard; all results in **bold** are dominant, as are the cost savings and QALY gains associated with these results.

3.6 Discussion

3.6.1 Improved performance and economic analysis of the perinatal mental health scorecard

Following implementation of the scorecard there was a significant increase in screening for depression both antenatal and postnatal, with the greatest increase seen in antenatal of 12 percentage points after the perinatal mental health scorecard was implemented.

The implementation of the scorecard appeared to reduce costs and increase QALYs for postnatal and perinatal screening, and was cost-effective at a threshold of £20,000 per QALY gained for antenatal screening. The sensitivity analyses, however, suggested that this may have been as a function of fewer listening visits rather than anything else, as costs increased significantly when the proportion of women who received listening visits increased. Listening visits do not perform favourably in regards to cost-effectiveness (they cost significantly more than providing nothing with only a small additional benefit). It is possible that cost-effectiveness of the scorecard may have been the result of improved screening and identification of women and hence more appropriate and cost-effective onward referral, but there is insufficient data to confirm this conclusion using the scorecard dataset.

The results of the model should be interpreted with caution, as it was based on limited data and evidence from a single site. Patient level data was not available so it was not possible to determine if:

- (a) women referred to other services were those that scored positive on EPDS;
- (b) whether women who were referred did not receive listening visits as the model assumed;
- (c) women who received listening visits screened positive on EPDS.

When these assumptions were tested as part of the model, improved performance on the scorecard appeared to be cost-effective but was approaching the £20,000 willingness-to-pay threshold. Note that, a higher percentage of women identified with PND as part of routine practice post-implementation in the model, compared to a lower percentage, has the unintuitive result of: (1) increasing the amount of money saved, whereas it would be expected that more people using the service would decrease the amount of money saved; and (2) reducing the QALY benefit, whereas more people being identified by the service would be expected to increase the QALY benefit. This unintuitive result is because as more women are screened using the EPDS there are more 'false negatives' (women with PND who screen negative for PND on the EPDS) who will then not receive treatment for PND. The counter point is, if a higher percentage of women are identified as part of routine practice pre-implementation (before the use of the perinatal mental health scorecard) fewer women are screened using the EPDS, but these women are actually more likely to receive treatment. To summarise, it is the assumed less-than-100% specificity of the EPDS measure for screening PND that creates this unintuitive result in the model. Therefore, this result is more likely an artificial result stemming from the design of the model rather than what may be seen in routine practice, and hence should be interpreted with caution.

3.6.2 Limitations of the perinatal mental health scorecard and the analysis for this report

Due to the lack of data that were obtained from the routine service systems, the analysis in this report was restricted to a case study which involved the data obtained from one site. Cross site

comparison of the service change at baseline and post-implementation of the scorecard would provide more complementary data, analysis and potential results to compare with the results presented in this report.

The literature search was to identify the potential benefits of outcome measure use for mental health services and screening for PND. This literature search was undertaken to provide an idea of how outcome measure use may or may not be beneficial when used for mental health services, as well as identifying if screening for PND has been deemed cost-effective based on existing empirical evidence. Although this literature search has identified some useful publications for descriptive purpose within this report, it should not be considered a comprehensive nor systematic literature review. Future research may want to focus on systematically identifying the benefits of outcome measure use for mental health services, although the PhD thesis by Bell (11) has covered most of the up-to-date evidence for PND screening.

No differentiation was made between the set-up and ongoing costs of the scorecard in this analysis, although through improved data recording this may be considered an area of interest for further research of this intervention. If the scorecard was to be rolled out across multiple services and sites, then it is worth taking into account the set-up and long term ongoing costs and time of implementing the scorecard from the NHS, service site and health visitor perspective.

3.7 Conclusion

The perinatal mental health scorecard used in one site showed a significant increase in screening for both antenatal and postnatal depression and was shown to be cost-effective in the modelled cost-effectiveness analysis. A lack of data obtained for the scorecard restricted this analysis to a case study and restricted the number of outcomes that could be assessed. These results should be considered exploratory based on the implementation of the scorecard as part of a pilot study – further analysis with a larger quantity and better quality data in relation to the perinatal mental health scorecard is required.

3.8 References

1. Bauer, A., Parsonage, M., Knapp, M., Lemmi, V., Adelaja, B. (2004). The costs of perinatal mental health problems. *Report from the Centre for Mental Health and London School of Economics*. Available from: <http://everyonesbusiness.org.uk/wp-content/uploads/2014/10/Embargoed-20th-Oct-Final-Economic-Report-costs-of-perinatal-mental-health-problems.pdf>. Accessed September 14th, 2015
2. Curtis, L. (2014). Unit costs of health and social care 2014. *Personal Social Services Research Unit (PSSRU), University of Kent, Canterbury*. Available from: <http://www.pssru.ac.uk/project-pages/unit-costs/2014/>
3. Hewitt, C.E., Gilbody, S.M., Brealey, S., Paulden, M., Palmer, S.,..., Richards, D. (2009). Methods to identify postnatal depression in primary care: an integrated evidence synthesis and value of information analysis. *Health Technology Assessment*; 13(36): 1-230.
4. NICE (2013). Guide to the methods of technology appraisal. National Institute for Health and Care Excellence: Guidance. Available from: <http://publications.nice.org.uk/guide-to-the-methods-of-technology-appraisal-2013-pmg9>
5. Devlin, N.J. and Appleby, J. (2010). Getting the most out of PROMs: putting health outcomes at the heart of NHS decision making. Available from: https://www.aqesss.qc.ca/docs/pdf/i-media/20100401/PROM_NHS.pdf. Accessed September 14th, 2015.
6. Gilbody, S.M, House, A.O., Sheldon, T.A. (2001). Routinely administered questionnaires for depression and anxiety: systematic review. *BMJ*; 322: 406-409
7. **Slade, M., McCrone, P., Kuipers, E., Leese, M., Cahill, S.,..., Thornicroft, G. (2006).** Use of standardised outcome measures in adult mental health services. *British Journal of Psychiatry*; 189: 330-336.
8. **Priebe, S., McCabe, R., Bullenkamp, J., Hansson, L., Lauber, C.,..., Wright, D.J. (2007).** Structured patient clinician communication and 1-year outcome in community mental healthcare. *British Journal of Psychiatry*; 191: 420-426.
9. Junghan, U.M., Leese, M., Priebe, S., Slade, M. (2007). Staff and patient perspectives on unmet need and therapeutic alliance in community mental health services. *British Journal of Psychiatry*; 191: 543-547.
10. Hewitt, C.E., and Gilbody, S.M. (2009). Is it clinically and cost effective to screen for postnatal depression: a systematic review of controlled clinical trials and economic evidence. *BJOG*; 116:1019-1027.
11. Bell, K.J. (2014). Should women be screened for postnatal depression? Exploring the effects of undiagnosed maternal mental health problems on child development. *PhD Thesis for the Department of Health Sciences, University of York*.
12. StataCorp. 2015. Stata Statistical Software: Release 14. *College Station, TX: StataCorp LP*. Statistical computer software.

4 Recommendations

Drawing on learning from the implementation and evaluation of this work, these are the recommendations for future work.

4.1 Implementation:

- Refine, upscale and evaluate the scorecard, embedding its use in routine practice to inform quality improvements and future commissioning of services to improve outcomes in the perinatal period for children and families
- Evaluate its effectiveness as a quality improvement tool for provider organisations to achieve the delivery of high quality, safe and effective services, and ensure its transferability to other organisations

4.2 Practice:

- Engage with other partners to ensure work is embedded to inform the development of clinical data systems to measure quality. This is especially important in the light of the Mayor of London's response to the recent report from the London Health commission, which highlights the need to address variation in quality of care for children and the need for action to improve outcomes

4.3 Future development work:

At a national level:

- Develop roll-out of the national training for the Parent Infant Interaction Observation Scale Tool (validated for use by health visitors within the Healthy Child Programme)
- Commission further economic modelling of the scorecard to allow commissioners and providers to see the cost per outcome achieved
- Scope other patient feedback tools better able to show change of patient reported experience measures over time

At a local level:

- Evaluate the use of the Scorecard Implementation Toolkit, which will enable providers to improve systems and methods of data recording and extraction that are essential for providing the ability to evaluate the current service provision against national guidelines for quality and effectiveness
- Encourage providers to subscribe to tools such as the BMJ quality tool, or IHI tools to enhance the reflection and learning, and continue to drive up the quality of practice through collaboration
- Encourage ownership for improvements at the 'coal-face' and not only at management/strategic levels

4.4 Policy:

- Develop a new scorecard for infant mental health, concentrating on maternal attachment and attunement. This need was highlighted in the recent report on Child

Mental health & Maltreatment: Building Great Britons (2015)¹, which emphasised that the parent-child attachment is intergenerational, and the costs implications to the public purse if we fail to take action on perinatal mental health & child maltreatment.

- Include fathers' emotional health and wellbeing at key stages along the perinatal mental health pathway
- Ensure inclusion of specialist health visitor role in each service to cater for perinatal and infant mental health
- Ensure inclusion of quality improvement expertise in the health visiting team
- Ensure the methodology of developing the scorecard is shared to enable scorecards to be used for other conditions
- Ensure testing and development of tools specifically tailored to different communities

4.5 Summary

Future testing and evaluation of the scorecard is necessary to measure the impact it has on outcomes for families and for perinatal mental health specifically. The findings suggest that these longer-term outcomes could be achieved when the necessary supports are in place to implement the scorecard successfully and to accurately track and measure changes over time.

1

<http://www.1001criticaldays.co.uk/~criticaldays/UserFiles/files/Building%20Great%20Britons%20Report%20%20APPG%20Conception%20to%20Age%20%20Wednesday%2025th%20February%202015%282%29.pdf>

5 Appendix A: Ethical Approval

Ethical approval for the evaluation was granted by NHS Health Research Authority, NRES Committee East of England Norfolk, REC reference number 14/EE/1266, IRAS project ID 162482. Letters of access to conduct data collection at each of the sites were granted by local R&D officers prior to the commencement of the evaluation.

6 Appendix B: Topic guide – HV focus groups

Value Scorecard Evaluation – Focus Group Schedule for Health Visitors – Version 1 – 5th December 2014.

Introduction:

Hello, my name is Helen, I am a researcher with The Anna Freud Centre.

Thank you all for coming today to talk about your experiences and views of the health visiting services. The purpose of today is to get your honest opinions about what works and what needs to be improved on in terms of the services offered by health visitors.

Consent: Firstly, I'd like to make sure that everyone understands what will happen today and what will happen to your information afterwards. You have all been given an information sheet that outlines what you are being asked to do for the focus group and what the purpose of the research is. You have all signed a consent form that means you understand what is in the information sheet and you agree to take part.

Even though you have signed the consent form and said you want to participate, you can still decide, at any point, that you don't want to take part any more. This won't have any negative impact on you or the services that you receive. If there are any questions that you don't want to answer, or any information that you don't want to share, that's fine, just say so and we can move on to someone else or a different question.

Confidentiality: Just to make everyone clear, whatever is said here today must remain strictly private and confidential. We need everyone to agree not to talk about what anyone said during the focus group to other people outside of the group and not to share the names or other details of anyone involved today.

When I am typing up the group responses I will give everyone a number (or individuals may choose their own pseudonym) and I won't be using anyone's real names so no one else will know what any individual has said. Anything that you say that might identify someone else, like a name, will be changed when it is being typed to keep it anonymous.

The only time I might have to tell someone about what we talk about today is if I think someone is in danger of being hurt, then I would have to do something to try and prevent that.

Audiotaping: So that I don't have to try and remember everything, or try to write down what everyone is saying, I'm going to use a tape recorder to record the group if that's okay with everyone. Afterwards, I will type up the discussion from the group, no names will be used with either the recording or the typed discussion. No one else will have access to the discussion except me.

General rules: Before we start I think it will be useful for us to agree on some general things so that the discussion can run smoothly. Firstly it is important that only one person talks at a time so that we can all hear what is being said. I've already mentioned the need to make sure that what is discussed here stays within the group and isn't talked about with other people outside of the group. Remember the questions will mostly be about your own experiences and opinions, there are no right or wrong answers to these, and we all should have respect for other people's opinions. Also, it is important for us to hear all sides of a story, the positive and the negative and while it is likely that some people will disagree on certain things we need to keep our language respectful.

1. I realise most of you probably already know each other, but if you wouldn't mind introducing yourselves for my benefit that would be great. Maybe if each person could tell me their name and something about yourself such as how long you have been a HV or what you did before becoming a HV?

2. If we start on a positive note, can you all tell me one thing that you like most about being a HV?

Prompts: feel that you're helping; interacting with mothers; babies; seeing a difference you made; knowing you are helping to keep mothers and babies healthy

3. Okay, so looking at the opposite side of the job, what do you think are the things that make it difficult for you to do your job or that you like least?

Prompts: lack of time; too much paperwork; language barriers; poor management

4. And, thinking specifically about mental health, what do you think are the main factors that affect women during the perinatal period's mental health?
5. What would you say are the main barriers to identifying and dealing with mental health problems in the women that you work with? What are the main facilitators?
6. What do you think is the best approach to addressing these factors?
7. Do you feel confident in identifying and/or addressing mental health concerns in women you see?

Prompts: more time; more training; including family; referral to other services

8. Do you feel that HVs are best situated to address mental health problems in women during the perinatal period, or should there be a different service available? Why or why not?
9. Do you have other supports or services available if you need them – e.g. perinatal mental health team etc.?

HAND OUT COPY OF SCORECARD HERE

10. Thinking now about the value scorecard, can you give me your first impressions of it?
11. What do you think about what's in there? What's missing, could be left out etc.?
12. How do you think the scorecard can be used to improve mental health services for women during the perinatal period?

Prompts: how would it affect services; changes in care; outcomes for mothers;

13. What do you think would be the main barriers to implementing the scorecard/QI projects?
14. What do you think would be the main facilitators of implementing the scorecard/QI projects?
15. Finally, if it was up to you, how would you change HV services to make them better?

7 Appendix C: Topic guide – service user’s focus group

Value Scorecard Evaluation – Focus Group Schedule for service users – Version 2 – 15th

September 2014.

Introduction:

Hello, my name is Helen, I am a researcher with The Anna Freud Centre.

Thank you all for coming today to talk about your experiences and views of the health visiting services. The purpose of today is to get your honest opinions about what works and what needs to be improved on in terms of the services offered by health visitors.

Consent: Firstly, I’d like to make sure that everyone understands what will happen today and what will happen to your information afterwards. You have all been given an information sheet that outlines what you are being asked to do for the focus group and what the purpose of the research is. You have all signed a consent form that means you understand what is in the information sheet and you agree to take part.

Even though you have signed the consent form and said you want to participate, you can still decide, at any point, that you don’t want to take part any more. This won’t have any negative impact on you or the services that you receive. If there are any questions that you don’t want to answer, or any information that you don’t want to share, that’s fine, just say so and we can move on to someone else or a different question.

Confidentiality: Just to make everyone clear, whatever is said here today must remain strictly private and confidential. We need everyone to agree not to talk about what anyone said during the focus group to other people outside of the group and not to share the names or other details of anyone involved today.

When I am typing up the group responses I will give everyone a number (or individuals may choose their own pseudonym) and I won’t be using anyone’s real names so no one else will know what any individual has said. Anything that you say that might identify someone else, like a name, will be changed when it is being typed to keep it anonymous.

The only time I might have to tell someone about what we talk about today is if I think someone is in danger of being hurt, then I would have to do something to try and prevent that.

Audiotaping: So that I don’t have to try and remember everything, or try to write down what everyone is saying, I’m going to use a tape recorder to record the group if that’s okay with everyone. Afterwards, I will type up the discussion from the group, no names will be used with either the recording or the typed discussion. No one else will have access to the discussion except me.

General rules: Before we start I think it will be useful for us to agree on some general things so that the discussion can run smoothly. Firstly it is important that only one person talks at a time so that we can all hear what is being said. I’ve already mentioned the need to make sure that what is discussed here stays within the group and isn’t talked about with other people outside of the group. Remember the questions will mostly be about your own experiences and opinions, there are no right or wrong answers to these, and we all should have respect for other people’s opinions. Also, it is important for us to hear all sides of a story, the positive and the negative and while it is likely that some people will disagree on certain things we need to keep our language respectful.

1. Let’s start with a quick round of introductions. Can each person tell us their name, how many children you have and how old they are?
2. If we can focus on your relationship with your HV for a moment, do you feel you have/had a good relationship in terms of trust, understanding, support, information sharing etc.? Why or why not?

3. What do you think is important to ensure a good relationship?
4. Thinking about your experiences with health visitors, can you tell me what you feel their role is in supporting women's mental wellbeing, emotional wellbeing? Through pregnancy and after childbirth?
5. Thinking about your most recent experiences with health visitors, do you think you would feel comfortable talking to them about your feelings or mood? Why or why not?

Prompts: enough time, paying attention to you, understanding your personal circumstances, showing empathy, offering information and support when you wanted it.

6. HVs in your area are introducing a system, which is called a value scorecard, to help them keep track of and record what they do, and the services they offer. If it was up to you, what would you change to make HV services better?
7. Health visitors sometimes offer extra support to women who are feeling low or depressed either while pregnant or after childbirth, for example with listening visits. Were you aware that they offer this as part of the service? Do you think you would feel comfortable asking for this support from **your** health visitor? Why or why not?
8. Did you feel that your health visitor prepared you enough (explained things enough) for how you would feel emotionally during pregnancy or after childbirth? Do you think this helped/didn't help you in terms of your mental wellbeing or emotional wellbeing?
 - a. If NO: what do you think would have been helpful to you?
 - b. If YES: what do you think was most helpful to you?
9. Is there anything else that you think is important for me to know about your HV and your emotional wellbeing that I haven't asked about?

8 Appendix D: Health visitor questionnaire

So that we can match your questionnaires without taking your name, please complete these details: **1st three letters of your postcode:** _____ **1st three letters of your mother's maiden name:** _____

This questionnaire asks you some questions about your working practices as they relate to women during the perinatal period and their mental health needs. Please respond openly and honestly. All questionnaires will remain anonymous, only aggregate survey responses will be reported and it will not be possible to identify individual participants from any reported findings.

Follow the instructions for each section below. Please try to answer all questions on this form.

Section A – About you

These questions ask you about yourself and your work history. We are interested in finding out if different types of staff (e.g. experienced vs new staff) have different opinions and ideas.

Give your answer by ticking the relevant box

1. What is your age range?
18 – 25
26 - 35
36 - 45
46 - 55
55+
 2. What is your gender?
Female Male
 3. What is the NHS trust that you normally work for (optional)

 4. How many hours per week do you normally work as a health visitor? _____
 5. How long have you been working as a health visitor? _____years _____months
 6. Have you ever received training specifically related to perinatal mental health?
Yes No
- If YES:**
7. When did this take place (approximate time is okay)? _____
 8. How long did the training last, in days? _____days total
 9. Was this mental health training delivered as part of your usual health visiting training?
Yes No

Section B – About your work

These questions ask about your average working week or month. Remember that all answers are anonymous so please try to be as honest as you can.

If you don't know an exact answer please give your nearest approximation.

1. In an average week how many women do you see as a health visitor (this includes ante and post natal visits, follow up interventions, clinic visits etc.) _____
2. On average, how often do you think women see the same health visitor (i.e. their named health visitor) at each visit up to 5 years post natal?

0% 1-25% 26-50% 51-75% 76-99% 100%

3. On average, how often do you assess a woman's emotional or mental health at each visit?

0% 1-25% 26-50% 51-75% 76-99% 100%

4. Do you use any of these tools/measures to assess mental or emotional health? (please tick all that apply).

Whooley questions	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Edinburgh Postnatal Depression Scale (EPDS)	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Patient Health Questionnaire (PHQ)	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Kessler 10	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Generalised Anxiety Disorder scale (GAD-7)	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Are there any other tools or measures that you use to assess the mental health status of ante or post natal women?	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
If YES: Can you list the tools/measures that you use?		<input type="checkbox"/>		<input type="checkbox"/>

5. On average how much time do you spend at each visit with a perinatal (ante or post natal) woman? _____ hours _____ minutes.
6. Can you outline what you **usually** do if you feel that a woman is experiencing a mental health problem? (e.g. follow up/extra visits, referral to other services, other assessments). Please describe the **most common** approach that you use.

Section C: You and your work

This section is designed to help us get a better idea of the types of things that health visitors accomplish in their day to day work. Please indicate how certain you are that you can do the things described below by writing the appropriate number in the space provided where **0** is **Cannot do at all**, **5** is **Moderately can do** and **10** is **Highly certain can do**.

Rate your degree of confidence by recording a number from 1 to 10 using the scale given below:

0	1	2	3	4	5	6	7	8	9	10
Cannot do at all					Moderately can do				Highly certain can do	

1. Initiate discussion with women about their mental health _____
2. Encourage women to talk about their feelings regarding pregnancy/baby _____
3. Encourage women to talk about their worries or anxieties _____
4. Recognise the risk factors of post natal depression _____
5. Recognise the risk factors of other perinatal mental health problems _____
6. Identify a mental illness in women during the perinatal period _____
7. Use and interpret recommended tools to identify mental illness _____
8. Offer the most appropriate type of support for mental health problems _____
9. Involve partners or other family as support when needed _____
10. Explain mental health to women so that they recognise when to ask for help _____
11. Reduce feelings of depression using listening visits or other approaches _____
12. Refer women to appropriate services only when necessary _____
13. Provide relevant information so that women can access other support _____
14. Encourage openness and honesty within your relationship with clients _____
15. Listen to and understand women's worries and anxieties _____
16. Work together with women to make decisions about health and well-being _____

Section D: Your thoughts about mental health

These questions ask you about your attitudes to pregnant women and mothers with mental health needs, in particular about postnatal depression (PND). Remember that all answers are anonymous so please try to be as honest as you can in your response. Please indicate your answer by writing the number that most closely fits how you feel where **1** is **very strongly disagree**, **5** is **neither agree nor disagree**, and **10** is **very strongly agree**.

Rate your feelings about each of the following statements according to the scale below:

0	1	2	3	4	5	6	7	8	9	10
Very strongly disagree					neither agree nor disagree					Very strongly agree

1. Women with PND are capable of being just as good at parenting as women with no mental health problems _____
2. Women with PND could do more to help themselves _____
3. I often feel uncomfortable when working with women with mental health problems _____
4. Women with PND can never recover enough to be a good parent _____
5. PND is an illness just like any other _____
6. PND affects the woman's family and those close to her _____
7. In general I feel that I can understand women with PND _____
8. Women with PND are usually a danger to their babies _____
9. I feel I know enough about the factors that put women at risk of PND to be able to effectively carry out my role as a HV with this group _____
10. Women suffering from PND often feel that they are a burden to their families _____
11. One of the main causes of PND is a lack of self discipline and will power _____
12. Women with PND are usually a danger to themselves _____

- 13. Women can recover from PND with the right types of treatment and support _____
- 14. I feel I have a clear idea of my responsibilities in helping women during the perinatal period with PND _____
- 15. I feel I am able to work with women with PND as effectively as with other women who don't have mental health problems _____
- 16. Women with PND usually feel that they are responsible for their problem _____
- 17. PND makes it more difficult for women to do day to day things _____

Section E: Perinatal Mental Health Value Scorecard

The value scorecard is being introduced to improve health visiting services to women during the perinatal period in relation to their mental health needs. We would like to know what you feel are **currently** the main challenges and facilitators in identifying and responding to mental health needs in women during the perinatal period. Remember that your answers are anonymous so please be as honest as you can. Feel free to add comments on ways that you think current services could be improved as they relate to mental health needs in women during the perinatal period.

What do you feel are the main challenges, as a health visitor, in addressing mental health needs in women during the perinatal period?

What do you feel facilitates good/appropriate care for women during the perinatal period with mental health needs, in your role as a health visitor?

Is there anything else that you think it is important for us to know about health visiting services and perinatal mental health that we haven't asked about already?

THANK YOU

9 Appendix E: Service user questionnaire development

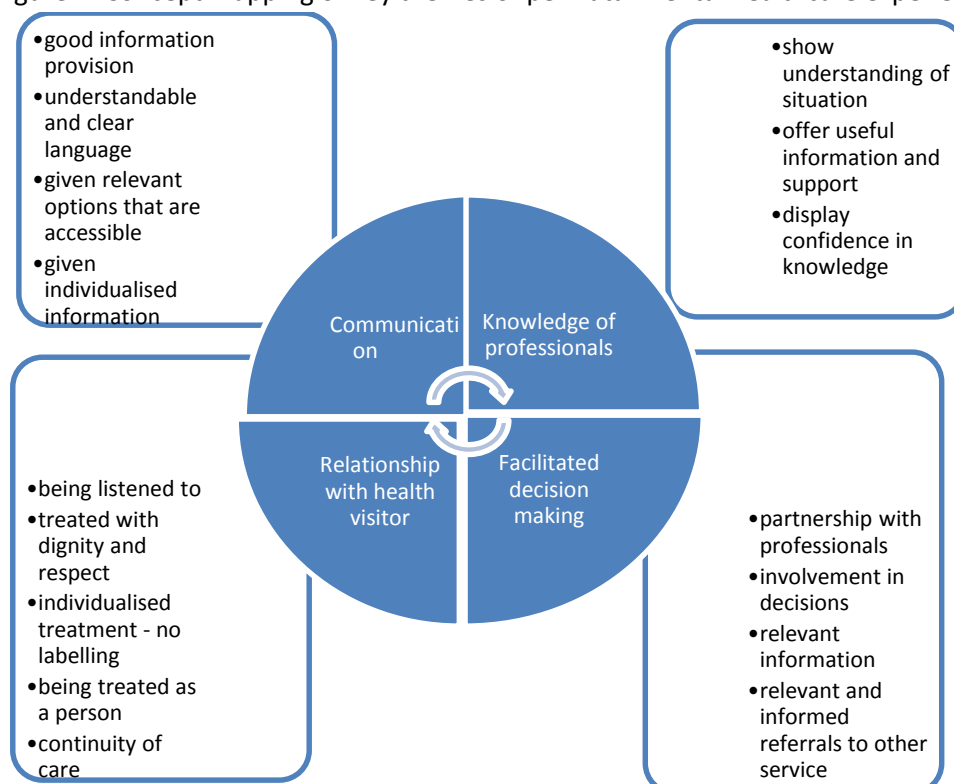
Development of a patient reported experience measure (PREM) for the perinatal mental health value scorecard

To ensure service users' views of their experiences with health visiting were incorporated into the perinatal mental health value scorecard, a series of focus groups were conducted with a range of mothers by the perinatal mental health value scorecard implementation team. From these focus groups, a list of 'I statements' were generated to reflect what mothers said were important areas of health visiting care. These statements were examined to assess how they could be incorporated into the scorecard and how they reflected mental healthcare provision to women in the perinatal period.

A search of existing service user questionnaires was first performed to determine if existing measures could be used for the purposes of the scorecard. However, no questionnaires were found that measured perinatal mental healthcare experience within the context of health visiting, although similar questionnaires were drawn on to develop the current PREM items alongside a review of other existing studies in this area.

From the 'I statement' and existing literature, four main themes were identified, outlined with key elements in Figure 1.

Figure 1. Concept mapping of key themes of perinatal mental healthcare experience.



Drawing primarily on the 'I statements' generated through service user focus groups, with reference to similar survey items and existing qualitative research within the area of health visiting and mental health, 11 items were developed for use in the PREM (see Table 1 below). The 'I

statements' were reframed so to better assess health visiting mental health services provision (e.g., making items more specific, avoid multiple concepts per item).

Table 1: Original 11 items developed for the PREM

1. My health visitor helped me to understand my feelings and emotions about being pregnant/becoming a mother/my baby
2. After contact with my health visitor, I know where I can get help if I'm feeling low or upset.
3. I feel that my health visitor really listened to me and gave me the time I needed to talk about how I was feeling
4. I feel that my health visitor treats me with respect
5. I feel comfortable talking about my feelings about my baby and my relationship with my health visitor
6. My health visitor always takes my worries and questions seriously
7. I think my health visitor has the right training to be able to help me if I am feeling upset, low or worried.
8. I feel that my health visitor understands how I am feeling and why
9. If I have a problem or if I am worried about how I am feeling I know my health visitor would be able to help me
10. I feel that my health visitor involves me in decisions about my care
11. I feel that my health visitor helped me to get the care that I needed.

Following discussion of these items with health visitor leads and with members of the scorecard advisory group, the PREM items were further refined and a final version of the questionnaire, containing 13 items in total with an open ended, qualitative comment section was piloted at three of the scorecard sites.

Thirty four questionnaires were returned from the piloting which showed no redundant items on examination and reasonable correlations between each item. This version was then deemed suitable for use in the stage of the scorecard at all sites. The items were presented with a 6 point Likert type response scale ranging from Strongly Agree to Strongly Disagree for each one. None of the items were reversed and higher scores would indicate more positive views of experience. The final set of items used in the questionnaire are available in Table 2.

Table 2: Final 13 items used in the PREM

1. My health visitor helps me to talk about my feelings and emotions about becoming an mother
2. My health visitor gives me information about local services and support
3. After contact with my health visitor, I know where I can get help if I'm feeling low or upset
4. I feel that my health visitor really listens to me and gives me the time I need
5. I feel that my health visitor treats me with respect
6. I feel comfortable talking to my health visitor about my feelings about my pregnancy/my baby
7. My health visitor helps me to talk about how the whole family is adjusting to the new baby
8. My health visitor always takes my worries and questions seriously
9. I think my health visitor has the right knowledge and skills to be able to help me if I am feeling upset, low or worried
10. I feel that my health visitor understands how I am feeling and why
11. If I have a problem or if I am worried about how I am feeling I know my health visitor would be able to help me
12. I feel that my health visitor works together with me in decisions about my health and wellbeing
13. I feel that my health visitor helps me to get the support that I need

The full list of 'I statements' generated through the original focus groups, the themes that they fall under and the PREMs items that reflect them are outlined in Table 3 below.

Table 3: Relationship between 'I statements', themes identified and individual PREMs items

I statement(s)	Theme(s)	PREM question(s)
<i>I am part of a community – friends and family</i>	Communication Relationship with health visitor	Q2 'My health visitor gives me information about local services and support'
<i>I have a sense of belonging and being a valued member of my family and community</i>		Q2 'My health visitor gives me information about local services and support'
<i>My health visitor helped me to understand and make use of local services that are relevant to my family</i>		Q2 'My health visitor gives me information about local services and support'
<i>My family is also involved in these decisions as much as I want them to be</i>	Facilitated decision making Communication	Q7 'My health visitor helps me to talk about how the whole

		family is adjusting to the new baby'
<i>I would like my family including my partner to understand my need</i>		Q7 'My health visitor helps me to talk about how the whole family is adjusting to the new baby'
<i>I was asked how I felt</i>	Relationship with health visitor Communication	Q1 'My health visitor helps me to talk about my feelings and emotions about becoming a mother'
<i>I have support that helps me live my life</i>	Knowledge of health visitor	Q4 'I feel that my HV really listens to me and gives me the time I need'
<i>I feel supported and understood by my health visitor</i>		Q5 'I feel that my HV treats me with respect' Q6 'I feel comfortable talking to my HV about my feelings about my pregnancy/baby'
<i>I am not left alone to make sense of information, I can meet/phone a professional who I need to ask more questions or discuss the options</i>		Q10 'I feel that my HV understands how I am feeling and why'
<i>My care plan is clearly entered in my record</i>	Communication	Based on data in scorecard A32 and A33
<i>I have regular reviews of my care and support plan</i>	Facilitated decision making	Based on data in scorecard A32 and A33
<i>I know my named health visitor</i>		Q.6 'I feel comfortable talking to my health visitor about my feelings and about my pregnancy/baby' Q11 'If I have a problem or if I am worried about how I am feeling I know my health visitor would be able to help me'
<i>I met my health visitor at 28 weeks</i>		Based on data in scorecard A12 and A13

<i>I know what is in my care plan and I know what to do if things change or go wrong</i>		Based on data in scorecard A12 and A13
<i>I have help to make informed choices if I need and want it</i>	Facilitated decision making	Q8 'My HV always takes my worries and questions seriously'
<i>After contact with the health visitor I feel confident and more knowledgeable about things I need to know</i>	Communication	Q9 'I feel my HV has the right knowledge and skills to be able to help me if I am feeling upset, low or worried'
<i>I have personal choice and control or influence over the decisions about me</i>	Knowledge of health visitor	Q11 'If I have a problem or if I am worried about how I am feeling I know my HV would be able to help me'
<i>Taken together my care and support help me live the life I want to the best of my ability</i>	Facilitated decision making	Q12 'I feel that my HV works together with me in decisions about my health and wellbeing'
<i>I can decide the kind of support I need and how to receive it</i>	Communication	Q13 'I feel that my HV helps me to get the support that I need'
<i>I have as much control of planning my care and support as I want</i>		Q3. After contact with my health visitor, I know where I can get help if I'm feeling low or upset
<i>I have the knowledge and I know how to get what I need</i>		Q3. After contact with my health visitor, I know where I can get help if I'm feeling low or upset

Bibliography

Research Articles

Appleton, J.V. & Cowley, S. (2008). Health visiting assessment – unpacking critical attributes in health visitor needs assessment practice: A case study. *International Journal of Nursing Studies*, 45, 232-245

Brealey, S.D., Hewitt, C., Green, J.M., Morrell, J. & Gilbody, S. (2010). Screening for postnatal depression – is it acceptable to women and healthcare professionals? A systematic review and meta-synthesis. *Journal of Reproductive and Infant Psychology*, 28(4), 328-344

Edge, D. (2011). *National perinatal mental health project report: Perinatal mental health of Black and Ethnic Minority women: A review of current provision in England, Scotland and Wales*. London: National Mental Health Development Unit.

Hogg, R., Kennedy, C., Gray, C. & Hanley, J. (2012). Supporting the case for 'progressive universalism' in health visiting: Scottish mothers and health visitors' perspectives on targeting and rationing health visiting services, with a focus on the Lothian Child Concern Model. *Journal of Clinical Nursing*, 22, 240-250

Surveys and questionnaires

NHS Care Quality Commission: Women's experience of maternity care. Available at

<http://www.nhssurveys.org/>

NHS Care Quality Commission: Service user questionnaire (mental health services). Available at

<http://www.nhssurveys.org/>

Supporting People/Merton Council: Service user questionnaire. Available at

www.merton.gov.uk/service_user_questionnaire-2.doc

Service User Questionnaire

What is this survey about?

This survey is about your experiences and feelings about the **health visiting** services you receive through your local NHS Trust. We are interested in your views of that experience whether it has been good or bad.

Your feedback is very important to help us to get a picture of the care you received and ways that we can improve it.

Who will see my answers?

A research team will look at your answers on this survey to help your local Trust in finding the areas that work well in health visiting and the areas that could be better. Please **do not** write your name or address anywhere on the survey. All your answers will be kept anonymous. It will not be possible for anyone to identify you in any report of the results.

Taking part in the survey is voluntary and you can stop at any point if you feel you don't want to finish the survey.

Completing the questionnaire

For each question please put an 'X' in the box that is closest to the answer you want to give. If you prefer not to answer a particular question then leave it blank. At the end of the questionnaire are some comment boxes where you can add in comments that you think are important for us to know about your experiences with the health visiting services. If you don't want to add anything else then leave these boxes blank.

Remember not to write your name in these boxes so that we can keep your answers anonymous.

Please try to make sure that you are thinking about **health visitors only** and not maternity or GP services when answering these questions.

You and your health visitor

These questions ask you for your thoughts and feelings about your experiences with **health visitors**. Please give your answer by putting an 'X' in the box that is closest to how you feel.

	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree	Don't know / remember
<i>1. My health visitor helps me to talk about my feelings and emotions about becoming a mother</i>						
<i>2. My health visitor gives me information about local services and support</i>						
<i>3. After contact with my health visitor, I know where I can get help if I'm feeling low or upset</i>						
<i>4. I feel that my health visitor really listens to me and gives me the time I need</i>						
<i>5. I feel that my health visitor treats me with respect</i>						
<i>6. I feel comfortable talking to my health visitor about my feelings about my pregnancy/my baby</i>						
<i>7. My health visitor helps me to talk about how the whole family is adjusting to the new baby</i>						
<i>8. My health visitor always takes my worries and questions seriously</i>						
<i>9. I think my health visitor has the right knowledge and skills to be able to help me if I am feeling upset, low or worried</i>						
<i>10. I feel that my health visitor understands how I am feeling and why</i>						
<i>11. If I have a problem or if I am worried about how I am feeling I know my health visitor would be able to help me</i>						
<i>12. I feel that my health visitor works together with me in decisions about my health and wellbeing</i>						

13. I feel that my health visitor helps me to get the support that I need

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Is there anything else that you think we should know about your experiences with health visitors that we haven't asked about?

1. What age are you? _____
2. Is this your 1st baby? YES NO
3. Are you..... Married Living with a partner
Single Separated/Divorced
Widowed
4. How would you describe your ethnic group? _____
5. Is this visit.... Ante natal visit New birth visit
6-12 week/12-16 week post natal visit 8-12 month visit ?
1. How old is your baby? _____ months

				Component		
				1		
1 my health visitor helps me to talk about my feelings and emotions about becoming a mother				.654		
2 my health visitor give me information about local services and support				.738		
3 After contact with my HV I know where I can get help if I'm feeling low or upset				.751		
4 I feel that my HV really listens to me and gives me the time I need				.817		
5 I feel that my HV treats me with respect				.735		
6 I feel comfortable talking to my HV about my feelings about my pregnancy/baby				.757		
7 My HV helps me to talk about how the whole family is adjusting to the new baby				.732		
8 My HV always takes my worries and questions seriously				.744		
9 I think my HV has the right knowledge and skills to be able to help me if I am feeling upset, low or worried				.830		
10 I feel that my HV understands how I'm feeling and why				.814		
11 If I have a problem or if I am worried about how I am feeling I know my HV would be able to help me				.840		
12 I feel that my HV works together with me in decisions about my health				.806		
Total Variance Explained						
Component	Initial Eigenvalues			Extracti	Squared Loadings	
	Total	% of Variance	Cumulative %		Total	Cumulative %
1	7.771	59.781	59.781	7.771	.81	59.781
2	.932	7.168	66.949			
3	.680	5.234	72.183			
4	.574	4.415	76.598			
5	.505	3.882	80.480			
6	.450	3.461	83.941			
7	.405	3.117	87.058			
8	.381	2.934	89.992			
9	.350	2.689	92.681			
10	.283	2.177	94.859			
11	.260	2.002	96.861			
12	.250	1.926	98.787			
13	.158	1.213	100.000			
Extraction Method: Principal Component Analysis. and well being						
13I feel that my HV helps me to get the support that I need				.813		

Extraction Method: Principal Component Analysis.
a. 1 components extracted.