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The economic case for increasing access to treatment for women with common mental health problems during the perinatal period

FINAL REPORT

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FOREWORD

Dr Alain Gregoire, MMHA President

Maternal Mental Health Alliance

The MMHA is a UK-wide charity and network of over 100 organisations, dedicated to ensuring women and families affected by perinatal mental problems have access to high-quality comprehensive care and support. We bring the maternal mental health community together and make change happen by combining the power of real-life experience with clinical and professional expertise

In 2014, The Maternal Mental Health Alliance (MMHA) commissioned independent research from the London School of Economics and Political Science and the Centre for Mental Health, which resulted in their ground-breaking report, *The Costs of Perinatal Mental Health Problems*.

A significant proportion of women develop a perinatal mental health problem during pregnancy or within the first years after having a baby. Without treatment, these problems can have a devastating impact on women and their families.

The findings from that report were clear: as well as human suffering, perinatal mental illnesses carry a total long-term cost to society, calculated conservatively, of more than £8.1 billion for each annual group of births in the UK.

Since that report was published, there has been an important investment in specialist services in all four nations. The resulting new services, rapidly and effectively developed by the NHS, are already transforming the healthcare and the lives of women with the most severe and complex maternal mental health problems and their babies.

To ensure all women and babies who need care have access to it, more action and more commitment is now urgently required. This includes the large number of women who suffer with common mental health problems like depression and anxiety at this critical time for them and their babies. For at least two decades the research evidence has told us clearly what needs to be done to help these women and their families, yet most of them, are very far from receiving the quality of care for their mental health that they can rightly expect for their physical health.

That is why the MMHA commissioned the Care Policy and Evaluation Centre, London School of Economics and Political Science to conduct new independent research to see whether increasing access to treatment for women with common mental health problems during pregnancy and after birth can help women and families, and be economically beneficial.

This new report demonstrates that universal services such as health visiting and maternity, have a clinically effective and cost-effective role in perinatal mental health care, identifying women in need or at risk, and facilitating access to or providing treatment as part of their routine work with women during and after pregnancy.

Importantly, the research finds that developing a model of service delivery in which mental and physical health care are integrated into the work of maternity and health visiting services generates nearly half a billion pounds of net benefit over a ten-year period. The investment included in the calculation involves training and staffing to ensure the skills, time and systems are in place to transform the care we provide to mothers and babies.

The findings of this report are very welcome. Women, their families, and professionals are united in calling for parity of care between mental and physical health at this time, and an end to the huge and costly, yet avoidable, suffering and disability caused by perinatal mental health problems.

This research provides important evidence guiding us towards a realistic, desirable and cost-effective solution that could improve the lives of so many in this generation and the next.

Society has waited a long time for an understanding of the critical importance of mental health, and of the earliest years of our lives, to our wellbeing and our future. Women, babies and families have already waited too long for us to do something with this powerful knowledge. Now we have a solution: let us not wait any longer to implement it.

CONTENTS

EXECUTIVE SUMMARY

Since 2015, the UK has substantially invested in addressing the mental health needs of women with perinatal mental health problems. Major funding has gone into specialist perinatal mental health services to address complex and severe mental health problems. Whilst these developments signal major progress, substantial gaps remain, in particular in supporting women early on before problems occur or get worse, including making appropriate referrals, as well as supporting women with ongoing problems that do not meet the threshold of severity to be able to access specialist perinatal mental health services.

Even before the COVID-19 pandemic, many women experienced problems accessing support from mental health services, as many of these services have long been struggling to meet demand. This demand has increased substantially during the pandemic and is expected to remain high. In addition, these services are typically not set up or appropriately resourced to offer mental health support that is specific to women's needs during the perinatal period. New service models are required. While some innovative models are already being delivered in the UK, they are not part of routinely funded provision.

This report presents evidence on the costs and economic consequences of different service options, focusing on evidence-based low-intensity treatment, if unmet common mental health problems are addressed within routine health services provided to women during the perinatal period. We measure the potential costs and economic consequences under what we call 'estimated current provision' and compare those against two options of service provision that are considered feasible to implement.

The two options we simulate in our analyses are models of provision that reflect the scaling-up of evidence-based interventions that are suggested by previous research and were selected after consultation with a range of experts in this field.

Addressing unmet needs through integrated service provision (Option 1):

The first option refers to provision through joined-up services in which health professionals in regular contact with women (such as midwives or health visitors), working in collaboration with primary mental health services, address unmet mental health needs. The option includes training midwives and health visitors to ask every woman in a skilled way about mental health, assess their mental health needs, and coordinate subsequent care. Under this option, these professionals, or equivalent staff within the service, would offer low-intensity treatment (in the same way as they would for physical health conditions).

Addressing unmet needs through standard service provision (Option 2):

The second option refers to provision in which health professionals in regular contact with women (such as midwives or health visitors) are not set up to provide integrated care with primary mental health services, and/or deliver low-intensity treatment themselves. Instead, unmet mental health needs that are not addressed by specialist perinatal mental health services are addressed by standard mental health services. In this scenario, health professionals, like health visitors or midwives, would ask women about their mental health, as well as assess and coordinate referrals to mental health services. *However, in contrast to Option 1, they would not be trained to do so. Staff in primary mental health services would then conduct another (clinical) assessment and provide low-intensity treatment.*

Our analyses concentrate on NHS costs and savings, as well as health-related quality of life impacts for women. The model covers the years 2015 to 2025. For each year, we estimate the number of women giving birth and the number with mental health problems. Based on those calculations, we model the number of women asked about their mental health, assessed, and requiring care coordination, as well as the number of women who access (cost-)effective treatment. We assign costs and economic consequences to different states and aggregate them.

Findings from the modelling suggest that investing in an integrated model of service provision (Option 1) is economically viable. In comparison with current provision, this option generates potential savings to the NHS of £52 million over a 10-year period. Additional health-related quality of life improvements are worth £437 million, so that total net benefit linked to this option is £490 million over 10 years. This is a hypothetical comparison since, in practice today, many health professionals already take on extra responsibilities for providing mental health support to women, but much of this work is currently not funded and no routine data are available at national level on how often this occurs.

In separate analysis, we estimated the additional workforce resources and budget required to deliver scaled-up provision of Option 1. Governments across the UK would need to invest £123.8 million (in 2021) to fund this model of care: £102 million in England, £4.6 million in Northern Ireland, £11.2 in Scotland and £6 million in Wales. The estimate includes the costs of additional specialist and non-specialist health visitors and midwives, as well as mental health practitioners.

Because current mental health service provision via midwives and health visitors varies widely across the UK, depending on local infrastructure and arrangements, integrated service provision might need to be implemented differently too. We provide some examples of what integrated service models of low-intensity treatment for women with common mental health problems and estimate their potential costs.

Data limitations make it impossible to analyse the involvement of general practice or voluntary and community sector (VCS) organisations. However, these services play important roles in supporting women with perinatal mental health problems and make important contributions to addressing needs, and would have roles within models of integrated provision, such as delivering low-intensity treatment. Another limitation is that we have not been able to take account of the likelihood that some women might need more intensive forms of treatment compared to the average, additional engagement before low-intensity treatment or follow-on support.

Whilst doing the analysis, we identified large gaps in research evidence: these limited the scope of our work. We highlight some of those gaps in this report and make recommendations for addressing them to support better resource planning. The findings of the report are therefore likely to be conservative.

In summary, there are clear economic benefits from training midwives and health visitors in perinatal mental health so that they can confidently and skilfully ask women about their mental health, assess their needs, and offer or arrange for psychological interventions. Scaling-up integrated provision across the UK is both desirable and viable from an economic perspective.

BACKGROUND

In 2014, the Care Policy and Evaluation Centre (formerly Personal Social Services Research Unit) at the London School of Economics and Political Science (LSE), together with the Centre for Mental Health, completed research commissioned by the Maternal Mental Health Alliance (MMHA) that was published as '*The Costs of Perinatal Mental Health Problems*. That report showed that the economic cost to society of not effectively treating perinatal mental illness far outweighs the cost of providing appropriate services. More than two-thirds of the total costs of £8.1 billion related to the long-term impact that perinatal mental health problems have on the child over the life course. This includes costs to health social care, educational and criminal justice systems linked adverse child development problems.

Since then, the English government has invested £365 million (up to 2021) as part of the Five Year Forward View and additional recurrent funding has been committed in the NHS Long-term Plan.[1] Investments in the other nations include: £4.7 million in Northern Ireland,[2] £52 million in Scotland,[3] and £2.8 million in Wales.[4] Except for Scotland, where the money is intended to be spent on access to perinatal and infant mental health services, most of the investment is for specialist perinatal mental health services, which provide care and treatment for women with severe or complex mental health needs, even though broader ambitions have been expressed.[5]

[1] NHS England (2021)

[2] Maternal Mental Health Alliance (2021a)

[3] Scottish Government (2019a)

[4] Welsh Government (2021)

[5] NHS England (2019)

Focussed attention and investment have not yet begun to address treatment for the less severe but much more common mental health problems during the perinatal period, some of which, if left untreated, might become severe. There is an important role for midwives, health visitors, professionals employed by general practice and voluntary and community sector organisations to identify problems early on, provide support, and – where needed - coordinate care with specialist perinatal and other mental health services. This includes ongoing support after women have been discharged from services. However, in most localities, these services are not resourced or staffed to carry out the activities required, or, for example, as recommended by the National Institute for Health and Care Excellence (NICE),[6] to support women's mental health. The COVID-19 pandemic has posed additional challenges to the mental health of pregnant women and those who have just given birth. This includes access to treatment, as well as quality and continuity of treatment.[7] Some of these challenges may occur in the longer term, too, and affect future birth cohorts.[8]

Given the unmet needs of women with common perinatal mental health problems, the Maternal Mental Health Alliance (MMHA) commissioned the Care Policy and Evaluation Centre (CPEC) at the London School of Economics and Political Science (LSE) to conduct a further study to assess the costs and economic consequences of current provision of treatment for common perinatal mental health problems, and to examine the case for investing in evidence-based interventions to address mental health needs not met by current government commitments in the four nations of the UK.

There are two main parts of the study, linked to these objectives:

PART 1: Costs and economic consequences linked to investment into mental health treatment for women with common mental health problems during the perinatal period. For the purposes of the report, we define common mental health problems as problems not requiring specialist perinatal mental health services.

PART 2: Estimated financial budget for an increase or shift in resources based on workforce required to deliver the economically most viable model of service provision.

We structure this report in the same way, first presenting the method and findings for Part 1 and then the method and findings for Part 2.

We then discuss limitations, provide suggestions for future research and routine data collection, and discuss the implications of our findings.

Finally, in Appendix C, we present examples of how **service models might look in practice** that are likely to be economically viable, and the costs of implementing such an approach.

[6] National Institute for Health and Care Excellence (2014)

[7] Maternal Mental Health Alliance (2021b)

[8] Kousoulis et al (2020)

PART 1 COSTS AND ECONOMIC CONSEQUENCES LINKED TO ADDITIONAL INVESTMENT TO SUPPORT WOMEN WITH COMMON MENTAL HEALTH PROBLEMS

1.1 METHOD

GENERAL APPROACH AND ASSUMPTIONS

The aim of this part of the study was to model the costs and economic consequences linked to current (and committed) provision of treatment and support and compare it with the costs and economic consequences linked to service provision options if unmet mental health needs were to be addressed with (cost-)effective treatment. This includes identifying activities required in the form of screening,[9] assessment and care coordination. The latter are activities that *need* to happen for women to access (cost-)effective treatment, and their costs should therefore be included in economic analysis.

We had to estimate unmet needs based on available data from specialist perinatal and adult mental health services. Therefore, 'current practice' was of a hypothetical nature since, in actual practice, a proportion of women will access treatment and support outside of mental health services, such as through general practitioners, health visitors, midwives or voluntary and community sector organisations. Thus, for modelling costs and economic consequences linked to current provision, a core assumption was that the mental

[9] The term screening is used in this report to describe the process by which women are asked about their mental health.

health needs of women, who do not access specialist perinatal mental health services or other mental health services as addressed by current provision, remain largely unmet. One purpose of this work was to assess this 'gap' in appropriately funded provision and the benefits of addressing (part of) the gap. To optimise applicability to real world settings, in the model a proportion of women were assumed to remain disengaged from treatment and with unmet needs.

Another challenge when estimating unmet needs was that there are currently not routinely collected, publicly available data with regards to the severities of mental health problems of women being treated in specialist perinatal and other mental health services. Likewise, it is not clear whether all women with mental health problems can access specialist perinatal mental health services. For simplicity, we assumed that the mental health needs of women with severe problems would be addressed by provision under current government plans and that unmet need referred to common mental health problems.

The modelling included costs to the NHS and quality-of-life improvements to women. We were unable to include benefits to the partners and children of women due to the lack of robust evidence. In addition, we were unable to include women's increased productivity linked to mental health improvements because this has not been evaluated for this population. Any benefits are therefore likely to be conservative estimates of the true overall impact.

Costs and consequences were projected for the period 2015 to 2025 in yearly intervals. We chose 2015 as the starting year because this is when investment into specialist perinatal mental health services started. We chose 2025 as the end year because, at the time of conducting the analysis, no new government commitments have been made beyond this date.[10] The price year for our calculations was 2020.

The information sources used for the modelling included data from evaluations of interventions, national statistics, and the *Unit Costs for Health and Social Care* published by the Personal Social Services Research Unit in Kent.[11] In areas where we did not have data, we made assumptions that were informed by personal communication with experts in the field.

All parameters, values and data sources are shown in Appendix A.

[10] An exception to this is newly commissioned Maternal Mental Health hubs in England as part of the commitment made in the NHS Long-term Plan. However, those are not set up and funded to provide treatment for common mental health problems.

[11] Curtis & Burns (2020)

IDENTIFYING EVIDENCE FOR INTERVENTIONS

First, we identified evidence from the UK for (cost-)effective interventions to support women with common mental health problems during the perinatal period. Our starting point was the 2014 guideline by NICE,[12] which recommends, in addition to antidepressants where appropriate, the provision of interventions like guided self-help, as a form of low-intensity treatment, and cognitive behavioural therapy (CBT) or interpersonal psychotherapy (IPT), as a form of high-intensity treatment, for women with common mental health problems. From our own searches of the literature and consultation with experts in the field, we identified evidence from the UK generated since the publication of the NICE guideline or that was not within its scope. This included evidence showing that guided self-help not only improves women's health-related quality of life, but leads to a small reduction in health care costs, and is cost-effective.[13] In addition, we identified evidence which showed that psychologically informed approaches provided by trained health visitors and midwives to women with (suspected) common mental health problems achieved similar (cost-)effectiveness to guided self-help.[14]

[12] National Institute for Health and Care Excellence (2014)

[13] Trevillion et al (2020)

[14] Brugha et al (2011), Brugha et al (2016), Morrel et al (2009), Morrel et al (2016)

In addition to achieving positive effects for women with suspected common mental health problems, evidence shows that these approaches improve health-related quality of life and wellbeing for women who do not have a specific mental health problem, and can even lead to reductions in health care costs.[15] Evidence is also emerging which shows that psychological interventions that target the mother-infant relationship can, in addition to improving maternal mental health outcomes, achieve positive effects in terms of child development and behaviour.[16] However, the evidence on this is mixed,[17] partly due to the methodological challenges in robustly establishing infant or child outcomes.

[15] Henderson et al (2018)

[16] Fonagy et al (2016), Stein et al (2018)

[17] Barlow et al (2015)

DEFINING SERVICE PROVISION OPTIONS TO MEET UNMET NEEDS

Next, based on this evidence, we defined service options for providing treatment to meet unmet needs of women with common mental health problems.

One option **(Option 1)** was that health services staff, such as midwives and health visitors, would be trained to screen for and assess mental health needs of women and provide or arrange for low-intensity treatment as part of integrated service models with primary mental health services. Discussions with experts from relevant professional bodies in these areas[18] indicated that the model would need to reflect differences between these two professions and the roles they could take on to support women with common mental health problems. This refers to: the number of times women would be asked about their mental health ('screening'), duration of the screening, as well as the salary band of the profession. (Midwives are more likely to be employed on a Band 7 whereas health visitors are more likely to be employed on a Band 6.) While it was considered feasible for health visitors to be trained to provide psychological interventions themselves and to view this as a natural extension to their role in addressing the various social, practical or emotional needs of women and their babies, for midwives this was considered not feasible. This was particularly the case given the focus of the role of midwives is to arrange various supports and care to ensure that women have a safe pregnancy and delivery. Furthermore, additional recruitment would be required if midwives were to provide low-intensity treatment, which would be challenging due to a current national shortage of midwives.

The focus of the model was on health visitors and midwives because they are the two professional groups that are in all UK nations and localities commissioned to support women during the perinatal period, and because previous research evidence referred to those professions. However, it is possible that similar positive effects could be achieved by staff groups from general practice or voluntary and community sector organisations.

Another option **(Option 2)** was that staff in primary mental health services would address the unmet mental health needs for women. This option refers to provision in which health professionals in regular contact with women, such as midwives or health visitors, *do not work with mental health services in integrated ways*. Health professionals, like health visitors or midwives, would ask women about their mental health, as well as assess and coordinate referrals to primary mental health services. However, in contrast to Option 1, they would not be trained to do so. Due to the lack of integration, staff in primary mental health services would then conduct another (clinical) assessment before providing low-intensity treatment.

[18] Experts included representatives of the Royal College of Midwives and Institute for Health Visiting.

ESTIMATING NUMBER OF WOMEN WITH COMMON MENTAL HEALTH PROBLEMS ACCESSING TREATMENT

Number of women with common mental health problems

In order to estimate the number of women with common mental health problems currently not accessing mental health support, we first estimated the number of women with mental health problems and compared this against the number of women accessing mental health services during the perinatal period. As mentioned, this assumed that women with severe mental health problems would already be accessing mental health services in the current service provision, and that unmet needs therefore referred to women with common mental health problems. Therefore, we estimated the number of women in the perinatal period for the years 2015 to 2025 based on the actual and projected number of live births. For the modelling, numbers of live births were taken to inform the calculations. Whilst this captures most women in the perinatal period, it is important to recognise that women who experience non-live births are at particular high risk of mental health problems and in need of treatment. Next, we estimated the number of women with mental health problems during the perinatal period by multiplying the number of women giving birth with the prevalence for mental disorders, which we took from the South London study.[19]

Number of women accessing mental health services

The next step was then to estimate the number of women accessing different types of mental health services, including primary, secondary and specialist perinatal mental health services.

We estimated access to *secondary and specialist perinatal mental health services* based on the proportion of women aged 15 and above accessing secondary or specialist perinatal mental health services during the perinatal period as available from NHS Digital for England based on linked Maternity Services Dataset (MSDS) to Mental Health Services Data Set (MHSDS). Data on proportions were available for the years 2018 and 2019. For secondary mental health services, we applied the proportion for 2018 (4.3%) to the years 2015 to 2018 and the proportion for 2019 (4.5%) to the years 2019 to 2025. As for specialist services, we applied the proportions (1.3% for 2018 and 2.1% for 2019) differently, assuming that provision of specialist services was at 0% before 2015 and taking into consideration a government target of 10% in 2024. We assumed a linear increase from 0% in 2015 to 1.3% in 2018 and a linear increase from 2.1% in 2019 to 10% in 2024.

We estimated numbers of women accessing primary mental health services as well as acute care by using data on access to different mental health services from the small but important South London study (23.6% for primary mental health services and 5.5% for inpatient care) and applying the relationships with secondary mental health services, therefore assuming that relationships between numbers of women accessing secondary versus primary mental health care (66%/34%) are comparable to other parts of the country and remain constant over time.

Number of women accessing treatment

For current provision, we estimated the number of women accessing low- and high-intensity treatments based on proportions of women accessing mental health services derived from data by the above-mentioned South London study. In the modelling, women accessed high-intensity treatments via primary, secondary and specialist perinatal mental health services and accessed low-intensity treatment via primary mental health services.[20] We therefore applied the proportions of women receiving high-intensity treatment among those accessing primary, secondary and specialist perinatal mental health services as per the South London study and multiplied this by the number of women accessing those services. A caveat was that the South London study did not report on high-intensity treatment provided by secondary mental health services. Instead,

[19] Howard et al (2018)

[20] Primary mental health service provision in England included provision offered by the Improving Access to the Psychological Therapies (IAPT) programme.

that study reported the proportion of women (23.1%) receiving counsellor and therapist-provided services: we assumed that this proportion was equivalent to the proportion of women receiving high-intensity (psychological) treatment (as opposed to psychiatric services). We applied the same proportion to specialist perinatal mental health services. For primary mental health services, 85% accessed high-intensity treatment and 15% accessed low-intensity treatment.

For the two other options of service provision, we estimated unmet needs of women by subtracting the number of women accessing any of the above mental health services from the number of women with mental health problems. We then assumed that all women, after considering the 20% who are disengaged for various reasons,[21] would be accessing low-intensity treatment.

Number of women screened, assessed, or receiving care coordination

In addition to estimating the number of women accessing treatment, we also estimated the number of women screened, assessed, or receiving care coordination. In line with national guidance on required appointments during the perinatal period,[22] it was assumed that women were asked about their mental health ten times by midwives and six times by health visitors. Whilst not included in the modelling, which referred to the role of midwives and health visitor, it is important to highlight that, in response to campaign efforts by the National Childbirth Trust, general practitioners are also now required to check on women's mental health 6 weeks after birth.

The number of assessments varied between the scenarios of service provision options. Under current provision, the number of women assumed to receive assessments was based on the number of women accessing mental health services because it was assumed that all women who accessed mental health services had received an initial assessment by their midwife or health visitor, as well as a clinical assessment by a general practitioner or psychologist.

For the scenario in which unmet needs were addressed through integrated service provision **(Option 1)**, it was assumed that all women who had mental health problems would receive an assessment conducted by a midwife or health visitor.[23] No further clinical assessment was required in this model and women were assumed to directly access low-intensity treatment.

For the scenario in which unmet needs were addressed through standard service provision **(Option 2)**, it was assumed that women were referred to primary mental health services for a clinical assessment before being offered low-intensity treatment.

Whilst it is possible that additional assessments are conducted by midwives and health visitors for women who do not have a mental health problem and clinical assessments for women who then drop out, we were unable to quantify the numbers concerned.

Estimating costs

We estimated costs linked to screening, assessments, and care coordination activities, as well as the provision of low- and high-intensity treatments, by applying unit costs and durations to the number of women receiving activities and interventions. It was assumed that all activities and interventions were provided by a Band 6 nurse, and a respective unit cost for face-to-face time was applied. For Option 1, a slightly higher unit cost was applied, which reflected the costs for training midwives and health visitors in applying psychologically informed approaches to their practice. For the duration of screening, it was assumed that these initial questions asked about mental health would, on average, take 5 minutes.[24] For women with mental health problems

[21] Expert consultation.

[22] National Institute for Health and Care Excellence (2014), Public Health England (2016)

[23] For simplicity, it was assumed that women's mental health problems were correctly identified during one of their screenings.

[24] Discussion with experts from the Institute for Health Visiting and Royal College of Midwives; according to NICE (2014), this screening process should involve using tools like Whooley questions as part of a general discussion about a woman's mental health and wellbeing.

this was then assumed to be followed by additional questions taking another 10 minutes (altogether 15 minutes),[25] and for the 10% of women who received care coordination another 20 minutes (altogether 35 minutes).

Cost for a clinical assessment was based on an average duration of 12 minutes[26] and unit cost of a clinician's (such a GP or a psychologist) face-to-face time. For costing low-intensity treatment, we applied the costs for providing nine sessions lasting 30 minutes each.[27] For current provision and Option 2, in which unmet needs were addressed by primary mental health services, costs for low-intensity treatment reflected provision by a Band 5 nurse (wellbeing practitioner), whereas for Option 1, we assumed provision by a Band 6 nurse. The costs for high-intensity treatment (£1,548) were taken from Radhakrishnan et al (2013),[28] who measured the costs of high-intensity treatment courses across five localities in England.

The parameter values that informed the calculations can be found in Appendix A.

[25] Discussion with experts from the Institute for Health Visiting and Royal College of Midwives; according to NICE (2014), this includes considering the use of tools like the Edinburgh Postnatal Depression Scale (EPDS), the Patient Health Questionnaire (PHQ-9) or Generalized Anxiety Disorder scale (GAD-7).

[26] National Institute for Health and Care Excellence (2014)

[27] This reflects a course of guided self-help.

[28] Radhakrishnan et al (2013)

Estimating economic consequences

Whilst there are many economic consequences linked to treating women's mental health problems, including positive impacts on partners and children, we only included impacts for which evidence is strong: improvements in women's health-related quality of life and reductions in health care costs. Improvement in health-related quality of life was measured in quality-adjusted life years (QALYs)[29] gained.

More specifically, for scenarios reflecting current provision and meeting unmet needs through standard provision **(Option 2)**, economic impacts referred to women's health-related quality of life improvements and reductions in healthcare costs linked to low- and high-intensity treatment.

For integrated service provision **(Option 1)**, this included additional health-related quality of life improvements and reductions in health care costs for women without recognised mental health problems. This was based on evidence that women not at risk of mental health problems benefit from health visitors and midwifes who have been trained to skilfully ask about and recognise mental health problems.

[29] The quality-adjusted life year (QALY) is a measure of disease burden that includes both quality and quantity of life lived. It is used in economic evaluations to assess the value of interventions. One QALY refers to one year of life lived in perfect health. Death has a QALY of 0. A year of less than perfect health has a QALY between 0 and 1.

1.2 FINDINGS

Tables 1 to 4 show the results of the analysis for the two service provision options compared with estimated current provision. They present the estimated total costs as well as total gains in quality-of-life improvements for women during the perinatal period in the UK. For this purpose, quality-of-life improvements, measured in QALYs gained, [30] [31] were transformed into benefits by multiplying them by an assumed value of £20,000 per QALY, which is the lower value of the range (£20,000 to £30,000) commonly used by NICE as the amount worth paying for a year in full health (QALY of 1). Net benefits were then derived by subtracting costs from benefits. In addition to presenting absolute values linked to service provisions, the Tables show the estimates of the *additional* costs and benefits of meeting unmet needs through integrated service provision and standard (non-integrated) service provision

[30] National Institute for Health and Care Excellence (2012)

[31] NHS Scotland (no date)

in comparison with costs and benefits linked to current provision.

The findings indicate that, through investing in integrated services provision (Option 1), a net benefit can be achieved relative to provision under current arrangements. The net benefit is due to a higher proportion of women accessing (cost-)effective treatment.

Investing in Option 2, in which unmet needs are addressed through standard provision (i.e. primary mental health services) is not generating a net benefit.

The net benefit of investing into Option 1 in comparison with current provision is estimated at approximately £41 million for the UK in 2015, growing to £45 million in 2020 and £55 million in 2025. The net present benefit value was £490 million over the 10-year period.[32] While the large proportion of net benefit refers to quality-of-life improvement, a proportion refers to cost reductions in Tables 2, 3 and 4. Over the 10 years there is an estimated cost reduction of £52 million linked to reductions in clinical assessments and healthcare use.

In additional, alternative analysis, we investigated the impact of a lower proportion of women accessing specialist perinatal mental health services in Wales, Scotland, and Northern Ireland. The impact on findings was small. For example, when we assumed that the proportion was 0% until 2021 and then increased to 5% by 2024,[33] the overall net benefit for the years 2015 to 2025 changed to approximately £483 million.

Due to lack of data, we were unable to estimate the full benefits of specialist perinatal mental health services or the benefits for women with severe mental health problems who do not receive high-intensity treatment (which might not be a suitable treatment for them). In addition, it is possible that we have underestimated the number accessing low- and high-intensity treatment in current service provision as data on actual provision do not exist and we had to make assumptions to derive those estimates. Because some of the costs are included for this population, such as the costs of identifying and assessing mental health problems and providing care coordination, it is likely that current provision and alternative scenarios generate higher benefits than simulated in this model. This is especially likely since we were only able to include short-term benefits for mothers and none of the long-term positive impacts for mothers and children. Our modelling highlighted important data gaps. In the absence of better data, our model therefore provides only exploratory insights.

[32] Discounting was applied as follows: Costs and QALYs that occurred after 2021 were discounted to 2021 using a 3.5% discount rate.

[33] We assumed a linear increase.

TABLE 1: FINDINGS FOR 2015

	Absolute values				Costs/benefits of service provision to meet unmet needs in relation to current service provision			
	Costs (£)	Benefit (QALYs)	Benefit (£)	Net cost/ benefit (£)	Costs (£)	Benefit (QALYs)	Benefit (£)	Net cost/ benefit (£)
Current provision: Unmet needs	85,919,950	1,054	21,072,640	64,847,310 COST	–	–	–	–
Option 1: Needs met by integrated service provision	94,438,290	3,505	70,102,460	24,335,830 COST	8,518,340	2,451	49,029,820	40,511,480 BENEFIT
Option 2: Needs met by primary mental health services	144,209,700	2,371	47,414,320	96,795,380 COST	58,289,750	1,371	26,341,680	31,948,070 COST

TABLE 2: FINDINGS FOR 2020

	Absolute values				Costs/benefits of service provision to meet unmet needs in relation to current service provision			
	Costs (£)	Benefit (QALYs)	Benefit (£)	Net cost/ benefit (£)	Costs (£)	Benefit (QALYs)	Benefit (£)	Net cost/ benefit (£)
Current provision: Unmet needs	94,112,390	1,098	21,955,490	72,156,910 COST	–	–	–	–
Option 1: Needs met by integrated service provision	90,196,370	3,143	62,859,660	27,336,710 COST	−3,916,020 (reduction)	2,045	40,904,170	44,820,193 BENEFIT
Option 2: Needs met by primary mental health services	137,541,130	2,084	41,683,350	95,857,780 COST	43,428,740	986	19,727,860	23,700,875 COST

TABLE 3: FINDINGS FOR 2025

	Absolute values				Costs/benefits of service provision to meet unmet needs in relation to current service provision			
	Costs (£)	Benefit (QALYs)	Benefit (£)	Net cost/ benefit (£)	Costs (£)	Benefit (QALYs)	Benefit (£)	Net cost/ benefit (£)
Current provision: Unmet needs	111,309,460	1,085	21,694,100	89,615,360 COST	–	–	–	–
Option 1: Needs met by integrated service provision	89,853,220	2,743	54,865,210	34,988,010 COST	−21,456,230 (reduction)	1,659	33,171,110	54,627,350 BENEFIT
Option 2: Needs met by primary mental health services	137,974,850	1,697	33,941,020	104,033,830 COST	26,665,390	612	12,246,920	14,418,470C COST

TABLE 4: FINDINGS FOR 2015 TO 2025, DISCOUNTED

	Absolute values				Costs/benefits of service provision to meet unmet needs in relation to current service provision			
	Costs (£)	Benefit (QALYs)	Benefit (£)	Net cost/ benefit (£)	Costs (£)	Benefit (QALYs)	Benefit (£)	Net cost/ benefit (£)
Current provision: Unmet needs	1,020,315,730	11,389	227,786,200	792,529,530 COST	–	–	–	–
Option 1: Needs met by integrated service provision	968,134,850	33,260	665,192,890	302,941,960 COST	−52,180,880 (reduction)	21,870	437,406,680	489,587,570 BENEFIT
Option 2: Needs met by primary mental health services	1,483,409,950	21,845	436,905,650	1,046,504,300 COST	463,094,220	10,456	209,119,450	253,974,770 COST

Next, we present the methods and findings for the financial analysis, which set out the workforce and budget required if governments were to decide to invest in the integrated service provision.

PART 2 ANALYSIS OF WORKFORCE AND BUDGET REQUIRED TO DELIVER INTEGRATED SERVICE PROVISION

2.1 METHOD

GENERAL APPROACH

A budget impact analysis was conducted to understand what the UK governments would need to invest to support integrated service provision to meet the needs of women with common mental health problems. We discussed required inputs for the analysis with experts from the Institute of Health Visiting and the Royal College of Midwives to define workforce requirements, including staff numbers, salaries and types of training approaches and costs. For this report, we present what would be the required budget if midwives, health visitors and staff employed by primary mental health services were fully resourced to carry out this care. However, our calculations assume that midwives and health visitors (and other staff) are available in sufficient numbers and funded to pursue their regular activities too. In other words, our estimates do not consider existing staff shortages or future recruitment challenges.

We considered three workforce changes in the analysis. First, we included the additional full-time equivalents required for midwives and health visitors to provide screening, assessment, and care coordination. This referred to 'regular' midwives and health visitors, i.e. those who are not specialised in perinatal mental health. In addition, we calculated full-time

equivalents required to provide low-intensity treatment. For this, we assumed that low-intensity treatment is provided either by health visitors or mental health practitioners. As mentioned in Part 1, based on consultation with experts, midwives are not assumed to provide low-intensity treatment. Instead, it was assumed that midwives would work closely with mental health practitioners to provide a joined-up service which offered low-intensity treatment delivered by the primary mental health practitioners. Examples of how service models might be configured in practice and their costs are provided in the Appendix C. Additional staffing time, measured in full-time equivalents, could mean additional employment of staff or extended contracts for existing staff to reflect additional hours.

Next, we calculated the costs for training health visitors and midwives so they can deliver mental health screening, assessment and care coordination, as well as costs for training health visitors and mental health practitioners so they are able to provide low-intensity treatment. We assumed that training was provided by specialist perinatal mental health midwifery and health visiting staff.

Finally, we calculated the budget required to employ additional specialist perinatal mental health visitors and midwives. These staff were considered an essential part of integrated service provision since they provide enhanced mental health and clinical leadership roles, and have educational responsibilities, including training and supervision of non-specialist staff.

We produced estimates for each of the UK nations, but due to a current lack of data in the devolved nations, our estimates for Northern Ireland, Scotland and Wales were based primarily on data from England and we then had to assume transferability across to the other nations. The estimated time spent on additional activities (screening, assessment, care coordination) was taken from the modelling (Part 1) and translated in full-time equivalents and headcounts. The estimated time spent on screening was based on ten sessions (0.5 minutes each) for midwives and six sessions (5 minutes each) for health visitors multiplied by the total number of women screened. The estimated time spent on initial assessment was 10 minutes multiplied by the total number of women with mental health problems. We assumed that those women with moderate to severe needs (about 10% of women with mental health problems) received care coordination (20 minutes). Finally, the estimated time spent on psychological interventions was given by a total of nine sessions (30 minutes each) multiplied by the number of women with mental health problems accessing the interventions.

The timeline considered in this analysis covered the period 2021 to 2025. Mean annual basic pay per full-time midwife and health visitor was extracted from Curtis et al (2020). The price year for our calculations was 2020.

BUDGET FOR EMPLOYING NEW STAFF

Non-specialist midwives and health visitors for screening, assessment, and care coordination

Staff time referred to the time that health visitors and midwives would spend with women to provide screening, assessment and care coordination. We transformed the overall number of hours per year, both direct and indirect time,[34] into the number of working days. This was based on a working time of 42.6 weeks (1,599 hours) per year and 37.5 hours per week.[35] We calculated costs based on an assumption that health visitors and midwives were employed on Band 6. Full-time equivalents were then multiplied by mean annual basic pay per full-time for midwives and health visitors on Band 6. It was assumed that the time staff spent on screening, initial assessment and care coordination was equally distributed between health visitors and midwives.

In additional, alternative analysis we calculated the full-time equivalents and budget required if health visitors and

[34] In the model, we assumed every hour of direct (= face-to-face) time requires one hour of indirect time. Indirect time referred to work required to prepare sessions with women, pursue administrative tasks or other job responsibilities.

[35] Curtis and Burns (2020)

midwives were employed on Band 7. This was done to reflect variations in employment of staff on Band 6 or 7 between nations, which was also different for the two professional groups.[36]

Non-specialist health visitor or other staff for providing psychological interventions

We calculated the time required for staff to provide psychological interventions. This could refer to health visitors or mental health practitioners employed on Band 6. Additional full-time equivalents employed for providing psychological interventions were then multiplied by mean annual basic pay per full-time staff member on Band 6. It was assumed that the time that staff spent on providing low-intensity treatment was equally distributed between health visitors and midwives.

In additional, alternative analysis we calculated the full-time equivalents and budget required if health visitors and midwives were employed on Band 7.

[36] Health visitors are more likely to be employed on Band 6 and midwives are more likely to be employed on Band 7.

Specialist health visitors and midwives

We estimated the gap between the number of health visitors and midwives specialised in perinatal mental health currently employed and the number needed to deliver integrated service provision. To estimate currently employed specialist staff, we used data from the Benchmarking Network for England, [37] from the Maternal Mental Health Alliance for Northern Ireland,[38] from the Scottish Government for Scotland, [39] and from NSPCC Wales for Wales.[40] To estimate the number of specialist staff needed to provide integrated service provision, we assumed, based on discussion with experts from the Royal College of Midwives and Institute for Health Visiting, that one health visitor and two midwives were needed per locality. Figures are shown in Table 5.

To assign budgets, we assumed salary bands based on data[41] and discussions

[37] Benchmarking Network (2017)

[38] Maternal Mental Health Alliance (2020)

[39] Scottish Government (2019b)

[40] NSPCC Wales (2019)

[41] Benchmarking Network (2017)

TABLE 5: ADDITIONAL SPECIALIST MIDWIVES AND HEALTH VISITORS REQUIRED FOR SCALED-UP INTEGRATED SERVICE PROVISION, IN FULL-TIME EQUIVALENT (FTES)

	Current staff	Staff required for scaled-up integrated provision (FTE)	Additional staff for scaled-up integrated provision (FTE)
HEALTH VISITORS SPECIALISED IN PERINATAL MENTAL HEALTH			
England	60.6	149.0	88.4
N Ireland	0	5.0	5.0
Scotland	0	14.0	14.0
Wales	1.0	7.0	6.0
MIDWIVES SPECIALISED IN PERINATAL MENTAL HEALTH			
England	233.2	300.0	66.8
N Ireland	0	10.0	10.0
Scotland	3.0	28.0	25.0
WALES	4.0	14.0	10.0

with colleagues from Royal College of Midwives and Institute of Health Visiting. For England, we estimated the following: for specialist midwives, we estimated 80% are currently employed on Band 7 and 20% on Band 8a; and for specialist health visitors, we estimated 100% are employed on Band 7. Those proportions were considered appropriate for delivering integrated service provision. The same proportions applied for Northern Ireland, Scotland, and Wales, although, for Scotland, we estimated that health visitors needed to be on Band 8a for the integrated service provision.

In additional sensitivity analysis, we estimated costs when all midwives and health visitors specialised in perinatal mental health would be employed on Band 8a. According to our experts, this would be the ideal option to ensure the optimal quality mental health support.

BUDGET FOR TRAINING

Midwives, health visitors and mental health practitioners need to be trained to provide integrated service provision. We calculated the cost of a training programme that was assumed to take place in-person over the course of three days and to include two separate modules: one dedicated to screening, initial assessment, and care coordination (2 days), followed by another dedicated to psychological interventions addressing women's (infant's) needs during the perinatal period (1 day). We assumed that relevant staff would be available for the respective parts of the programme. We assumed a training approach referred to as the champions' train-the-trainer model, which is delivered by the Institute of Health Visiting. This cascading model assumes that staff who have been trained provide training to other staff in their localities who have not yet been trained. We assumed that the first group of staff would be trained by specialist perinatal mental health midwifery and heath visiting staff. All subsequent groups would then be trained by non-specialist staff. Although this may underestimate the budget for training, for simplicity, we assumed that existing midwives and health visitors had already received sufficient training and that only new staff needed to be trained. We conducted the analysis assuming that midwives, health visitors and mental health practitioners were employed on Band 6. Again, we did additional, alternative analysis assuming they were employed on Band 7.

Based on the data provided by the Institute of Health Visiting on the train-the-trainer model for the health visiting champions and other similar experiences, we estimated that training cost per trainee was £800. This included costs for training material, venue hiring, refreshments and transport.

We calculated the number of health visitors and midwives (and other staff) that needed to undertake training based on the full-time equivalents calculated above. For this, we transformed the additional full-time equivalents into additional headcounts using a standard ratio for headcount to full-time equivalent of 1:1.16.[42]

The estimated additional headcounts to be trained on additional activities (screening, assessment, care coordination) were calculated from the staff time derived from the modelling (Part 1). It was assumed that this provided sufficient capacity for the midwifery and health visiting staff to roll out the training locally to all other colleagues. For simplicity, we only calculated the costs linked to one-off training. In actual practice, refresher trainings might need to be provided.

[42] NHS Digital (2020/2021)

2.2 FINDINGS

Table 6 presents the number of midwifes, health visitors and mental health practitioners required to scale up integrated provision, in full-time equivalents, per nation and for the UK as a whole. Estimates include full-time equivalents for specialist and non-specialist health visitors and midwives.

The number of non-specialist midwives and health visitors as well as mental health practitioners required to scale up integrated provision, in full-time equivalents, per 1,000 births is presented in the Appendix B (Graph B1).

TABLE 6: NUMBER OF FULL-TIME EQUIVALENTS NEEDED TO SCALE UP INTEGRATED PROVISION

	England (FTE)	N Ireland (FTE)	Scotland (FTE)	Wales (FTE)	UK (FTE)
Midwives	268	17	42	20	347
Health visitors	754	29	70	39	891
Mental health practitioners	258	10	22	13	302

Table 7 presents the budgets for employing additional specialist and non-specialist staff, including midwives, health visitors and mental health practitioners. The budgets were calculated by assigning the annual costs for health visitors, midwives and mental health practitioners to the number of full-time equivalents required to provide the model of integrated service provision. Because we estimated the number of full-time equivalents required to deliver integrated services based on their face-to-face activities, we applied annual cost that reflected direct staff time. Therefore, the budget required per full-time equivalent is relatively high when compared with estimates that are based on approaches which value full-time equivalents using annual costs for indirect staff time.

TABLE 7: YEARLY BUDGETS FOR STAFF TIME NEEDED TO SCALE UP INTEGRATED PROVISION (IN £ MILLION; 2021)

	England (£m)	N Ireland (£m)	Scotland (£m)	Wales (£m)	UK (£m)
Midwives	21.8	1.6	3.7	1.8	28.9
Health visitors	59.3	2.4	5.7	3.2	70.5
Mental health practitioners	19.8	0.7	1.6	1.0	23.2

Table 8 presents the budget needed for delivering the training sessions for midwives, health visitors and mental health practitioners.

The total annual budget commitments needed from governments are presented in Table 9.

In Appendix B we present more detailed findings (Graphs B2 to B6) to show the budgets for employing additional specialist and non-specialist staff by the time required for providing different activities.

TABLE 8: ONE-OFF BUDGET FOR TRAINING NEEDED TO SCALE UP INTEGRATED PROVISION (IN £)

	England (£)	N Ireland (£)	Scotland (£)	Wales (£)	UK (£)
Midwives	190,000	9,000	15,000	7,000	220,000
Health visitors	600,000	31,000	51,000	22,000	700,000
Mental health practitioners	240,000	12,000	20,000	8,600	280,000

TABLE 9: YEARLY TOTAL BUDGETS NEEDED TO SCALE UP INTEGRATED PROVISION (IN £ MILLION; 2021)

England (£m)	N Ireland (£m)	Scotland (£m)	Wales (£m)	UK (£m)
102.0	4.6	11.2	6.0	123.8

DISCUSSION

This purpose of this study was to estimate the costs and economic consequences of different service options for supporting women with 'common' (less severe) mental health problems during the perinatal period.

LIMITATIONS

It is important to highlight some limitations of our analysis. In the simulation modelling, we were not able to distinguish between severities of mental disorders, and a key assumption was that needs of women with severe conditions were met by existing mental health service provision, and that unmet needs therefore referred to common mental health problems.

The scenarios we developed are simplifications of possible realities. It is important to note that, in many localities, midwives and health visitors already provide some support as modelled in Scenario 1, including informally and without additional funding.

As already mentioned, our analysis only captures costs and benefits for which we could identify sufficiently robust evidence. We were unable to reflect the complexity of actual provision of interventions in practice, including interventions that are personalised and respond to local needs. Our analysis did not attempt to capture the costs and outcomes linked to medication, as medications are generally not indicated or as relevant to the effective treatment of most women with common mental health problems. Moreover, in the intervention studies that informed the modelling, women taking medication in addition to the psychological support will have been included and therefore the effects of

medication are indirectly included for women receiving psychological treatment. As mentioned, we did not include the costs and outcomes of treatment provided by mental health services for severe disorders. Due to the nature of the condition and treatment, it is difficult to establish the counterfactual for such treatments and randomised controlled trials and most other comparative studies would be considered unethical unless they would be conducted to compare treatments with expected equal effectiveness.

Finally, our analyses are based on a static model, which means that we are unable to explore the progression or regression from one 'disease state' to another during the perinatal period.

EVIDENCE GAPS AND RESEARCH RECOMMENDATIONS

Our report identified various gaps in evidence, both routinely collected data as well as evidence from research studies. For example, whilst this was not the focus of the analysis, we identified large knowledge gaps in relation to numbers of women giving birth who receive specialist perinatal mental health services, including data on severity of mental illness and the types of interventions received. We are aware that some work is now under way, and that relevant data are being or soon will be collected in England and Wales. In addition, IAPT services have added questions around the perinatal period to their recording systems, so that in the future more data will be available to monitor progress in closing the gap in supporting women with common perinatal mental health problems.

However, there are still gaps that need to be addressed urgently, including the lack of routinely collected data on the number of women assessed, referred and supported by midwifes and health visitors and other professionals, such as general practice staff, with regard to women's mental health. This will also require an agreed definition of the perinatal period and agreement on how to collect data on women in this period. Other data gaps that prevent a more comprehensive analysis include a lack of data on long-term impacts of interventions, including on mother's employment, infant and child development and (mental) health, as well impacts on partners and siblings.

Evidence on how best to support women with mental health problems to improve long-term child outcomes is still underdeveloped.

Because this report focuses on all women with common mental health problems, and derives estimates that reflect average experiences and impacts, it does not highlight the substantial health inequalities experienced by some women, particularly in those sub-populations facing greater economic hardship or social deprivation. More work is needed to understand (and probably alter) patterns of access to mental health treatment by women from lower socio-economic groups, for example, or women from BAME groups. In addition to routine data collection to monitor access to treatment, research is required on the (cost)-effectiveness of treatment for these groups of women

Another area for future research should be on the fidelity of interventions in practice, and the role of training and supervision. For example, evidence used in this report referred to research studies which assume a more intense level of training and supervision than the one considered feasible in practice and costed in Part 2 of this study. Future research could helpfully explore the kind of training and supervision required to ensure that the same level of effectiveness found in studies is achieved in practice.

CONCLUSIONS

Despite some evidence that more attention is being given to this issue by governments, improving access to mental health care for women during the perinatal period remains a challenge across the UK. The need to address that challenge has become particularly evident during the COVID-19 pandemic and – without further action – will remain an urgent matter in the post-pandemic situation.

Midwives and health visitors, together with other health professionals in contact with women during the perinatal period, such as

general practitioners and those employed by voluntary and community sector organisations, play key roles in this area. They can identify and address mental health problems early on, make appropriate referrals for those women with complex problems and support women with ongoing common mental health problems that are not sufficiently severe to access specialist perinatal mental health services. There are long waiting lists for many mental health services, including service provided through the Improving Access to Psychological Therapies (IAPT) programme in England. In addition, they are not set up to meet pregnancy and parenting-specific needs, which can mean that women do not accept referrals, miss appointments or are dissatisfied with the treatment they receive. Midwives and health visitors already have universal contact with women during the perinatal period and can address the specific needs of this population as they relate to pregnancy, giving birth and looking after a baby. Therefore, integrated provision that combines mental health and pregnancy or parenting support and is provided in collaboration between midwives or health visitors and primary mental health services should be an essential part of government response to address both maternal wellbeing and early child development needs.

Even before the pandemic, there was urgent need to look at how best to support women with common mental health problems. The increase in prevalence of common mental health problems like anxiety or depression during the COVID-19 pandemic[43] means that it is particularly important to develop service models that can respond to increased demands, including models that are fit for purpose for future health and environmental emergencies.[44] Since many of the risk factors for mental health problems (e.g., financial difficulties, unemployment, trauma, bereavement and loneliness) are likely to persist even after the end of the pandemic, the need for mental health support for women giving birth will remain high and possibly increase. At the same time, considering the wider macroeconomic situation and unprecedented public sector expenditure made in response to the pandemic, there must also be great uncertainty about whether policy makers will consider further investment into this area affordable.

However, it must be emphasised that the long-term costs of not addressing these issues are enormous, as highlighted in our 2014 *Costs of Perinatal Mental Health Problems* report.[45] These huge negative consequences include those linked to the potential negative health and wellbeing impacts on children. A recent report[46] funded and led by the Royal Foundation Centre for Early Childhood, using analysis conducted by the Care Policy and Evaluation Centre at the London School of Economics and Political Science, found that the costs of lost opportunities amount to £16.3 billion per year. That report makes recommendations for where to invest and highlights maternal mental health as a priority area. The Royal Foundation report, like this one, highlights the fundamental importance of identifying opportunities for investing in an infrastructure to address the mental health of women and children, both early and cost-effectively.

In summary, our analyses show that there are clear economic benefits from training midwives and health visitors so that they can confidently and skilfully ask women about their mental health, assess their needs, and offer or arrange for psychological interventions. These analyses demonstrate both the desirability and economic viability of scaling-up integrated perinatal mental health provision across the UK.

[43] Pierce et al (2020)

[44] NSPCC (2020)

[45] Bauer et al (2014)

[46] Royal Foundation (2021)

APPENDICES

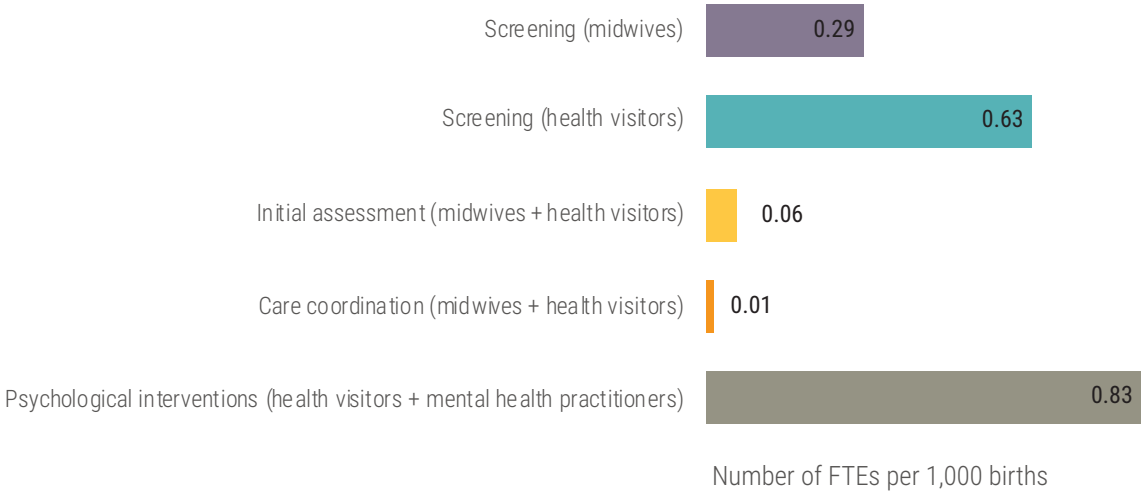
APPENDIX A: PARAMETERS, VALUES, AND DATA SOURCES (PART 1)

Parameter	Value	Data source
COHORT OF WOMEN WITH MENTAL HEALTH PROBLEMS AND ACCESSING SERVICES		
Number of women giving births (example: 2015)	England: 664,399; Northern Ireland: 24,215 Scotland: 55,098 Wales: 8,985	For 2015 to 2019: England and Wales – Annual conception data (ONS, 2018) Northern Ireland – Live birth statistics (NISRA, 2021) Scotland – Vital events references tables (NRS 2020) For 2019 onwards: UK population projections (ONS, no date)
Prevalence mental disorder during the perinatal period	27%	Howard et al (2018); refers to antenatal period
Proportion of women with mental disorder accessing secondary mental health services	2015 to 2018: 16% 2019 to 2014: 18%	Derived; NHS Digital (2020)
Proportion of women with mental disorder accessing primary or community mental health services	5.4%	As above
Proportion of women with mental disorder accessing specialist perinatal mental health services	2015: 0%; 2016: 2%; 2017: 3%; 2018: 5%; 2019: 8%; 2020: 14%; 2021: 19%; 2022: 25%; 2023: 31%; 2024: 37%; 2025: 37%	As above
Proportion of women with mental disorder accessing high intensity treatment through secondary mental health services	4%	As above
Proportion number of women with mental disorder accessing low and high-intensity treatment through primary mental health services	Low intensity treatment: 1% High intensity treatment: 5%	As above
Proportion of women with mental disorder accessing high intensity treatment through specialist perinatal mental health services	2015: 0%; 2016: 0%; 2017: 1%; 2018: 1%; 2019: 2%; 2020: 2021: 3%; 2022: 4%; 2023: 6%; 2024: 7%; 2025: 9%	As above
NUMBER OF SCREENINGS BY MIDWIVES AND HEALTH VISITORS		
Number of mental health screenings by midwives per woman	10	NICE (2014)
Number of mental health screening by health visitors per woman	6	PHE (2016)

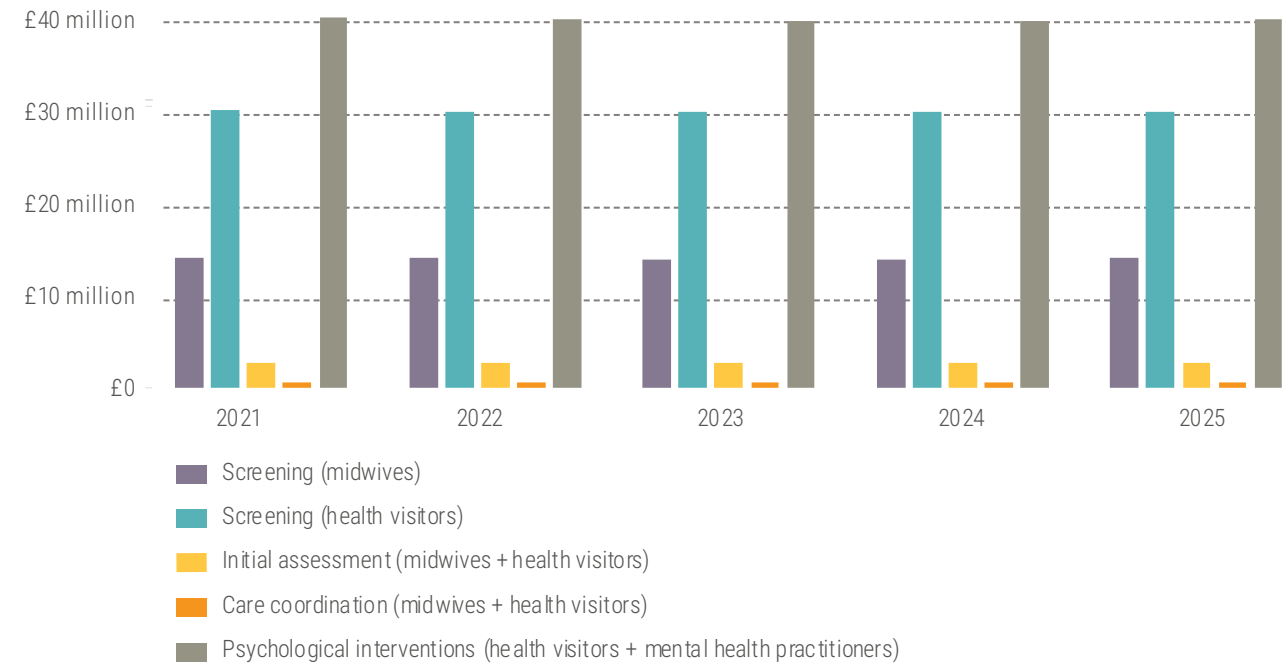
Parameter	Value	Data source
DURATION OF SCREENING, ASSESSMENT, CARE COORDINATION		
Duration of mental health screening by midwives	First: 5 minutes Subsequent eight: 1 minute	Expert consultation
Duration of mental health screening by health visitors	5 minutes	Expert consultation
Duration of (initial) assessment by health visitor or midwives	10 minutes	Expert consultation; refers to direct face-to-face time in addition to direct face-to-face time for screening
Duration of care coordination	20 minutes	Expert consultation; refers to direct face-to-face time in addition to direct face-to-face tome for screening and assessment
Duration clinical assessment	12 minutes	NICE (2014)
COST CONSEQUENCES LINKED TO INTERVENTIONS (IN 2020 PRICES)		
Screening by trained staff	−£101	Henderson et al (2019), refers to reduction in staff time
Low-intensity treatment	−£78	Trevellion et al (2020), Morrell et al (2016); refers to reduction in staff time
QUALITY ADJUSTED LIFE YEAR (QALY) GAINS LINKED TO INTERVENTIONS		
Screening by trained staff	0.002	Henderson et al (2019)
Low-intensity treatment	0.01	NICE (2014)
High-intensity treatment	0.06	NICE (2014)
UNIT COSTS (IN 2020 PRICES)		
Midwives, health visitors, mental health practitioners, direct face-to-face time, per hour	Without training in mental health: £98 With training in mental health :£102	Curtis and Burns (2020); refers to Band 6; cost per working hour of £49; and assumed 1:1 relationship between face-to-face time and working hours
Psychologist, direct face-to-face time, per hour	£192	Curtis and Burns (2020); refers to Band 8; based on £96 per working hour; and 1:1 ratio of working time and face-to-face time
General practitioner, per minute	£3.1	Curtis and Burns (2020)
Low-intensity treatment	Provided by mental health practitioner: £458 Provided by health visitor trained in mental health: £543	Curtis and Burns (2020), Trevellion et al (2020), Morrell et al (2009; 2016); refers to nine sessions; 30 minutes per session; Band 5 for mental health practitioner and Band 6 for health visitor
High-intensity treatment	£1,514	Burns et al (2013), Table 4; Radhakrishnan et al (2013)

APPENDIX B: GRAPHS ILLUSTRATING FINDINGS (PART 2)

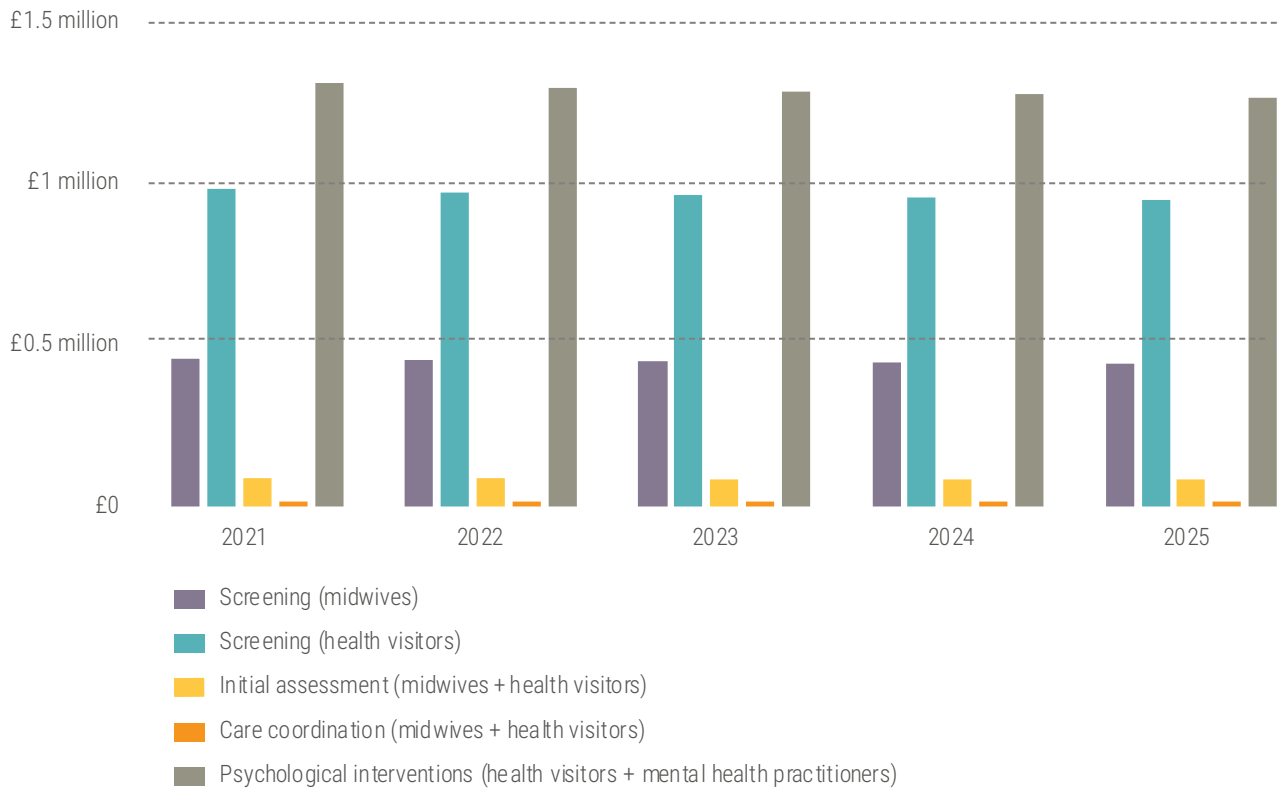
GRAPH B1: ADDITIONAL NUMBER OF MIDWIFES (MWS) AND HEALTH VISITORS (HVS) AND OTHER STAFF REQUIRED TO SCALE UP INTEGRATED PROVISION, IN FULL-TIME EQUIVALENTS, PER 1,000 BIRTHS



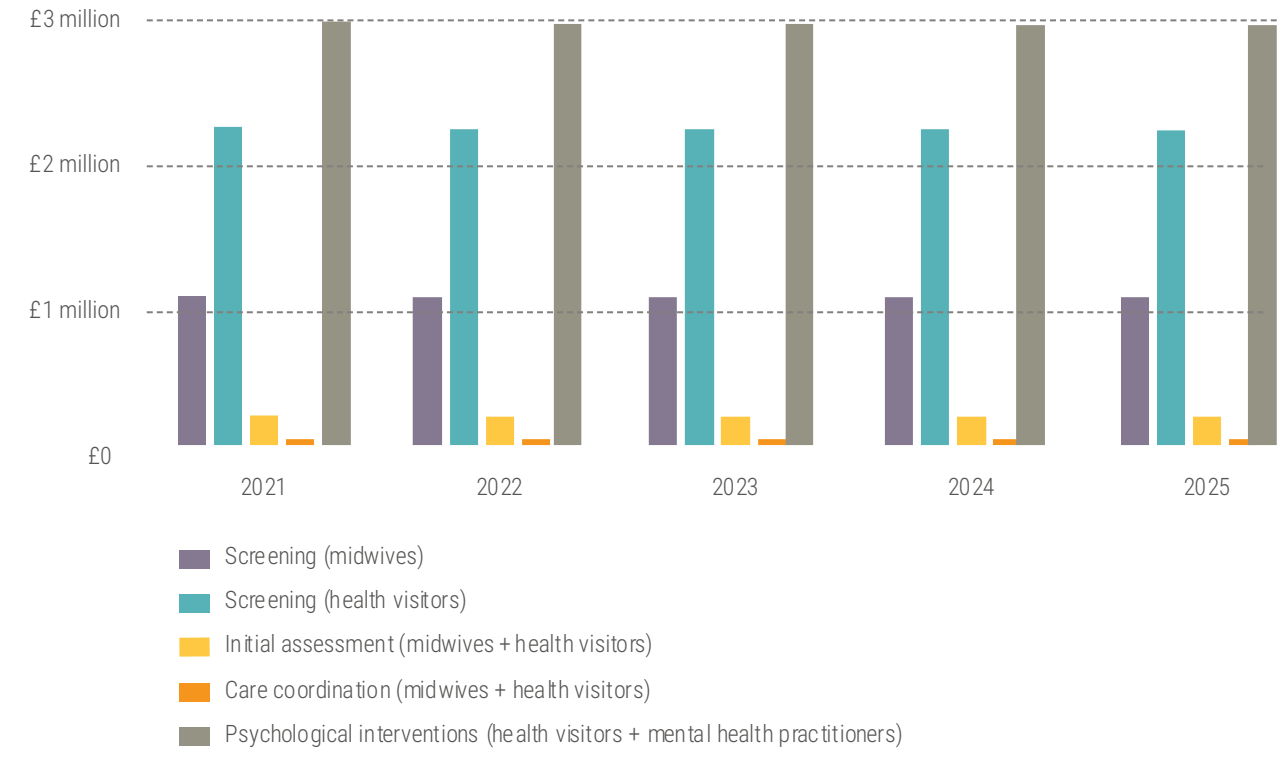
GRAPH B2: ADDITIONAL BUDGET REQUIRED FOR SCALING UP INTEGRATED PROVISION (DOES NOT YET INCLUDE BUDGET FOR SPECIALIST STAFF): ENGLAND



GRAPH B3: ADDITIONAL BUDGET REQUIRED FOR SCALING UP INTEGRATED PROVISION (DOES NOT YET INCLUDE BUDGET FOR SPECIALIST STAFF): NORTHERN IRELAND



GRAPH B4: ADDITIONAL BUDGET REQUIRED FOR SCALING UP INTEGRATED PROVISION (DOES NOT YET INCLUDE BUDGET FOR SPECIALIST STAFF): SCOTLAND



APPENDIX C: GOOD PRACTICE AND COSTING EXAMPLES OF SERVICE MODELS THAT REFLECT INTEGRATED HEALTH VISITOR OR MIDWIFERY-LED PROVISION FOR WOMEN WITH COMMON MENTAL HEALTH PROBLEMS

For the purposes of the economic modelling presented in this report, we had to make assumptions about the roles and activities of the practitioners involved in the pathways that could identify women with common mental health problems and deliver assessment, care coordination and low-intensity treatment as recommended. Since the findings of the economic report suggest that integrated service provision led by midwives or health visitors is an economically viable option, we thought it would be useful to explore in consultation with relevant practitioners and experts how an integrated model might look like in practice. We gathered information about examples of integrated service provision in England, costs of delivering those and experiences of women who had received integrated service provision.

As expected, since there is currently no specifically allocated funding to support this kind of provision, we were unable to identify localities in which integrated service provision happened systematically in ways that ensured that all women during the perinatal period in contact with midwives or health visitors would be asked about mental health and received low-intensity treatment as appropriate (or referred to more intensive forms of treatment as necessary). Instead, there was a lot of variation in how midwives and health visitors were trained in mental health and what was being offered jointly between midwives, health visitors and primary mental health services i.e., Improving Access to Psychological Therapies (IAPT) services in England. However, we identified examples of good practice, in which midwives or health visitors were trained by specialist perinatal mental health staff to ask skilfully about mental health, assess women, and deliver care coordination and we identified good practice examples, in which midwifery or health visiting services collaborated with primary mental health services (IAPT) to deliver low-intensity treatment. Based on this information and on assumptions informed by practitioners and experts it was possible to cost hypothetical service models, in which provision was assumed to meet 100% demand for low-intensity treatment at a clinic level. We also present this information for 1,000 births.

In the following, we present the information we gathered, which seeks to support decision-makers and people commissioning or providing mental health treatment for women during the perinatal period in taking forward findings from this report. We provide information on the following:

1. Towards an integrated service model
2. Good practice examples:
   a. Training health visitors and midwives in mental health
   b. Joined-up delivery of low-intensity treatment
3. Costing of hypothetical service models:
   a. Midwifery-led model
   b. Health visiting-led model

1. TOWARDS AN INTEGRATED SERVICE MODEL

Various issues were mentioned by the individuals we talked to, which should be addressed by an integrated service model:

- Unless specifically trained to do so, midwives and health visitor are not confident or skilled in asking about mental health or referring to primary mental health services.
- Women's common mental health problems might not be picked up by health visitors or midwives because of lack of training and inappropriate screening procedures that make it difficult to identify problems, especially in populations from black and ethnic minority backgrounds and other populations in which mental health stigma is high.

- In many localities, awareness among many health visitors or midwives of the support offered by primary mental health services tends to be low.
- Where health visitors or midwives refer women to primary mental health services, women often experience waiting lists, or are not being engaged and followed up with the effort required to engage women effectively. This included incidences where women were discharged after missing an appointment or had no follow up calls after a missed call.
- Women experience practical barriers when trying to access primary mental health services such as that they are not allowed to take their babies to appointments or that facilities are not appropriate for babies.
- Most women do not accept or are dissatisfied with treatment offered by primary mental health services because it does not specifically address the needs of women during the perinatal period and of infants. They want specific contents around childbirth, infant needs, and mental health.
- For the above and other reasons, women with problems that do not meet the threshold for specialist perinatal mental health services are often not getting the appropriate treatment.
- In addition, it was felt that health visitor and midwives can provide the continuity of care that many women and their partners want, especially those with previous trauma, baby loss or other difficult experiences, that they did not want to re-tell each time.

In an integrated service model, health visitors or midwives would ask every woman about mental health at each appointment, have further discussions if there are mental health problems, and provide care coordination to women with complex needs and work with primary mental health services to provide low-intensity treatment such as guided self-help, or support groups. In such a model, health visitors and midwives would work with practitioners from primary mental health services to take on leading roles and responsibilities for ensuring women with common mental health problems can access low-intensity treatment in addition to ensuring those with more severe problems access high intensity treatment provided, for example, by specialist perinatal mental health services. Such a model would provide opportunities to offer low-intensity treatment based on women's need and acceptance of help, and, over time, lead to appropriate referrals or offers of support through shared learning. In their work, health visitors or midwives would focus on motivational engagement and trust-building following strengths-based approaches of care (as health visitors already do in many localities). Example of how interventions could be provided are presented in the next section.

Specialist midwives or health visitors would take on a strategic role to support the setting up and running of integrated service models. This would include monitoring the number of women receiving low-intensity treatment. They would also be responsible for building and developing relationships with primary mental health services so that integrated service provision can be set up and developed. They would have enhanced mental health and clinical leadership roles, including educational responsibilities, such as training and supervision of health visitors and midwives. To realise their roles and responsibilities, specialist midwives' and health visitors' posts should be incorporated into senior management and partnership structures. For this to be realistic, their caseload would need be zero or very limited.

An integrated service model would seek to ensure parity between mental and physical healthcare within the well-established universal maternity and health visiting services. Whilst the focus of the model in this report is on three professional groups (health visitors, midwives, and practitioners in primary mental health services), who should be utilised in all localities, relationships with other important partners will need to be defined based on the local context and considerations and follow the same principles of joined-up provision.

2 GOOD PRACTICE EXAMPLES

2.a Training and supervising health visitors or midwives in mental health

The following case study is an example of how training and supervision provided to a health visitor (HV) by a specialist health visitor (Sp HV) for perinatal and infant mental health changed their practice and achieved improved outcomes for the mother.

Situation

For the mother: The new mum was feeling overwhelmed with the demands of her baby son, particularly feeling that he did not sleep as she expected he should and was convinced that something was wrong with him. She was constantly calling the HV's duty number for advice and was being visited fortnightly by the HV. She was also seeking help from private sleep specialists, nannies and alternative therapists.

For health visitor: The HV (she/her) was questioning if her input was being effective. She felt that the mum was doubting her advice and had run out of things to suggest. She herself was feeling overwhelmed with the mum's distress. Although the HV did not have any concerns about the baby's development or sleep pattern, she was also feeling desperate to find a solution for the family.

Changes in practice due to training and supervision

The HV reported that supervision enabled her to identify the rupture that occurred in her relationship with the mum and 'move her to a space where she was ready to re-invest'. She was able to reflect on the 'embodied' knowledge that she had gained and was able then to think about approaching the situation from a 'perinatal mental health frame of mind' rather than simply focusing on the issue of sleep.

This renewed focus prompted the HV to offer a maternal mental health assessment during a subsequent joint visit with the specialist health visitor for perinatal and infant mental health. In the assessment, she identified several factors known to increase the likelihood of perinatal mental health problems, namely, previous pregnancy loss, a difficult labour, baby spending time in Neonatal Intensive Care Unit, tension in the relationship with grandparents, cultural and social isolation as the rest of family lived abroad and the relationship with baby's dad was under strain. Mum was finding herself tearful most days and disinclined to be going out or seeing friends and expressed concerns about her bond with her baby. The HV (with the help of the Sp HV) was then able to discuss with the mum what options were available to her including local groups, further assessment with her General Practitioner, a referral to Improving Access to Psychological Therapy programme (= primary mental health service in England) and the option of a series of emotional wellbeing (= listening) visits from the HV.

Outcomes for the mother

The mum agreed to see her GP and opted to commence medication rather than be referred to Improving Access to Psychological Therapy programme (=primary mental health service in England). She was keen to have ongoing support from the HV whose subsequent visits focussed on emotional coping skills, problem-solving, and Cognitive-Behavioural Therapy (CBT)-based approaches with a particular emphasis on supporting the parent-infant relationship. Her confidence improved and she became less focused on trying to establish a sleep routine, was more able to enjoy her baby and follow his lead and noticed an improvement in her relationship with her partner.

PHQ-9 and GAD-7 scores improved following HV intervention.

Mother's voice

The health visitor received the following written feedback from the mother following the baby's one year development review:

> "I just wanted to say a big thank you for your support for the past year. It feels like a huge milestone reaching 12 months. I really appreciate your steady and non-judgemental support, and we wouldn't have made it here without you. Thank you."

Lessons learnt & economic considerations

Continuity of HV allowed that risk factors were identified earlier. Supervision by the Sp HV enabled clarity and focus that identified a good entry point for establishing an effective and therapeutic relationship and prevented unnecessary assessments. Without the HV intervention, the mum would have probably sought further medical review and diagnosis for her baby. It is possible that her mental health would have deteriorated as no one else would have picked up on her problems and there could have been longer term impact on all aspects of her baby's development.

2.b Joined-up delivery of low-intensity treatment

HEALTH VISITOR DELIVERED "KNOWING ME, KNOWING YOU" GROUP

Background

The "Knowing Me, Knowing You" support group was set up initially by Southern Health Foundation Trust (SHFT) Andover Health Visiting Team, the local specialist perinatal mental health team and in partnership with Andover Mind to support mothers with anxiety and low mood postnatally.

About the intervention

The course provides a two-hour group session, on a weekly basis for seven weeks covering topics based on feedback received from mothers who identified the level of support they needed, including feeling isolated, feeling like a failure and being afraid to be honest about how they were feeling. The group aims to reduce mental health symptoms, improve parental confidence and enable women to develop social support networks.

Activities, ranging from rhyme time to baby massage, were incorporated into each session and fathers were also invited to attend a one-off session to provide information, advice, and support for living with perinatal mental health difficulties.

During the Covid-19 pandemic, the "Knowing Me, Knowing You" groups were recreated using an online platform so that mothers and babies could attend an online group for 6 weeks.

Practitioners providing sessions

The groups were originally facilitated by a wellbeing practitioner from MIND charity, a community nursery nurse, and a health visitor. They are now run mainly or only by health visitors.

Assessment, referral & engagement

Referrals for the group are received from general practice staff, health visitors and directly from mothers who feel that they were experiencing symptoms of perinatal mental illness.

Women are assessed for suitability and interest in joining a group by a health visitor who also reviews their mental health needs, using tools like the PHQ-9, GAD 7 and Karitane parenting confidence questionnaire. Health visitors use motivational engagement techniques to help women accessing services. This includes building rapport and trust, for example by sending hard written cards to invite women and their babies to attend sessions.

Collaborating partners

The health visiting team works with local partners to ensure groups are run in community settings that are familiar to and easily accessible for women. For example, they worked with local Children's Centres which provided their facilities free of charge for running the group. They work with the regional specialist perinatal mental health team, which provides supervision to the health visitors running the groups on a regular basis.

How does it work differently from standard mental health services?

The intervention has a string infant focus. Supporting mothers to develop an understanding of their baby's world, including infant mental health, is regarded a key component of successful outcomes for children when mothers have perinatal mental health problems. Throughout the sessions, health visitors discuss ways that babies show they are tense, anxious and fearful through being restless, having difficulty feeding and sleep problems. Each session includes an infant-friendly activity, which also helps mothers, who find it difficult to leave their baby when they are feeling at their most vulnerable. The activities are carefully chosen to support the mothers to build their confidence as parents and focus on responsive parenting techniques.

Impact/ positive outcomes

Outcome data collected using PHQ-9, GAD-7 and Karitane Parenting Confidence Scale questionnaire showed improvements over time.

Service developments

Women invited to participate in a new co-design approach using the King's Fund Experience Based Co-Design toolkit led to service improvements. Examples of outputs of this approach include a redesigned perinatal mental health leaflet, and a stronger focus of the programme on addressing stigma and encourage parents to talk about how they are feeling. Mothers attending the programme set up a peer support group ("Knowing Us"), which allowed them to continue meeting after the programme ended. The group meets on a weekly basis, and all women who attended the "Knowing Me, Knowing You" group are invited to attend this group.

Resources and information

https://ihv.org.uk/news-and-views/voices/knowing-me-knowing-you

www.youtube.com/watch?v=agCI1vmXW3g&feature=youtu.be

https://healthforunder5s.co.uk/hampshire/services/specialist-support/knowing-me-knowing-you

HEALTH VISITOR DELIVERED EARLY INTERVENTION GROUP IN BEDFORDSHIRE

Background

This project set out to develop an early intervention in the form of a group for mothers who are affected by mild to moderate perinatal mental health problems related to the birth of a baby. It was hoped that facilitation could be carried out through an integrated partnership approach including the Health Visiting Service, Mental Health services and Children's Centres. However, this turned out to not be feasible due to organisational constrains. (The kind of constrains were not mentioned).

About the intervention

The group course is delivered over 8 weeks. Course contents include food, exercise and sleep management; support networks; preparing for birth; transition into motherhood; relaxation techniques; communication, attachment and bonding with child.

Practitioners providing sessions

Health visitors trained in mental health, counselling and cognitive behavioural techniques conduct the course. Involvement of mental health professionals and Children's centre staff in the delivery of the course was planned but could not be realised.

Assessment, referral & engagement

Appropriate referrals are identified by Children's Centre in communication with health visiting team using a referral form and inclusion criteria. Health visitors use recommended tools like the Whooley questions, PHQ-9 and GAD-7 for assessment of mental health problems.

Collaborating partners

The course was hold at the local Children's Centre. Whilst the co-delivery with mental health practitioners from primary mental health services was planned, this was could not be realised.

How does it work differently from standard mental health services?

The group intervention was intended to address specifically low to moderate perinatal mental health problems related to the birth of a baby.

Impact/positive outcomes

Outcomes were measured on the PHQ-9 and GAD-7 and additional feedback was collected during sessions. So far only four women attended the course, all of whom reported improved scores after the course on both scales.

Service developments

Various plans towards integrating the intervention into routine practice and perinatal mental health pathways.

Resources and information

Oakham and Wakelam (2017) Perinatal Mental Health Project Report: Creating a group intervention for mothers with perinatal mental health support needs. South Essex Partnership NHS Trust.

MIDWIFERY-LED PROGRAMME "REDUCING ANXIETY IN PREGNANCY INTERVENTION DEVELOPMENT (RAPID)"

Background

The programme is provided as part of a research study led by Dr Kerry Evans at Nottingham University Hospital NHS Trusts. The current work programme (RAPID-2) is funded 2021 to 2024 as a Clinical Lectureship award by the National Institute for Health Research, hosted by the Institute of Care Excellence at Nottingham University Hospitals NHS Trust and the School of Health Sciences at the University of Nottingham. A service user advisory panel from the Nottingham Maternity Research Network will inform the study conduct and progress throughout the three-year process. The programme builds on a previous study (RAPID 1), in which an intervention was developed to provide suitable, timely support and treatment to prevent an escalation of symptoms and improve women's ability to cope.

About the intervention

RAPID-1 designed and tested a new intervention to support women with symptoms of mild to moderate anxiety in pregnancy. The RAPID intervention was designed with involvement from women who had experienced anxiety in their pregnancies. It consists of groups sessions, individual midwife support and self-help materials, and is facilitated by trained midwives and midwifery support workers.

In RAPID-2 a bespoke training programme is currently being developed, consisting of a training workbook and two-day workshop for midwives and maternity support workers. A protocol for a feasibility cluster randomised trial has been developed and is undergoing NHS research ethics review.

Practitioners providing sessions

Midwives and mental health practitioners specialised in Cognitive Behavioural Therapy.

Assessment, referral & engagement

First-time pregnant women with self-reported symptoms of mild to moderate anxiety are recruited through midwives and social media.

Collaborating partners

Midwives and primary mental health services

How does it work differently from standard mental health services?

The intervention was developed to specifically address requirements of the Department of Health Maternal Mental Health pathway, which sets out that all women identified with mild to moderate anxiety should be offered a range of support tailored to their needs. The aim was to develop an intervention that could be easily integrated into maternity care systems and additional supportive services.

Impact/positive outcomes

This is still under investigation.

Service developments

As part of the study and in response to COVID-19, the way the intervention is delivered has been reviewed. Work was conducted to review the evidence for delivering remote interventions (i.e. on-line and other digital methods) in collaboration with researchers from the University of Nottingham Institute for Mental Health, Maternal Health and Wellbeing Research Group and Digital Research. For example, they are asking women and healthcare professionals their views about the ways care for women with mild to moderate anxiety can be delivered in the future.

Resources and information

https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/s12884-020-03469-8

www.researchintorecovery.com/research/rapid

MIDWIFERY-LED "MINDFULNESS PREGNANCY COURSE", MID YORKSHIRE HOSPITALS NHS TRUST

Background

The intervention was developed to address the barriers that prevent women from seeking mental health support for low to moderate mental health problems. The intervention was developed by the specialist midwife for perinatal mental health working within the local NHS maternity service and specialist perinatal wellbeing practitioners working within a commissioned Improving Access to Psychological Therapies (IAPT) service.

There were multiple considerations when deciding on the type of intervention and developing the course, in particular best evidence from the Department of Health's Healthy Child Programme, National Institute for Health and Care Excellence and Improving Access to Psychological Therapies programme. After discussing priorities and developing content with primary mental health (IAPT) services, midwives and the local Maternity Voices Partnership including women with lived experience, the initial course was run with six women in pregnancy. During the course, contents were developed further to complete this final programme.

In addition to improving maternal mental health during the perinatal period, the intervention also seeks to promote strong attachment and positive parenting thereby reducing the risk of later mental health problems for both mother and child.

About the intervention

The course is provided over six sessions which run monthly. Topics covered include: managing stress, relaxation and self-care, how to have a positive birth, and how to connect with your baby. Specific contents of the sessions include: Awareness of emotional well-being and pregnancy, managing low mood and looking forward to being a parent, controlling negative thoughts, mindfulness and reducing anxiety, positive birthing, baby in mind, enhancing baby's emotional wellbeing.

Practitioners providing sessions

The course is provided by a specialist perinatal mental health midwife and a practitioner from primary mental health services (IAPT).

Assessment, referral & engagement

Women under maternity care at the host trust were invited to attend the sessions if they were struggling with low mood and or anxiety in pregnancy. No specific gestation criteria were included or recorded, as it was felt the intervention would benefit women at any stage of pregnancy. There were no criteria related to level of low mood or anxiety. Posters and leaflets were used to advertise for women to self-refer. They were distributed on social media, antenatal clinics and GP surgeries.

Collaborating partners

Midwifery service, Improving Access to Psychological Therapies programme, Maternity Voices Partnership

How does it work differently from standard mental health services?

The intention was to have an intervention that would be seen part of their antenatal care rather than a separate mental health aspect.

The course provided multi-professional expertise which was hoped to make services more accessible to women who experience low to moderate perinatal mental health problems. Collaborative working combined with bespoke self-help psychoeducation was considered to explain the success of the programme.

Impact/positive outcomes

Scores on the PHQ-9 and GAD-7 measured for altogether 44 women showed that 77% of women recovered i.e., for 77% of women scores were below the cut-off by the end of the course. This is higher than the target set out by the Improving Access to Psychological Therapy programmes, which is 50%.

Women gave positive feedback, including:

> "I Felt understood. The course helped me to cope. I feel like I can do this now."
>
> "Sessions about the birth and positions helped me feel more positive about how I can help myself and I can use the tips for lowering my anxiety."

Service developments

During the COVID-19 pandemic an online Mindful Pregnancy workshop was developed, which is composed of two sessions.

Resources and information

www.midyorks.nhs.uk/well-being-antenatal-classes

Thomas R et al (under review). Mindful Pregnancy – A Service Evaluation; the effectiveness of a group antenatal education and psychoeducation programme in pregnancy for improving perinatal mental health in moderate to low-risk conditions.

3 Costing examples

We asked managers and practitioners in health visiting and midwifery services questions to provide cost-relevant information for an integrated service model. This referred to hypothetical service provision in that they were asked to tell us about the requirements when the service model they operated would run to meet all demands for women with common mental health problems i.e., all women who do not require more intensive forms of treatment such as those offered by specialist perinatal mental health services. Costs refer to the clinic level and are also presented per 1,000 births. We present two costing examples, one for a midwifery-led service model and one for a health visiting-led service model. Costing example 1 refers to the costs for the provision of low-intensity treatment provided by midwives in collaboration with practitioners from primary mental health services in the form of group provision. This costing example does not yet include the costs for identification, assessment and care coordination. Costing example 2 refers the costs for all service provision related to mental health from health visiting side including screening, assessment, care coordination and provision of low-intensity treatment. It includes the costs for low-intensity treatment for one-to-one provision by health visitors as well as face-to-face and virtual group courses provided by health visitors in collaboration with mental health practitioners and community nursery nurses.

3.a Midwifery-led service model

Estimated population eligible for low-intensity treatment at clinic, per year (based on 6,000 births)		400
Estimated proportion of women who decline		20%
Number of women eligible for low-intensity treatment who would accept treatment, per year		320
Average number of women, per course		10
Number of courses required, per year		32
Number of working hours required, per course	Midwife	50
	Mental health practitioner	50
Number of working hours required to run courses to meet demand, if all demand is met with courses, per year	Midwife	1,600
	Mental health practitioner	1,600
Average working hours per fulltime equivalent, per year	Midwife	1,589
	Mental health practitioner	1,599
Number of fulltime equivalents required to meet demand for low-intensity treatment, if all demand is met with courses, per year	Midwives	1.0069
	Mental health practitioners	1.0006
Unit cost (Band 6, including capital and overhead costs and costs of training), per year	Midwife	£377,471
	Mental health practitioner	£77,109
Estimated total costs of meeting yearly demand at clinic for low-intensity treatment, if all demand is met through courses		£155,165
Estimated total costs for meeting demand for low-intensity treatment, per 1,000 live births		£25,861*

* Costs do not yet include the costs of identification, assessment, care coordination

3.b Health visitor-led service model

Estimated population eligible for low-intensity treatment at clinic and who would accept treatment, per year (based on 12,360 births and assumption that 10% require and accept low-intensity treatment, which includes a care plan and treatment in form of Knowing me, Knowing You group, Listening visits or referral to mental health practitioners).		1,236
ONE-TO-ONE SESSIONS provided by health visitors, calculations based on 50% of demand addressed through such sessions		
Number of contact hours, per eligible woman		8
Number of working hours, per eligible woman (based on a 1:1 relationship between direct (= contact) time and indirect (= working) time)		16
Number of working hours required	Health visitor	9,888
Average working hours per fulltime equivalent, per year	Health visitor	1,589
Number of fulltime equivalents required to meet demand, per year	Health visitor	6.2
FACE-TO-FACE GROUP COURSES provided by health visitors, mental health practitioners and community nursery nurses, calculatioms based on 25% of demand addressed through such courses		
Number of courses required per year (based on an average of seven participants per course)		44
Number of working hours per course of seven sessions. Per session: 2-hour group, 1-hour setting/planning and de-brief, 45-minute preparation/administration, 30-minute follow up, 30-minute record keeping. Per course: 2 hours report writing, 2 hours additional supervision.	Health visitor	37.3
Number of working hours per course of seven sessions. Per session: 2-hour group, 1-hour setting/planning and de-brief. Per course: 3 hours record keeping time, 2 hours additional supervision.	Mental health practitioner	26
Number of working hours per course of seven sessions. Per session: 2-hour group, 1-hour setting/planning and de-brief. Per course: 6 hours preparation time, 2 hours additional supervision.	Community nursery nurse	29
Number of working hours, per year	Health visitor	1,641
	Mental health practitioner	1,144
	Community nursery nurse	1,276
Average working hours per fulltime equivalent, per year	Health visitor	1,589
	Mental health practitioner	1,599
	Community nursery nurse	1,589
Number of fulltime equivalents required to meet demand, per year	Health visitors	1.03
	Mental health practitioners	0.72
	Community nursery nurse	0.80

VIRTUAL GROUP COURSES provided by health visitors, mental health practitioners and community nursery nurses, calculations based on 25% of demand addressed through such courses		
Number of virtual courses required, per year (based on an average of six participants per course).		52
Number of working hours per course of six sessions. Per session:1.5-hour group, 30-minute setting/planning and de-brief, 45-minute preparation/administration, 45-minute follow-up, 30-minute record keeping. Per course: 2 hours report writing, 2 hours additional supervision.	Health visitor	28
Number of working hours per course of six sessions. Per session: 1.5-hour group, 30-minute setting/planning and de-brief, 30-minute record keeping. Per course: 2 hours additional supervision.	Mental health practitioner	15
Number of working hours per course of six sessions. Per session: 1.5-hour group, 30-minute setting/planning and de-brief. Per course: 6 hours preparation time, 2 hours additional supervision.	Community nursery nurse	18
Number of working hours, per year	Health visitor	1,456
	Mental health practitioner	780
	Community nursery nurse	936
Average working hours per fulltime equivalent health, per year	Health visitor	1,589
	Mental health practitioner	1,599
	Community nursery nurse	1,589
Number of fulltime equivalents required to meet demand, per year	Health visitor	0.92
	Mental health practitioner	0.49
	Community nursery nurse	0.59
Calculations to derive total costs		
Unit cost (Band 6, including capital and overhead costs and costs of training), per year	Health visitor	£77,471
	Mental health practitioner	£77,109
	Community nursery nurse	£77,471
Estimated costs for addressing demand for treatment	One-to-one sessions (50% of total demand)	£480,320
	Face-to-face group courses (25% of total demand)	£197,384
	Virtual group courses (25% of total demand)	£154,235
Estimated total costs for addressing demand for treatment at clinic		£831,940
Estimated total costs of meeting yearly demand for treatment, per 1,000 births (health visiting service + primary mental health service + community nursery service)*		£67,309

* Costs include ALL costs including those of identification, assessment, care coordination and low-intensity treatment

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