Summary and recommendations
The aim of this rapid review was to distil core principles and practice recommendations that can lead to improved care, services and outcomes for women, babies and their families from vulnerable population groups. The following is a summary of the evidence identified and the recommendations that were developed from the available evidence.

A lack of good quality evidence on interventions/actions for vulnerable groups in general was a consistent theme across the systematic reviews and was also identified by the NICE guideline on complex social factors and pregnancy (National Collaborating Centre for Women’s and Children’s Health, 2010) and is highlighted in the evidence summary by Woodman and Scott (2012). However, key themes did emerge across the included reviews and primary studies for women in different vulnerable groups and should be considered in the model of care. Specifically, the importance of continuity of care in enabling women to develop trusting relationships. This can be facilitated through having a universal model of care, in which all women receive usual midwifery care and vulnerable women with additional needs receive additional care tailored to their individual needs, however, their care will still be co-ordinated by one named midwife. Such an approach is akin to the proportionate universalism approach proposed by Marmot (2010). Marmot argues that focusing solely on the most disadvantaged members of society will not tackle health inequalities. Instead, a universal model is needed; however, the scale and intensity of services delivered is proportionate with the level of disadvantage. Delivery of such a service, would require effective multi-agency working as outlined in GIRFEC (Steading, 2009).

Building a successful relationship was also consistently found to be dependent upon having non-judgemental staff who were empathetic and knowledgeable of the women’s individual needs. Positive staff attitudes and knowledge could be improved by culturally sensitive training and education. The ten Health Scotland’s Principles (identified in the rapid review by Scott and Woodman [2010])) also provide guidance as to how all staff should treat women from vulnerable groups. Specifically: do good; do not harm; fairness; sustainability; respect; empowerment; social responsibility; participation; openness; and accountability. Another aspect that was found to be key was the need for effective communication, this refers not only to good interpersonal skills but also providing assistance for women with low literacy or for whom English is not a first language. There was some emerging evidence to support the use of culturally relevant lay workers, both for women with language difficulties and also to provide support more generally for women from other vulnerable groups. However, such an approach would require careful development and evaluation in different contexts before conclusions can be drawn regarding its ability to improve outcomes.
To conclude, there is clearly therefore no panacea for improving outcomes and experiences of care for vulnerable women and their babies. However, as the barriers to care were generally consistent across different vulnerable groups and indeed many of the vulnerable groups overlap, there is a need for highly accessible (i.e. multiple barriers addressed), respectful and technically high quality services for all women, with the ability to layer on/integrate additional care for specific conditions.
The evidence:

- A database search of MEDLINE and CINAHL identified a total of 585 records after de-duplication. After screening 13 reviews met the inclusion criteria. These can be divided into reviews for the following population groups: disadvantaged and vulnerable groups in general (n=2); women with substance and alcohol misuse problems (n=1); women with disabilities (n=3); women with mental health problems (n=5); young mothers (n=2); and women experiencing domestic violence (n=2). All reviews examined interventions and three reviews also included information on interventions and women’s experiences.
- A search of the Cochrane Pregnancy and Childbirth group identified five additional systematic reviews not retrieved by the database search which examined the effectiveness of interventions for women with alcohol and substance misuse problems (n=3) and disadvantaged populations generally (n=2). Note another three Cochrane reviews were identified in the database search on interventions for women experiencing domestic violence (n=2) or women with mental health problems (n=1).
- Campbell Collaboration. No relevant reviews identified.
- National Perinatal Epidemiology Unit. Two additional reviews on interventions for Black and Ethnic Minority Women and women with disabilities were identified. Note another two reviews by the NPEU were identified in the database search and examined antenatal care in disadvantaged in vulnerable groups in general.
- NICE. Three guidelines relevant to the review were identified: a model for service provision for pregnant women with complex social factors; antenatal and postnatal health; and maternal and child nutrition.
- SIGN. One guideline relevant to the review was identified: management of perinatal mood disorders.
- RCOG. One guideline relevant to the review was identified: management of women with mental illness during pregnancy and the postnatal period.
- RCM. One additional record found.
- RCN. One guideline relevant to the review was identified: pregnancy and disability.
- Expert consultation. An additional 12 records were identified by experts and include: systematic reviews focusing on women in the criminal justice system (n=1), integrated substance misuse services (n=1) or Gypsy/Travellers (n=1); primary studies related to actions/interventions for disadvantaged/vulnerable groups in general (n=6); and grey literature (n=6) including rapid reviews, needs assessments and an evaluation of Getting it Right for Every Child.
- Reference lists. An additional four primary studies were identified from the reference lists of the systematic reviews.
Core Principles:

Practices
• Community groups and lay workers are particularly important for these women and families. Integration between lay and community services and health and social care professionals is important so that the needs of women, babies and families can be met effectively.

Values and Philosophy
• All women from vulnerable groups are treated respectfully by staff who are cognizant to their individual circumstances
• Maternity care is highly accessible to all women and additional efforts are made to engage women from vulnerable groups in maternity care

Organisation of care:
• Women from vulnerable groups receive continuity of care as far as feasibly possible
• A point of contact who co-ordinates and oversees care across multiple services is available for all vulnerable women
• Barriers to care are addressed at all levels (i.e. patient, healthcare provider, service)
• Care should be organised as a universal model of care in which all women receive usual midwifery care with the possibility to add additional services as necessary for vulnerable and/or disadvantaged women (i.e. proportionate universalism).

Care Providers:
• Healthcare providers work with women in an empathetic and non-judgemental manner
• All healthcare providers and other professionals caring for pregnant or post-partum women (e.g. social workers, prison staff) receive culturally sensitive training and education on the needs of vulnerable women
1.0 Aim
The aim of this rapid review was to distil core principles and practice recommendations that can lead to improved care, services and outcomes for women and babies from vulnerable population groups. More specifically, what is the optimal model of care (i.e. the overarching design and values of the service)? And what is the optimal service and workforce configuration (i.e. specialised services or integrated services) and characteristics of care providers (i.e. interdisciplinary working, attitudes of staff)?

This review will examine maternity care provision for women with different requirements as follows:
- socially disadvantaged
- substance or alcohol misuse
- refugees or recent arrival as a migrant
- ethnic minority
- physical disabilities
- language barriers
- learning disabilities
- mental illness
- teenage mothers
- experiencing domestic abuse
- Homelessness
- Gypsy/Travellers
- sex workers
- In the criminal justice system.

It is expected that there will be overlap between the different groups.

In order to address the review questions, the rapid evidence search will seek to obtain the following types of studies:
- Studies which evaluate the effectiveness and/or sustainability and/or acceptability of interventions/actions/strategies that aim to engage vulnerable women in maternity care and improve outcomes for mother, babies and their families.
- Studies which explore barriers that vulnerable women encounter when accessing maternity services and also what strategies can act as facilitators to care access.

2.0 Methods
A rapid evidence review was undertaken by identifying systematic reviews and guidance considering the evidence on provision of maternity care for vulnerable women and their families. The rapid review aimed to identify systematic reviews including vulnerable groups in general and also systematic reviews which were focused on specific groups of women who may have additional care needs as detailed in table 1. Due to the rapid timeline for the review, the reviews looking at vulnerable groups in general were prioritised and full data extraction and detailed critical appraisal was conducted. Reviews including specific groups were examined in less detail and their analysis is limited to providing a reference for the reader and distilling their key points. In-depth review of these specific groups would warrant future research.
This rapid review sought to identify both systematic reviews which aimed to examine evaluations of interventions/actions to in order to determine effectiveness and also meta-syntheses which explored women and health professionals’ views and experiences in order to explore acceptability and sustainability. Due to the time constraints of this rapid review, the most up-to-date and comprehensive review was selected for each group. Additional reviews would only be included if they contributed additional relevant material (e.g. different form of intervention for the same group). Ideally, if one review utilised a mixed-methods approach and included studies with both quantitative outcome data on effectiveness and also qualitative studies on views and experiences this review was selected. However, in the case that only separate intervention and views/experiences reviews were identified, both were included.

The search strategy involved a database search, examination of the Cochrane Pregnancy and Childbirth Group’s reviews, examination of the Campbell Collaboration’s reviews and a search of the websites of the following organisations: NICE, SIGN, RCOG, RCPH, RCM, RCN, BAPM, NPEU and Department of Health. The protocol for the review is detailed in table 1.

Table 1. Rapid Review Protocol.

<table>
<thead>
<tr>
<th>Details</th>
<th>Additional Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Review question</strong></td>
<td>Vulnerable women include the following population groups:</td>
</tr>
<tr>
<td>1. What recommendations can be made regarding the optimal model of care for vulnerable women and their babies?</td>
<td>• socially disadvantaged</td>
</tr>
<tr>
<td>2. What recommendations can be made regarding how to configure services and the workforce to provide effective, equitable, sustainable and acceptable care for vulnerable women and their babies?</td>
<td>• substance or alcohol misuse</td>
</tr>
<tr>
<td>These questions will be answered by reviewing the following types of studies:</td>
<td>• refugees or recent arrival as a migrant</td>
</tr>
<tr>
<td>• Interventions/actions/strategies that aim to engage vulnerable women in maternity care and improve outcomes for mother, babies and their families.</td>
<td>• physical disabilities</td>
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<tr>
<td>• Exploration of barriers and facilitators to care</td>
<td>• language barriers</td>
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<td></td>
<td>• learning disabilities</td>
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<td></td>
<td>• mental illness</td>
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<td>• teenage mothers</td>
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<td>• experiencing domestic abuse</td>
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<td>• Homelessness</td>
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<td>• Gypsy/Travellers</td>
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<td>• sex workers</td>
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<td>• In the criminal justice system.</td>
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<tr>
<td><strong>Objectives</strong></td>
<td>To distil core principles and practice recommendations that can lead to effective, equitable, sustainable and acceptable care provision for vulnerable women with additional care needs.</td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td>English</td>
</tr>
<tr>
<td><strong>Study design</strong></td>
<td>• Systematic reviews of RCTs, cluster-controlled trials, quasi-randomised controlled trials, observational studies.</td>
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<tr>
<td></td>
<td>If there is a lack of systematic reviews in this subject area then primary studies and then case studies will be sought by contacting experts and examining</td>
</tr>
<tr>
<td>Status</td>
<td>Systematic reviews of qualitative studies with mothers and their families, and/or healthcare professionals.</td>
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<tr>
<td>-----------------</td>
<td>-------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Population</td>
<td>Papers published in academic journals and reports published by NICE, SIGN, RCOG, RCM, RCN and NPEU.</td>
</tr>
<tr>
<td>Intervention</td>
<td>Women with complex social factors or mental health problems and their babies.</td>
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<tr>
<td>Comparator</td>
<td>For question 1 the intervention/strategy/action of interest includes strategies to engage women in maternity services and improve outcomes for them and their babies.</td>
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<tr>
<td>Outcomes</td>
<td>The comparator would be care as usual for all questions.</td>
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<tr>
<td>Other criteria for inclusion/exclusion of studies</td>
<td>Infant morbidity includes preterm birth, low birthweight and admission to neonatal unit.</td>
</tr>
<tr>
<td>Review Strategies</td>
<td>Promotion of normal physiological processes includes spontaneous vaginal delivery, skin to skin contact, breastfeeding initiation, education and exclusivity.</td>
</tr>
<tr>
<td>Other criteria for inclusion/exclusion of studies</td>
<td>Maternal mortality.</td>
</tr>
<tr>
<td>Other criteria for inclusion/exclusion of studies</td>
<td>Maternal morbidity.</td>
</tr>
<tr>
<td>Other criteria for inclusion/exclusion of studies</td>
<td>Maternal health related behaviours.</td>
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<tr>
<td>Other criteria for inclusion/exclusion of studies</td>
<td>Maternal wellbeing.</td>
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<tr>
<td>Other criteria for inclusion/exclusion of studies</td>
<td>Infant mortality.</td>
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<td>Other criteria for inclusion/exclusion of studies</td>
<td>Sudden Infant Death Syndrome.</td>
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<tr>
<td>Other criteria for inclusion/exclusion of studies</td>
<td>Infant morbidity.</td>
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<tr>
<td>Other criteria for inclusion/exclusion of studies</td>
<td>Wider family wellbeing.</td>
</tr>
<tr>
<td>Other criteria for inclusion/exclusion of studies</td>
<td>Promotion of normal physiological processes balanced by appropriate use of interventions where indicated.</td>
</tr>
<tr>
<td>Other criteria for inclusion/exclusion of studies</td>
<td>Measures of infant-parent attachment and engagement.</td>
</tr>
<tr>
<td>Other criteria for inclusion/exclusion of studies</td>
<td>Time of first contact with services.</td>
</tr>
<tr>
<td>Other criteria for inclusion/exclusion of studies</td>
<td>Longer term social, cognitive and behavioural outcomes.</td>
</tr>
<tr>
<td>Other criteria for inclusion/exclusion of studies</td>
<td>Families’ views and experiences of services.</td>
</tr>
<tr>
<td>Other criteria for inclusion/exclusion of studies</td>
<td>Staff views and experiences of services.</td>
</tr>
<tr>
<td>Other criteria for inclusion/exclusion of studies</td>
<td>Exclude evidence from resource poor/low income countries.</td>
</tr>
<tr>
<td>Other criteria for inclusion/exclusion of studies</td>
<td>Date limit 2000.</td>
</tr>
<tr>
<td>Other criteria for inclusion/exclusion of studies</td>
<td>Exclude conference abstracts.</td>
</tr>
<tr>
<td>Other criteria for inclusion/exclusion of studies</td>
<td>Cochrane Pregnancy and Childbirth group will be searched. Following databases will be searched: MEDLINE, CINAHL and PsycINFO. The websites of NICE, RCOG, RCM and the RCN will be searched. The Scottish Government’s consultation document will be examined. Subject experts will be asked to identify key pieces of work, in particular from the grey literature.</td>
</tr>
</tbody>
</table>
Data on all included reviews will be extracted into evidence tables. A narrative summary will be presented. and comprehensive review will be included. Additional reviews will only be included if they are of a higher standard and/or contribute additional material to the review.

Critical Appraisal

- The NICE methodology checklist for systematic reviews and meta-analyses will be used to assess study quality for systematic reviews.
- Quality of clinical guidelines will be assessed using Greenhalgh’s (2014) checklist for set of clinical guidelines.

Checklist by Greenhalgh is based partly on the AGREE criteria.

3.0 Findings
3.1 Search results
This section provides a description of the records identified by each database or source and the selection process. Figure 3.1 illustrates the study selection process.

3.1.1 Database Search
MEDLINE and CINAHL were searched using a combination of index and free-text terms. In addition systematic review filters were added to the CINAHL and MEDLINE searches. See Appendix 1 for the full search strategy. After de-duplication 585 records were screened on the basis of title and abstract. The full-texts of the remaining articles were then examined (n=47) and 31 more excluded. The majority of these were excluded because they did not focus on the provision of care for pregnant or recently pregnant women at a health system level and were instead focused on specific clinical interventions (n=15). Nine reviews were excluded because they were superseded by more recently published and comprehensive reviews, two were not systematic reviews, one review focused on teenage pregnancy prevention, one review was predominantly focused on mothers with children over eight and one review examined the impact of social support networks. In addition two reviews that appeared highly relevant had to be excluded as they had been removed from the Cochrane library due to flaws in methodological standards, synthesis of heterogeneous programmes and an approach to analysis which led to inaccurate conclusions. Specifically the review by Bennett et al. (2007) which looked at home-based support for disadvantaged adult mothers and the review by Macdonald et al. (2007) which examined home-based support for disadvantaged teenage mothers.

Of the included reviews, two examined interventions for disadvantaged and vulnerable groups in general (Hollowell et al., 2009, Oakley et al., 2009) and the remaining 13 addressed different aspects of care provision for specific vulnerable groups: women with substance and alcohol misuse problems (Gilinsky et al., 2011); women with disabilities (Breckenridge et al., 2014, Homeyard et al., 2016); women with mental health problems (Alderdice et al., 2013, Austin et al., 2008, Megnin-Viggars et al., 2015, Song et al., 2015, Thombs et al., 2014), young mothers (Allen et al., 2012, Rosenstock and van Manen, 2014, Sukhato et al., 2015) and women experiencing domestic abuse (Jahanfar et al., 2014, Taft et al., 2015). All the reviews were reviews of interventions with the exceptions of the reviews by Breckenridge et al. (2014), Homeyard et al. (2016), Megnin-Viggars et al. (2015) and Rosenstock and van Manen (2014), which also included syntheses of women’s views and experiences.
Records identified through database searching
n = 789

Records identified from Cochrane Pregnancy and childbirth group (n=685)

Additional records identified through other sources
n= 21
(NPEU = 2, NICE = 3, SIGN = 1, RCOG = 1, RCM = 1, RCN = 1, expert consultation = 12
[1 systematic review, 6 primary studies, 6 pieces of grey literature], reference lists =4)

Records after duplicates removed
n = 1263

Records screened
n = 1284

Records excluded
n = 1216

Full-text articles assessed for eligibility
n = 68
(database/Cochrane =47, other sources =21)

Full-text articles excluded, with reasons (n=31):
• Focused on specific interventions (n=16)
• Superseded by more comprehensive review (n=9)
• Not a systematic review (n=2)
• Population was not pregnant or recently pregnant women and/or their infants (n=2)
• Review withdrawn from Cochrane library (n=2)

Total number of records included in the review
n = 37
(database/Cochrane = 16, other sources =21)

Figure 3.1 Study Selection Process
3.1.2 Cochrane Pregnancy and Childbirth group

Titles and abstracts of all reviews published by the Cochrane Pregnancy and Childbirth group were screened for relevance to care provision for vulnerable groups. From this 27 full text reviews were retrieved for further scrutiny against the inclusion criteria (see Appendix 2). This included interventions/actions specific to vulnerable groups (n=11) and also reviews that focused on service provision generally for sub-group analyses specific to any vulnerable groups (n=16). Seven of the reviews of interventions/actions for vulnerable groups were also identified in the database search.

Following full text examination, nine of the eleven reviews on vulnerable groups were included in the review. Three of these focused on substance and alcohol misuse (Lui et al., 2008, Stade et al., 2009, Terplan and Lui, 2015), one on mental health problems (Austin et al., 2008), two on domestic abuse (Jahanfar et al., 2014, Taft et al., 2015) and three included interventions that were implemented in disadvantaged populations more generally (Hodnett et al., 2010, Mbuagbaw et al., 2015, Till et al., 2015). However, further inspection of the review by Mbuagbaw et al. identified that the majority of the interventions were implemented in low income countries and not applicable to a Scottish context (e.g. use of clean delivery kits). In addition, two of the records (Laken and Ager, 1995, Melnikow et al., 1997) were included in the Cochrane Review on incentives for increasing prenatal care use (Till et al, 2015). Therefore, only the three records reporting on two distinct studies implemented in a high income settings were examined (Kenyon et al., 2014, Kenyon et al., 2012, Klerman et al., 2001) and the review itself was excluded. The study by Klerman et al. was identified in the review by Hollowell et al. (2009) and will therefore not be considered further as an individual study. However, ELSIPS study (Kenyon et al., 2012, Kenyon et al., 2014) is recently published and not included in the other identified systematic reviews. It is an evaluation of a UK-based programme which provides lay support in pregnant women with social risk and was therefore considered pertinent to this review and considered in section 3.4. None of the 16 reviews on service provision generally included any sub-group analyses relevant to vulnerable population groups and are therefore not included in the review.

3.1.3 Campbell Collaboration

The Campbell Library was searched for reviews pertaining to pregnancy/ maternity care. Only one review was retrieved by the search (Scher et al., 2006), however, this was focused on adolescent pregnancy prevention and therefore did not meet the inclusion criteria.

3.1.5 NPEU

All systematic reviews published by the NPEU (n=47) were screened for relevance to the review question. Four reviews met the inclusion criteria: one review examined the effectiveness of antenatal care programmes for socially disadvantaged and vulnerable groups (Hollowell et al., 2011); one examined the effectiveness of interventions to increase early initiation of antenatal care in socially disadvantaged groups and vulnerable women (Oakley et al., 2009), one review specifically looked at interventions for pregnant women with disabilities (Malouf et al., 2014); and one review specifically looked at interventions for Black and Minority Ethnic Women including refugees and women with limited English (Hollowell et al., 2012). Note the review by Oakley et al. was also published as an abstract and identified in the database search and the review by Hollowell et al. (2011) was also identified in the database search. The review by Hollowell et al. also reported at the time of its publication, a large scale evaluation of one of their included interventions (Family Nurse Partnership) was underway in England. As this study has now been completed and is pertinent to this rapid review, it will also be included as a primary study and discussed in section 3.4.
3.1.6 NICE
All NICE guidelines (n=15) related to maternity care were screened for relevance according to the inclusion/exclusion criteria. Three guidelines that met the inclusion criteria were identified. First, clinical guideline (110) ‘model for service provision for pregnant women with complex social factors’ (National Collaborating Centre for Women’s and Children’s Health, 2010), which specifically looked at access to care, barriers to care, maintaining contact with care, additional consultations, support and information needed for the following groups of women: those who misuse substances; women who are recent migrants, refugees, asylum seekers or speak little English; young women under 20; and women who experience domestic abuse. The evidence and recommendations for each of these groups reported in the guideline will be discussed in section 3.5.1. Secondly, clinical guideline (192) ‘antenatal and postnatal mental health: a NICE guideline on clinical management and service guidance’ (National Collaborating Centre for Mental Health, 2011), which examines treatments for mental health problems in the antenatal and postnatal period (i.e. pharmacological and psychological, including economic aspects), specific service-delivery systems and service-level interventions and provision of care for women with a mental health problem. Information relevant to core principles, organisation of care and care providers will be discussed in section 3.5.2. However, specific details on pharmacological and psychological interventions (e.g. cognitive behavioural therapy) are considered beyond the scope of this rapid review and will not be considered further. Finally, clinical guideline (PH11) ‘maternal and child nutrition’ has some material related to service provision for women socially disadvantaged groups, which will be included in this rapid review.

3.1.7 SIGN
Only one current SIGN guideline related to maternity care was identified: 127, management of perinatal mood disorders (SIGN, 2012).

3.1.8 RCOG
The titles of all guidelines (including green top and good practice guidelines) published by the RCOG were examined for relevance to this rapid review. Only one guideline (RCOG, 2011), which was on the management of women with mental health illness during pregnancy and the postnatal period was relevant to the review and is discussed in section 3.5.3.

3.1.9 RCM
The RCM website was searched for guidance specific to the rapid review. A recently published model entitled ‘Stepping up to Public Health’ was identified and is discussed in section 3.7 (RCM, 2016). Two position statements on women in custody (RCM, n.d.-a) and violence against women and girls (RCM, n.d.-b) were identified. However, as these are brief position statements, they will not be considered further, however, they do highlight the need for special consideration of these groups of women.

3.1.10 RCN
The RCN publications database was searched for titles related to pregnancy, maternal, maternity, antenatal and postnatal. Only one relevant publication was identified, the RCN Guidance on Pregnancy and Disability (RCN, 2007) was identified and will be discussed in section 3.5.4.

3.1.11 Expert consultation
Experts in fields relevant to the rapid review were also asked to identify any relevant material. The following additional publications were also identified as being relevant and are included in the narrative synthesis:
- Shaw et al. (2015). Systematic mixed-methods review of interventions, outcomes and experiences for imprisoned pregnant women (see section 3.3.2.7)
- Woodman and Scott (2012). Evidence Summary: Pregnancy and complex social factors (summary of NICE guidelines on pregnancy and complex social factors in a Scottish context; see section).
- Scott and Woodman (2010) Antenatal health inequalities: a rapid review of the evidence (see section 3.6)
- Pies et al. (2016). Growing a Best Babies Zone: Lessons Learned from the Pilot Phase of a Multi-Sector, Place-Based Initiative to Reduce Infant Mortality
- McCormick et al. (2012). Best practice at admission in labour for care of vulnerable women
- Relton et al. (2016). Cluster randomised controlled trial of a financial incentive for mothers to improve breast feeding in areas with low breastfeeding rates: the NOSH study protocol
- Carr et al. (2014). Outreach programmes for health improvement of Traveller Communities: a synthesis of evidence.

The following documents were identified as being relevant to the wider policy context of the review but are beyond the immediate scope of the narrative synthesis of this rapid review:
- Department of Health (2000). Framework for the Assessment of Children in Need and their Families. This document sets out the legislation, responsibilities and principles in safeguarding and assessing children’s needs. The assessment framework is based upon family and environmental factors, the child’s developmental needs and parenting capacity. There is guidance for assessment for children’s needs in general and also for children with additional needs.
- Scottish Government (2008). Early Years Framework. Includes approaches for improving outcomes that are initiated from pre-birth to eight years.
3.2 Overview and Nature of Included Evidence

From the combined database and Cochrane Pregnancy and Childbirth Group search, four reviews were included that examined the effectiveness of interventions for vulnerable and/or disadvantaged groups in general (Hodnett et al., 2010, Hollowell et al., 2009, Oakley et al., 2009, Till et al., 2015). These reviews were all of a high quality but many of the included studies had domains graded as high risk of bias. In addition reviews were identified which either provided the most comprehensive review of interventions and/or views and experiences of specific population groups or examined different aspects of care for different population groups (i.e. for mental health and alcohol/substance misuse a range of interventions were detailed in separate reviews). Specifically the following reviews were included:

- Six reviews examining different aspects of care for women with alcohol or substance misuse problems (Gilinsky et al., 2011, Lui et al., 2008, Niccols et al., 2012, Stade et al., 2009, Terplan and Lui, 2015, Turnbull and Osborn, 2012);
- One comprehensive review by the NPEU which examined interventions for Black and Ethnic Minority women (including Refugees, recent migrants and women with little English) as well as their and their views/experiences (Hollowell et al., 2012);
- Three reviews examining care/service provision for pregnant or post-partum women with different forms of disabilities (Breckenridge et al., 2014, Homeyard et al., 2016, Malouf et al., 2014);
- Five reviews examining different aspects of care for women with mental health problems (Alderdice et al., 2013, Austin et al., 2008, Byatt et al., 2015, Megnin-Viggars et al., 2015, Song et al., 2015);
- Three reviews examining different aspects of care for young mothers (Allen et al., 2012, Rosenstock and van Manen, 2014, Sukhato et al., 2015);
- Two reviews examining different aspects of domestic abuse (Jahanfar et al., 2014, Taft et al., 2015);
- One comprehensive review which aimed to examine experiences and outcomes of women in prison and their babies (Shaw et al., 2015).
- One comprehensive review containing scoping, economic and realist reviews which aimed to examine outreach programmes to improve the health of Gypsy/Travellers (2014).

Reviews were generally of a high quality, however, the included studies frequently had limitations that increased their risk of bias. The vast majority of reviews focused on examining effectiveness of interventions. Six reviews also included an examination of the views and experiences of the following groups: Black and Ethnic Minority women (Hollowell et al., 2012), women with disabilities (Breckenridge et al., 2014, Homeyard et al., 2016), women with mental health problems (Megnin-Viggars et al., 2015), adolescent mothers (Rosenstock and van Manen, 2014) and women in prison (Shaw et al., 2015). Gaps in review level literature were identified for homeless women and sex workers.

Ten additional primary studies were identified through the reference lists of included systematic reviews and the expert consultation, which supplemented the database search. First, Hollowell et al. (2011) identified a primary study by Robling et al. (2015), which was an evaluation of the Family Nurse Partnership programme in women aged 19 years living in England and was underway when their review was published. However, it has recently been completed and published, and will therefore be included as a primary study given that it has been conducted in a setting that is more applicable to a Scottish context, than the majority of studies which were included in the systematic reviews. Secondly, a recently published study by Pies et al. (2016) was also identified in the expert
consultation and reports on the pilot evaluation of a place-based strategy which uses an assets-based approach to disparities in infant mortality and birth outcomes. Such an approach was not identified in any of the systematic reviews and this study (Pies et al., 2016), is therefore innovative in its approach and worth considering. Thirdly, two papers on the ELSIPs study (Kenyon et al., 2012, Kenyon et al., 2014) were identified as being a recent study on the use of lay support for women from vulnerable groups in a NHS setting. Similarly, Spiby et al. (2015) recently published a mixed-methods evaluation of a doula support scheme in five areas of England. Fourthly, three studies around incentives for breastfeeding were identified (Relton et al, 2016, Whelan et al., 2014, Whitford et al., 2015) and these can be considered alongside the Cochrane Review on incentives for antenatal care use (Till et al., 2015, see section 3.3.1). Two additional primary studies on the Healthy Start programme were identified (McFadden et al., 2015, McFadden et al., 2014) and these should be considered alongside the NICE Guideline on Maternal and Infant Nutrition (NICE, 2008). The primary studies will be discussed in section 3.4.

In addition a number of relevant guidelines were identified, including one on provision of care for pregnant women with complex social factors (National Collaborating Centre for Women’s and Children’s Health, 2010), three related to mental health, (National Collaborating Centre for Mental Health, 2011, RCOG, 2011, SIGN, 2012) and one related to pregnancy and disabilities (RCN, 2007). In addition, the NICE guideline on maternal and child nutrition (NICE, 2008) also consider social disadvantage so this is also considered. Four other relevant pieces of grey literature were identified: an evidence summary of the NICE guidelines of pregnancy and complex social factors (Woodman and Scott, 2012) which is discussed in conjunction with the guideline in section 3.5.1; a rapid review of the evidence on antenatal health inequalities (Scott and Woodman, 2010; see section 3.6); a rapid review of the evidence around best practice at admission in labour for vulnerable women (McCormick et al., 2012; section 3.6); and a consultation project which aimed to scope and map the health needs and healthcare of childbearing women in prison (Albertson et al., 2014).

3.3 Systematic Reviews

3.3.1 Vulnerable and disadvantaged groups in general

Four reviews were identified that examined the effectiveness of interventions for vulnerable and/or disadvantaged women. Two of these reviews were conducted by the NPEU and examined interventions for antenatal care programmes to reduce infant mortality and its causes (Hollowell et al., 2009) and interventions to increase early initiation of antenatal care (Oakley et al., 2009). The other two reviews were Cochrane reviews, one of which examined the effectiveness of using incentives to increase prenatal care use (Till et al., 2015) and the other examined support during pregnancy for women at risk of low birthweight babies (Hodnett et al., 2010). Full details on the reviews are provided in the data extraction (see Appendix 3) and critical appraisal tables (see Appendix 4), however, a narrative summary will be provided here.

First, Oakley et al. (2009) aimed to identify and evaluate the evidence relating to the effectiveness of interventions, which aim to increase the early initiation of comprehensive antenatal care (defined as up to 20 weeks) in socially disadvantaged and vulnerable women. Only studies of interventions which would be relevant in an NHS context were included in the review. The review included interventions which were implemented for specific disadvantaged and vulnerable groups as well as more general groups of disadvantaged women including low SE status, living in deprived areas and social disadvantaged ethnic minority groups. A total of 16 studies were included in the review and there were predominantly conducted in the USA (n=14), with one being conducted in the UK (n=1) and one in Australia (n=1). The interventions were broadly grouped into outreach/community-based interventions (n=11) and alternative models of clinic care (n=5). The outreach/community-based interventions were further sub-divided into the following categories of intervention:
• Social support and/or home support visits by paraprofessionals or lay women (n=3)
• Provision of link workers in primary care and antenatal care settings (n=1)
• Mobile clinic (n=1)
• Multi component interventions that included two or more of outreach, case management, home visiting, risk screening, help with transportation to appointments, advocacy and social support.

The alternative models of clinic-based antenatal care were further sub-divided into the following categories:
• Teen pregnancy clinics (n=2)
• Collaborative care initiative involving continuity of prenatal care, case management and individualised education (n=1)
• Enhanced antenatal services which involved care coordination (n=2)

The majority of studies were cohort studies (n=12). The remaining studies were: before-and-after studies without a contemporaneous comparison group (n=2), before-and-after study with a contemporaneous comparison group (n=1), and retrospective observational cohort study with an additional pre-intervention comparator group (n=1). The majority of studies (n=15) were graded as poor quality and one was graded as mixed. The most commonly reported flaw was a lack of adjustment for potential confounding in the analysis of the effect of the intervention on the timing of initiation of antenatal care. The only study that was graded as mixed had a pre-intervention comparator. This study evaluated the Resource Mothers programme, which involved paraprofessional women delivering social support, health promotion/education and other assistance until one year post-birth to pregnant teens. The lay workers also helped mothers address barriers to accessing care by following up appointments and arranging transport. Oakley et al. (2009) reported that the intervention was effective in increasing access to care by the fourth month and had some potentially transferable elements but cautioned that the overall generalizability is unknown. Due to the low quality of the other included studies, the evidence for the other interventions is inconclusive. However, Oakley suggest that the following interventions have elements of potential relevance to the UK setting and potentially may affect the timing of the initiation of care:
• Mobile clinics which provide free walk-in or appointment services and can help reduce barriers to accessing care;
• Link workers situated in GP surgeries that act as facilitators and interpreters and can also provide an education role. This may be of particular use for some ethnic minority groups and women with language difficulties;
• Culturally appropriate community-based programmes in which lay woman encourage greater use of antenatal care and address cultural beliefs and practices. This may be of particular use for some ethnic minority groups.

However, it should be stressed that these were based on observational studies that are at a high risk of bias. Nevertheless, they may warrant further consideration and potentially a more robust evaluation.

Secondly, Hollowell et al. (2009) aimed to identify the best available evidence on the effectiveness of interventions focused on the delivery and organisation of antenatal care to reduce infant mortality, or one of its three major causes (preterm birth (PTB), congenital anomalies, sudden infant death syndrome/sudden unexpected death in infancy (SIDS/SUDI)) in socially disadvantaged and vulnerable groups of women and other groups defined in terms of pre-specified risk factors for adverse birth outcomes where the risk factor is strongly associated with social disadvantage. Only studies of interventions which would be relevant in an NHS context were included in the review. In
total, the review identified 40 records for 36 distinct studies. Again the majority of these were conducted in the USA (n=26), with four in the UK, four in Australia, one in Canada and one in Greece. The interventions were broadly grouped as being implemented in socioeconomically deprived populations (n=20) or for specific populations of interest (teenagers=9; substance users=4; indigenous Australians = 4; women who were HIV positive = 1). The interventions for women living in socioeconomically deprived areas were subdivided as being either implemented generally or for women at risk of preterm birth. The more general interventions for women in socioeconomically deprived areas were then subdivided into the following categories:

- Comprehensive antenatal care for:
  - Group antenatal care (n=2)
  - Multidisciplinary antenatal care with outreach services (n=1)
  - Nurse/Midwife antenatal clinics (n=1)
  - US public antenatal care programmes (note limited relevance to UK; n=2)
  - General antenatal clinics providing an enhanced range of services (n=1)

- Services provided as an adjunct to comprehensive antenatal care:
  - Case management/care co-ordination (n=2)
  - Nurse home visits (n=3)

The interventions for women at risk of preterm birth were further sub-divided into the following categories:

- Clinic-based care:
  - Broad, multifaceted care (includes education, regular visits, screening; n=3)
  - Programme with focus on patient education plus additional visits/pelvic examinations (n=1)
  - Hospital clinic versus managed care (intervention not described; n=1)
  - Home visits/telephone support (n=3)

The interventions for special at risk populations were divided as follows:

- Teen clinics (n=8)
- Adolescent Group Antenatal Care (n=1)
- Nutrition programme for teenagers (n=1)
- Adjunct substance abuse programmes (n=4)
- Interventions for indigenous women (n=2)

The majority of studies were of an observational design: retrospective cohort (n = 9), prospective cohort (n=6), unspecified cohort (n=1), mixed/prospective (n=1), before-and-after (n=1). Nine studies were RCTs. Study quality was generally poor with only two of the RCTs graded as ‘good’. Six of the RCTs and six of the observational studies were graded as ‘mixed’ and the remaining studies were all graded as ‘poor’ meaning they had a least one major design weakness. Out of the two RCTs which were graded ‘good’, one (Kafatos et al., 1991) looked at nurse home visits in Greece (in a model similar to the Family Nurse Partnership model) and one (Oakley et al., 1990) looked at social support in the form of home visits and telephone calls for women at risk of preterm birth, however, neither demonstrated any beneficial effect on preterm birth (neonatal/infant mortality not assessed).

However, from the studies that were graded as ‘mixed’ some beneficial effects were identified. Hollowell et al. (2009) therefore argue that although the evidence can only be regarded as inconclusive, the following four models of comprehensive antenatal could be considered promising:
• Group antenatal care for socioeconomically disadvantaged women. This is based on findings from a well-conducted RCT (Ickovics et al., 2007) which had a well-defined care model that would be transferrable to the NHS.

• Broad-multifaceted clinic-based preterm birth prevention programmes for disadvantaged women with additional clinical risk factors for preterm birth. This was based on two similar interventions which targeted a wide range of risk factors and would be potentially transferrable to the NHS (Hobel et al., 1994, Klerman et al., 2001).

• Comprehensive multidisciplinary antenatal care with outreach services. This is based on the evaluation of the Temple Infant Parent Support Services Programme which included community outreach, health education, and clinical care for the entire family of very high risk women (Reece et al., 2002).

• Comprehensive general antenatal clinical care providing an enhanced range of services. This is based upon the evaluation of New York’s Prenatal Care Assistance Programme (Newschaffer et al., 1998), which included patient outreach, meeting the American College of Obstetrician and Gynaecologist’s standards, development of care plans, nutritional services, health education, psychological assessment and HIV services and financial incentives to accredited care providers. Note that Hollowell et al. caution that the use of financial incentives to encourage care providers to offer enhanced services is potentially transferable but unclear if the specific services offered would be relevant.

In addition, Hollowell et al. (2009) suggest that the following three interventions provided as an adjunct to standard care, could also be considered promising:

• Nutritional programmes. Two nutritional programmes may potentially offer some promise: the Higgins Nutrition Intervention Programme which was implemented for teenagers (Dubois et al., 1997) and the Florina Intervention programme (Kafatos et al., 1989). Note that, Hollowell et al. caution that as the Florina programme was implemented in an isolated agricultural population, it may not be generalizable to urban populations. However, given the rurality of some parts of Scotland, it could arguably be considered as having relevance.

• Maternity care co-ordination. This is based upon a single study which helped women on Medicaid in the USA receive services and also provided social and emotional support (Buescher et al., 1991). However, Hollowell et al. note that it is unclear how far this can be generalised out with the USA.

Again it needs to be stressed that these are all based on studies graded as ‘mixed’, which means that they may be an increased risk of bias. In addition, both the reviews by Oakley et al. (2009) and Hollowell et al. (2009) acknowledge that their approach to reviewing a broad category of interventions rather than identifying specific interventions a priori, may mean some potentially relevant studies were omitted. However, this more general approach is consistent with the methodology of this rapid review and we aim to supplement this by providing a summary of reviews of more specific interventions in section 3.3.2. In addition should be considered that this review was conducted in 2009. However, key primary studies that have been published since have been identified and will be discussed in section 3.4. Despite, the reviews’ (Hollowell et al., Oakley et al.) limitations and the limitations of the included studies, these reviews do provide some guidance on approaches to models of antenatal care provision which may confer benefits for disadvantaged groups in terms of earlier initiation of antenatal care and also reducing preterm birth and infant mortality.
Hodnett et al. (2010) conducted a more specific review which aimed to assess effects of programmes offering additional social support compared with routine care, for pregnant women believed at high risk for giving birth to babies that are either preterm or weigh less than 2500 gm, or both, at birth. The review identified 17 studies, all of which were implemented in socially disadvantaged populations in a range of countries including: Australia, UK, France, Latin America, South Africa and the USA. In the majority of trials (n=16), support was provided by a healthcare professional. This was often a nurse or midwife (n=11), but in four trials was provided by social workers and in one trial provided by a multidisciplinary team of nurses, psychologists, midwives, and specially trained lay women. Only one study utilised only specially trained lay women. Studies were all RCTs and were generally at low or unclear risk of bias across the different domains of the Cochrane Risk of Bias tool.

The social support interventions conferred no significant beneficial effect in reduction in preterm babies, reduction in low birthweight babies, perinatal mortality, antenatal depression or satisfaction with care. However, social support was associated with a significantly decreased likelihood of a caesarean birth and antenatal hospital admission. Hodnett et al. suggest that the apparent lack of effect could be because social support is not enough to negate the effects of social deprivation experienced by most of the participants in the included studies. Alternatively, Hodnett et al. suggest that the apparent lack of effect could be attributable to difficulties in identifying women at risk of preterm birth, and therefore many of the women included in these trials were not actually at high risk of these outcomes at all. However, significant beneficial effects were identified for both caesarean birth and antenatal hospital admission. Hodnett et al. suggest that this could be because social support reduces anxiety and fear around birth, which could increase the chance of having a normal vaginal birth. Reductions in hospital admission are potentially attributable to early detection of complications, which can then be managed on an outpatient basis.

Finally, Till et al. (2015) aimed to determine whether incentives are an effective tool to increase utilization of timely prenatal care among women. The review identified five studies (note only four included in meta-analysis) which were conducted in low income communities in the USA (n=3), Mexico (n=1) and Honduras (n=1). Three of the trials offered cash incentives (either in the form of cash transfer or shop vouchers) for attendance at prenatal appointments. The other two studies offered non-cash incentives in the form of a baby carrier, taxicab voucher or a baby blanket for attendance at prenatal appointments. Three trials were RCT and two were cluster-controlled trials. Risk of bias was assessed using the Cochrane Risk of Bias tool and was high across the studies for blinding of participants and outcome assessment. Two studies were at high risk of selective reporting and two were judged as unclear risk of bias for random sequence generation and allocation concealment. All other domains were judged as low risk of bias.

None of the studies examined the impact of incentives on neonatal outcomes. However, data was available on: adequacy of antenatal care (defined by number of procedures such as history-taking, diagnostic tests, physical examination, immunizations, iron supplements, lactation counselling and family planning); frequency of prenatal care; initiation of prenatal care; return for postpartum care; and Caesarean delivery. Significant benefits favouring the intervention were found for adequacy of antenatal care and frequency of antenatal care (note these were only based on one study each). Caesarean section rates were significantly higher in intervention participants and there was no significant effect on initiation of prenatal care or return for postpartum care. Till et al. (2015) caution the applicability of the studies as the largest two trials were conducted in low income, Hispanic communities in Central America. Therefore, whilst the approach may show limited promise in terms of improving adequacy and increasing frequency of antenatal care, further evidence is necessary.
from a more comparable context. Indeed, one trial currently underway is the NOSH study and this is examining the use of incentives to encourage breastfeeding in low-income areas (Relton et al. 2016) and is detailed in section 3.4.

3.3.2 Specific Vulnerable Population Groups
Additional reviews on interventions and views/experiences of specific vulnerable groups were identified and will be detailed in this section. It should be noted, that due to the confines of this rapid review, these were not subject to the same level of scrutiny as the reviews presented in 3.3.1.

3.3.2.1. Women with Substance and Alcohol Misuse Problems
Six reviews covering different aspects of care for women with substance and/or alcohol misuse problems. Specifically, this involved the following: one Cochrane Systematic Review on home visits during pregnancy and afterbirth for women with substance and/or alcohol misuse problems (Turnbull and Osborn, 2012); one Cochrane review on psychosocial interventions for pregnant women enrolled in alcohol treatment programmes (Lui et al., 2008); psychological/educational programmes for pregnant women enrolled in alcohol treatment programmes (Stade et al., 2009); one Cochrane review on psychosocial interventions for pregnant women in illicit drug treatment programmes (Terplan and Lui, 2015), one systematic review of integrated programmes for mothers with substance abuse issues and their children (Niccols et al., 2012) and one systematic review on interventions delivered during antenatal care to reduce alcohol consumption (Gilinsky et al., 2011).

Whilst the reviews themselves were well conducted, the included studies were generally of low quality and little in the way of positive intervention effects was reported. This therefore highlights a lack of good evidence for the management of pregnant or post-partum women with substance and/or alcohol misuse problems. The findings from each of these reviews are summarised in table 3.1.
Table 3.1 Systematic reviews of interventions for women with alcohol or substance misuse problems

<table>
<thead>
<tr>
<th>Review</th>
<th>No. of studies</th>
<th>Population</th>
<th>Intervention</th>
<th>Results</th>
<th>Risk of bias of included studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turnbull &amp; Osborn</td>
<td>7</td>
<td>Women with drug or alcohol problems who are pregnant or have recently given birth</td>
<td>Home visits delivered by health professionals or lay workers and included aspects such as education, advocacy, assessment and health advice. Majority of interventions delivered post-partum.</td>
<td>No significant differences in illicit drug use, continued alcohol use, failure to enrol in a drug treatment programme, not breastfeeding at six months, infants not in care of their biological mother, non-voluntary foster care or infant death. Individual studies reported beneficial effects in involvement with child protection services and failure to use postpartum contraception.</td>
<td>Only two studies were considered to be low risk of bias. All other studies had substantial methodological limitations</td>
</tr>
<tr>
<td>Galinsky et al.</td>
<td>8</td>
<td>Pregnant women attending for antenatal care who were drinking any amount of alcohol</td>
<td>Any intervention delivered in antenatal care: health promotion and psychosocial interventions (e.g. brief interventions, MI, health education, social support, etc.).</td>
<td>Evidence from a small number of studies that single session face-to-face brief motivational interviewing was beneficial in maintaining abstinence from alcohol.</td>
<td>Only one study rated as low risk of bias and one as moderate. All others were high risk of bias.</td>
</tr>
<tr>
<td>Lui et al.</td>
<td>0</td>
<td>Pregnant women enrolled in alcohol treatment programmes</td>
<td>Psychosocial programmes including contingency management, motivational interviewing, psychotherapy and behavioural therapy.</td>
<td>No studies that met the inclusion criteria. The majority of studies were excluded as the women receiving the intervention were not in an alcohol treatment programme or were not RCTs. There is therefore a lack of good evidence in this area.</td>
<td>N/A</td>
</tr>
<tr>
<td>Stade et al.</td>
<td>4</td>
<td>Pregnant women or women planning to get pregnant who drink alcohol</td>
<td>Psychological (e.g. CBT, psychotherapy) or educational (e.g. motivational enhancement interventions, individual, family or group education strategies) interventions</td>
<td>Results from individual studies suggest that psychological and educational programmes may encourage women to abstain from alcohol in pregnancy. However, there was no consistent evidence for outcomes related to alcohol consumption.</td>
<td>Studies generally at high or unclear risk of bias across the domains</td>
</tr>
<tr>
<td>Terplan et al.</td>
<td>14</td>
<td>Pregnant women enrolled in illicit drug treatment programmes</td>
<td>Psychosocial interventions of any kind (e.g. contingency management, motivational interviewing)</td>
<td>No significant difference in treatment retention, abstinence or improvements in neonatal outcomes (i.e. preterm birth, positive neonatal toxicology at delivery, low birth weight, or neonatal admission)</td>
<td>Studies were generally at unclear risk of bias across the domains</td>
</tr>
<tr>
<td>Authors</td>
<td>Study ID</td>
<td>Description</td>
<td>Findings</td>
<td>Additional Notes</td>
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<tr>
<td>Niccols et al.</td>
<td>13</td>
<td>Pregnant women or mothers enrolled in with substance abuse issues</td>
<td>Integrated programmes that combine either pregnancy or parenting services with addiction services. Either residential or outpatient.</td>
<td>Studies which compared integrated programmes to no treatment, reported a positive intervention effect on development and growth parameters (length, weight, head circumference). Studies which compared integrated versus non-integrated programmes report a small improvement in emotional and behaviour functioning in children whose mothers were receiving the integrated programme.</td>
<td>Authors used JADAD scale, however, this is generally considered a poor assessment of study quality. Studies were generally graded as low/moderate.</td>
</tr>
</tbody>
</table>
3.3.2.2 Women from Ethnic Minority Groups (including refugees, asylum seekers and women who speak little English)

A comprehensive review by the NPEU (Hollowell et al., 2012) which examined interventions that aimed to address barriers to early initiation of antenatal care by women from ethnic minorities (including refugees, asylum seekers and women who speak little English) and also examined literature exploring their views and experiences. The review adopted a mixed-methods approach which involved three stages. First, an initial scoping review identified published research on disadvantaged and vulnerable UK women’s views about antenatal care (including barriers and facilitators to care). Second, an in-depth thematic analysis was conducted to focus on a sub-set of views studies that had included Black and Minority Ethnic women in the UK, including Refugees, recent migrants and women who speak little English. The themes identified provided a framework which identified barriers, in particular those related to initiation of care. Finally, a cross-study synthesis aimed to ‘mesh’ the results of the review on antenatal care initiation (discussed in 3.3.1; Oakley et al., 2009) with the barriers identified in the thematic analysis.

A total of 36 views studies related to experiences of Black and Minority Ethnic women were identified, however, 15 of these did not meet the minimum quality criteria. Therefore 21 studies were included in the thematic analysis. The following barriers to antenatal care were identified (Hollowell et al., 2012):

- Complexity and unfamiliarity of the healthcare system. This can be compounded by a lack of awareness by healthcare professionals that women need information regarding how to access services.
- Lack of knowledge by some women regarding the need for antenatal care. This can be due to a perception that pregnancy is natural and medical intervention not necessary, concern that screening could be harmful or a believing that pregnancy is a private matter.
- Inability (due to lack of resources) or unwillingness to travel to services outwith local community.
- Perception that healthcare professionals will not be respectful. This arises from language/communication problems and the lack of opportunity, support or encouragement to be able explain themselves, ask questions or take control of their care.
- Lack of provision of interpreters and inappropriate reliance on family members (including children) for translation.
- Concern that cultural preferences (e.g. for a female healthcare professional) may not be respected.

Additional barriers faced by asylum seekers and sometimes refugees include:

- Lack of fixed address making G.P. registration difficult.
- Lack of financial resources to travel to appointments or buy food if attending appointment means hostel meal is missed.
- Lack of knowledge by healthcare professionals’ regarding asylum seekers’ and refugees’ rights and entitlements.
- Lack of knowledge by the women regarding their rights.
- Concern that utilising healthcare services may affect outcome of their application or refugee status.
Following the cross-study synthesis, Hollowell et al. (2012) report that the following approaches may help address the barriers identified:

- **Lack/Inaccessibility of local services:**
  - Local services provided by outreach workers (including advocates or case managers).
  - Mobile women’s health van.
  - Help with transportation to appointments
  - Local ‘neighbourhood’ clinic

- **Lack of knowledge of services or importance of antenatal care:**
  - Case finding approach (particularly for refugees and asylum seekers) followed by assistance to navigate healthcare system.
  - Outreach workers (with or without an advocacy role).

- **Lack of empathy in the system:**
  - Outreach workers (e.g. advocates, home visitors) trained to provide emotional and social support and a personalized service throughout pregnancy and after birth
  - Clinics targeting specific needs of women.

- **Values, beliefs, cultural preferences:**
  - Outreach workers recruited from the same population and who share same values and beliefs.
  - Staff trained in and/or recruited for cultural sensitivity.
  - Education provided by outreach workers to help women understand the need for antenatal and/or medical care during pregnancy.

- **Language/communication barriers**
  - Bilingual linkworkers
  - Bilingual outreach workers or healthcare staff
  - The use of advocates to attend consultations with women
  - Assistance with form filling for women with low literacy.

Whilst some of these approaches do show some promise, it should be noted that there are limitations in terms of the studies upon which they are based (see 3.3.1). Therefore, Hollowell et al. (2012) do caution that they would require further development and testing before implementation and evaluation in the NHS.

3.3.2.3 Women with Disabilities

In total three reviews related to care/service provision for pregnant or post-partum women with different forms of disabilities. First, one review was identified that examined interventions for women with disabilities (Malouf et al., 2014). Secondly, one examined views and experiences of women with disabilities who also experience domestic abuse (Breckenridge et al., 2014). Finally, Homeyard et al. (2016), examined the evidence on the provision of antenatal care among women with intellectual disabilities.

One review (Malouf et al., 2014) was identified that aimed to examine the effectiveness of healthcare interventions to improve outcomes for pregnant and postnatal women with disability and for their families. Specifically, the interventions had to aim to tackle disabling barriers rather than the actual health condition. The systematic review only identified three studies, which were all single centre RCTs. One study was rated as good quality, one as medium and one as low quality. There was considerable heterogeneity in the interventions and participants and no meta-analysis was conducted. One study included women with a low IQ (n=40) who were in a low income family and
the intervention involved allocating women with a family service worker for a year. The intervention was associated with significant improvements in Nursing Child Assessment Teaching Score. One study involved massage for HIV-exposed babies (n=28), which reported a significant increase in weight gain and two factors of the Brazelton Assessment Scale. The final study was an educational video to promote attachment for HIV positive women, which was associated with significant positive effects in terms of eye contact with the baby, attention and sensitivity reactions. However, it should be cautioned that this study was at high risk of bias and had a very small sample size (n=24). This review demonstrates a paucity of evidence around interventions/actions for pregnant or post-partum women with a disability.

Breckenridge et al. (2014) aimed to examine the barriers/facilitators disabled women experiencing domestic abuse face when accessing maternity services, as well as the consequences of delayed care and the effectiveness of existing strategies to enhance access to services. In total eleven studies were identified, eight of these used quantitative methods, one used a qualitative approach and two used mixed-methods. The following were identified as barriers to accessing care:

- Mental health diagnosis
- Poor relationships with health professionals which was a result of the following:
  - Lack of confidence in care providers’ knowledge that their disability had on reproductive health
  - Refusal of treatment by healthcare professionals due to disability
  - Poor communication including lack of patience, lack of empathy and limited knowledge
- Environmental barriers:
  - Services ill-equipped to provide services for women with disabilities
  - Difficulties in attending services due to lack of appropriate transportation
  - Care environment not appropriate (e.g. inaccessible offices, improper examination tables and inadequate equipment)
- Domestic abuse. This can potentially exert an independent effect or increase the impact of the physical disability as the women may be reliant on the partner for assistance to attend appointments.

Conversely, the following were identified as facilitators to accessing care:

- Health consequence of domestic abuse prompt use of services (e.g. due to physical injury)
- Social support (note this is harder for women with physical disabilities as they are more likely to have small support networks)
- Accessibility of services

The review identified little in the way of empirical evidence around strategies to improve access to care for women with physical disabilities who experience domestic abuse, however, based upon the studies identified, Breckenridge et al. (2014) suggest that future strategies for improvement should focus on: understanding women’s reasons for accessing care; fostering positive relationships; being women-centred; promoting environmental accessibility; and improving the strength of the evidence base.

Finally, Homeyard et al. (2016) aimed to examine both women’s and midwives’ experiences on the provision of antenatal care for women with intellectual difficulties. In total 16 studies were included (9 qualitative, 2 mixed methods, 5 quantitative). Five studies were conducted in the UK and the
remaining were conducted in Sweden, Australia and Ireland. The following four themes were identified:

- **In the Family Way.** Women reported negative responses to their pregnancy from health professionals. This can lead to delays in seeking or attending for care.
- **Knowledge and advocacy.** Whilst some women described positive interactions with midwifery staff, more commonly they described negative encounters due to a lack of awareness and sensitivity around the disability. Women also reported that conversations with health professionals could leave them feeling scared, lonely and embarrassed. In addition women were not consistently given information they could understand and were anxious about asking questions due to time requirements.
- **Midwives’ educational needs.** Midwives reported a lack of knowledge and education in caring for pregnant women with intellectual difficulties and were keen to have more guidance to help them provide effective care.
- **Midwives’ attitudes.** Some midwives held attitudes that may have put women off accessing services (e.g. believing that women with intellectual difficulties could not manage the maternal role).

It should be noted that there are limitations in the included studies in terms of recruitment (i.e. snowballing or self-identification techniques used) and the majority of the studies focused on women’s views and not midwives’ experiences. Nevertheless, together with the findings by Breckenridge et al. (2014), we can suggest that the healthcare providers caring for women with disabilities, need to be educated on the condition, be empathetic to the women’s needs and also empower women to gain sufficient information and access to services that best meet their needs.

3.3.2.4 Women with Mental Health Problems

In total five systematic reviews examining different aspects of care provision were identified and included in this rapid review (note reviews examining specific pharmacological or clinical treatments were not included in this review as they do not focus on service provision): enhancing participation in depression care in perinatal settings (Byatt et al., 2015); psychosocial interventions for women with postpartum stress (Song et al., 2015); antenatal psychosocial assessment (Austin et al., 2008); a review of reviews of midwife-led interventions to improve maternal mental health and well-being (Alderdice et al., 2013); and a meta-synthesis of women’s experiences of care for mental health problems in the antenatal and postnatal period (Megnin-Viggars et al., 2015).

First, Austin et al. (2008) aimed to evaluate the impact of antenatal psychosocial assessment on perinatal mental health morbidity. Psychosocial assessment is designed to identify women who show early symptoms of or at risk from mental health problems. This then can enable the use of early intervention, support and treatment. Only two studies (both of which were RCTs) were identified and both were considered to be at high risk of bias. Re-analysis of the data identified no significant intervention effects in post-natal depression rates (as measured by a scale), however, the antenatal ALPHA tool was associated with a non-significant trend of increasing clinician awareness of ‘high level’ psychosocial risk.

Secondly, Byatt et al. (2015) examined the effectiveness of interventions delivered in outpatient perinatal care settings and whether these are associated with increased engagement in depression care. A total of 17 studies were included, the majority of which were observational or quasi-experimental so the results of this review should be interpreted with caution. The authors grouped the interventions into three groups: 1. those that only implement screening but with no intervention; 2. those with low-intensity intervention that target one or two barriers (patient,
healthcare provider or practice); and 3. those that targeted all three barriers. If only screening took place, an average of 22% (range 13.8%-33.0%) of women who screened positive had a mental health visit. If interventions also targeted patient and healthcare provider barriers with patient engagement strategies the average number of women accessing mental health care increased to 44%. Similarly, use of on-site assessments and perinatal care provider training increased mental health care access by 49% and 54% respectively. Finally, services that included provision of resources to patients, perinatal care provider training, on-site assessment, and access to mental health consultation for perinatal care providers as components of the intervention were associated with mental health assessment attendance rates of 72% and 90%. However, this aspect was just based on two studies and there is no assessment as to whether this resulted in improved mental health or experience of care. Whilst, there are limitations in the individual studies, this review therefore suggests that strategies to enhance engagement in mental health care should operate on multiple levels to address the multiple barriers that often exist.

Thirdly, Song et al. (2015) aimed to assess the effects of psychosocial interventions with the aim of reducing the intensity of stress in mothers during the postpartum period. The psychosocial interventions involved healthcare professionals working with mothers to enhance their physical and mental health, promote effective adaptation, enrich newborn health, and strengthen the relationships among family members. Thirteen RCTs were identified and included in the meta-analysis. These were conducted in a range of countries: Australia, USA, Norway, Taiwan, UK, Canada and the Netherlands. There was a significant beneficial intervention effect on postpartum stress (standard mean difference: −1.66, 95% CI: −2.74, −0.57). However, heterogeneity was very high (I²=93%). Further sub-group analysis, identified that supportive stress management conferred a significant beneficial effect (standard mean difference: −0.59, 95% CI −0.94, −0.23) but there was no significant effect in either educational programmes or interaction promoting programmes. This may suggest that the supportive stress management programmes drove the positive effect in the main analysis. However, this review is limited as the results of the critical appraisal are not detailed, it is therefore difficult to draw any conclusions without a knowledge of risk of bias.

Alderdice et al. (2013) aimed to identify interventions that could enable midwives to provide effective support in a mental health and wellbeing context. A total of 32 systematic reviews were identified, however, these varied considerably in terms of quality and therefore Alderdice do not provide any definitive recommendations. However, the following interventions were felt to warrant further consideration:

- Midwifery led models of care for preventing postnatal depression
- Psychological and psychosocial interventions for treating postnatal depression
- Mind–body interventions in pregnancy
- Use of exercise
- Facilitation/co-ordination of parent-training programme

Crucially Alderdice et al. (2013) also note that many of these interventions would require further training for midwives. Due to the lack of conclusive evidence, the authors argue that the priority should be to raise awareness of maternal mental health and also the role that the midwife has in promoting mental health and wellbeing.

Finally, Megnin-Viggars et al. (2015) aimed to synthesise qualitative evidence on experiences of care for women with (or at risk of developing) antenatal or postnatal mental health problems across a range of disorders (including non-psychotic mental disorders). This review was specific to a UK setting so only studies conducted in a UK primary, secondary or tertiary healthcare service were
included. Following screening, 39 studies were included in the review. The majority of these focused on depression, predominantly in the post-natal period (n=13). However, reviews on severe mental illness, predominantly post-partum psychosis (n=5), PTSD (n=2), substance misuse (n=1) and eating disorder (n=1) were included. Seventeen studies also focused on women who were at risk of developing a mental health problem (e.g. if they had experienced a pregnancy loss or traumatic birth, or experienced threshold symptoms). Studies were assessed as being generally of a moderate to high quality. Seven key themes were identified:

- **Collaboration between professionals and continuity of care.** Continuity of care was associated with more positive experiences for the management of depression in the antenatal or postnatal period. Lack of continuity could act as a barrier to disclosure of symptoms. Access to a single named professional was felt beneficial by women with post-partum psychosis.

- **Stigma and fears about losing their baby acting as a barrier to disclosure.** This was identified as one of the strongest barriers to access of services and could lead to women waiting until a crisis point before disclosing symptoms. The diagnosis of depression acted as a threat to the image of coping women wanted to portray to health professionals. This need to protect an image of coping was even greater in South Asian mothers. Women with severe mental illness were particularly cognizant of stigma and fears about hospitalisation and losing custody and this could lead to concealment of illness. Lack of experience of healthcare workers in treating severe mental illness could lead to delays in referral.

- **Healthcare professionals unable or unwilling to address psychological needs.** Women reported experiences of GPs or health visitors being too busy or unwilling to listen. Women were also unsure of the role of the health visitor and whether this went beyond physical health care. There were also system level barriers in terms of difficulties in getting an appointment.

- **Focus on babies over mothers.** Women reported that they felt healthcare professionals focused on the needs of the baby over the needs of the mother. Some women reported the process of undertaking the Edinburgh Postnatal Depression Scale as reassuring as it switched the focus to them.

- **Importance of non-judgemental and compassionate support from healthcare professionals.** Women reported positive experiences when they had a good relationship with the healthcare professional. This could be developed through use of rapport, knowledgeable staff, flexible boundaries, being available and willing to listen, being empathetic and non-judgemental, and having the opportunity to build trust and respect. Poor relationships with healthcare professionals were conversely associated with negative experiences.

- **Unmet need for information across the care pathway.** Women reported not knowing what to do when symptoms worsened and lack of awareness made it difficult to explain how they were feeling to health professionals. Gaps in professional knowledge were reported around lack of information on pharmacological treatment. In particular, women with postpartum psychosis reported an unmet need for information tailored to their treatment stage and provision for information to partners/families.

- **Importance of service user involvement in treatment decisions and individualised treatment.** Women highlighted the need for individualized services and being involved in decisions about treatment. In particular, women with post-partum depression felt the side effects of anti-psychotics could interfere with their role as a mother. The need to consider and address cultural, environmental and practical barriers that may prevent women with depression
from being able to access and engage in treatment, particularly psychological or social therapies, was also highlighted.

This was a well-conducted review and Megnin-Viggars et al. (2015) conclude that the opportunity to develop trusting relationships with healthcare professionals who help empower the woman to care for her baby in a non-judgemental and empathetic manner would help improve women with mental health problem’s experiences with care. In addition, information provision to both the women themselves, for partners/families and healthcare professionals will help provide care tailored to a woman’s individual needs.

3.3.2.5 Young Mothers

Three distinct reviews relating to care provision for young mothers were identified: organisation of services (Allen et al., 2011); psychosocial interventions (Sukhato et al., 2015); and adolescent parenting in the neonatal intensive care unit (Rosenstock and van Manen, 2014).

First, Allen et al. (2011) examined if the way maternity care is provided for young women affects maternal and neonatal outcomes. The methods of care provision included Midwifery Group Practice (MGP; also referred to as caseload midwifery), Group Antenatal Care and Young Women’s Clinic. Nine studies were identified, the majority of which were observational designs. Only one study examined MGP and did report lower than (national) average preterm births and higher rates of vaginal births. However, it did not collect any control group or benchmark data so it is not possible to independently assess any programme effects on outcomes. Two studies examined the effect on Group Antenatal Care and reported positive effects on preterm birth. Similarly, the four studies of the Young Women’s Clinic demonstrated a positive effect on preterm birth and one study reported a positive effect on rates of breastfeeding at 28 days. No intervention effects were detected for birthweight. However, it should be cautioned that no formal critical appraisal was conducted by the authors on the included studies and as the majority of studies were observational, the impact of confounders must be considered.

Secondly, Sukhato et al. (2015) aimed to assess the efficacy of psychosocial interventions in reducing risk of low birth weight (LBW) and preterm birth (PTB) in teenage pregnancy. This included interventions which had psychological components (e.g. supportive psychotherapy and psycho-education) and/or social interventions (e.g. social skills training and interventions that result in better use of health care services). Five RCTs were included in the review, the majority of which were conducted in the US. Studies were generally at low risk of bias across the domains, except for incomplete outcome data. Significant positive intervention effect was identified for low birth weight (RR: 0.60; 95% CI: 0.38-0.92). Mean birth weight was associated with a non-significant reduction in pre-term birth in intervention participants (RR: 0.67, 95% CI: 0.42-1.05); as was mean birth weight (RR: 0.67; 95% CI: 0.42-1.05) and mean gestational age at delivery (unstandardized mean difference: 0.29 weeks, 95% CI: -0.43, 1.02). However, there was no further analysis as to which components (i.e. psychological or social skills) of interventions were more likely to be effective.

Finally, Rosenstock and van Manen (2014) aimed to explore adolescent parenting in the NICU. In total 22 studies (quantitative and qualitative) were included. The majority of these focused on stress and anxiety. The authors reported that the studies suggested that adolescent parents were less likely to ask questions and less likely to place importance on their needs. Provision of access to the NICU was associated with more affectionate behaviours, however, adolescent mothers were less likely to breastfeed. One intervention, COPE (Creating Opportunity for Parent Empowerment), was associated with decreased anxiety. Whilst it should be stressed that this was a low quality review, it
does highlight the need for extra effort to be made when engaging adolescent parents in the care of a baby in a NICU.

3.3.2.6 Domestic Abuse

Two distinct reviews related to domestic abuse were identified, one which looked at the effectiveness of interventions (Jahanfar et al., 2014), and one which examined whether screening for domestic abuse increases identification, and referral to support agencies, or improve women’s subsequent wellbeing and not cause harm (Taft et al., 2015).

First, Jahanfar et al. (2014) aimed to examine the effectiveness and safety of interventions in preventing or reducing domestic violence against pregnant women. Ten studies including RCTs, cluster-controlled trials and quasi-randomised trials were identified, however, only seven contributed data to the review. Studies were generally at low or unclear risk of bias across the domains, except for blinding of participants and outcomes. The majority of studies were conducted in the USA, with the exception of one conducted in Peru and one in Hong Kong. Interventions utilised a range of approaches and involved either psychological therapy, brief interventions, case management, empowerment training, home visitation or computer-based interventions. Due to the heterogeneous nature of the interventions and the outcome measures, studies were not pooled. Results were generally inconsistent and differences between groups were not statistically significant. There was limited evidence for reduction of episodes of violence (physical, sexual, and/or psychological) and prevention of violence during and up to one year after pregnancy in women who had received psychotherapy and for reduction in psychological abuse and minor physical violence scores in women who received an empowerment intervention. There was little information on pregnancy and neonatal outcomes and no evidence to suggest that interventions had negative/harmful effect.

Taft et al. (2013) aimed to assess the effectiveness of screening for intimate partner violence conducted within healthcare settings for identification, referral to support agencies and health outcomes for women. Eleven studies were included in the review, six of which were classed as being at high risk of bias. The majority of studies were RCTs (n=9) and the other two were quasi-randomised trials. Studies were conducted in the USA (n=5), Canada (n=4), Japan (n=1) and New Zealand (n=1). A range of screening tools were used and the majority were completed using a computer-assisted self-completion screening process, with high results passed to health care providers. Other studies used face-to-face screening or less commonly, written self-completion. Six studies contained sufficiently comparable data to be combined and this suggested that screening increased identification of women experiencing domestic abuse (RR 2.33; 95% CI 1.40-3.89), particularly in antenatal settings (RR 4.26, 95% CI 1.76-10.31). However, this did not translate into a significantly increased referral rate. Only two studies examined for domestic abuse after screening, however, there was no significant reduction. Only one study examined for adverse effects and suggested that there was no evidence of adverse effects, in women who underwent screening. Therefore, whilst screening may increase the rate of identification of abuse, there was no evidence this translated into any long term benefit. There is therefore a need for further research to examine the benefit of screening combined with follow-on services.

3.3.2.7 Criminal Justice System

In a relatively recently published systematic review, Shaw et al. (2015), aimed to examine both the experiences of women who have been incarcerated during pregnancy and/or give birth in prison, and also the outcomes for both women and babies, in the context of new innovations in maternity service delivery. A total of thirteen studies were identified initially, however, following critical
appraisal, a further six were excluded which left a total of seven. Studies were conducted either in the USA or the UK. Four of the included studies were quantitative, two were qualitative and one was a mixed-methods intervention, however, the quantitative intervention data was considered low quality by Shaw et al. who excluded it from the review. There was therefore a lack of good quality intervention data, however, from the data that does exist, Shaw et al., suggest that prison may give some clinical benefits to some women in terms of higher birthweight babies if they were admitted earlier in pregnancy and received antenatal care. However, this was not consistent across the studies. In addition, women were more likely to be depressed and have negative emotions, particularly if they were to be separated from the baby. However, negative emotions could be mediated by positive relationships between prison staff and prison regime/policy. Conversely, negative relationships with prison staff could worsen the situation for the women. The only intervention identified was a doula for pregnant women in a USA prison. Whilst the quantitative data was of low quality, the qualitative data was deemed by Shaw et al. to be an acceptable quality and this suggested that the doulas helped make the experience more positive for women. This overall lack of data for interventions, highlights a need for more research in this area.

3.3.2.8 Gypsy/Travellers
Carr et al. (2014) conducted a scoping, economic and realist review which aimed to quantify and classify the evidence relating to Traveller Communities’ health; estimate costs of different types of outreach and consider what would be cost-effective; and develop explanations of how, for whom and in what circumstances outreach works best. A wide range of databases were searched and in total 278 articles were included in the scoping review. The majority of this literature was concerned with needs assessments of Gypsy/Traveller communities and very little in regard to evaluation of outreach programmes and what was available was either based upon anecdotal accounts or very low quality studies. This is consistent with emerging findings of another systematic review on engagement of Gypsy/Travellers in health services which is currently being conducted by the authors of this rapid review and their colleagues.

In terms of the economic evaluation (Carr et al., 2014), suggest that the use of mobile clinics were associated with the highest costs and there was little in the way of evidence that they are cost-effective or even wanted for use by the Gypsy/Traveller community themselves. The authors argue that full-time outreach workers would have moderate costs but this may not result in any health benefits. Whilst practice nurses could facilitate access to primary care and be cost-effective, Carr et al., suggest that the evidence indicated that outreach is more effective when delivered by outreach workers of the same ethnicity. Therefore the training and use of outreach workers from Gypsy/Traveller communities particularly to promote vaccination and uptake of antenatal care, warrants further evaluation. Other potentially low cost strategies that may be effective include: texting reminder appointments; cultural awareness sessions for staff; and additional payments to GPs for registering Travellers. Finally, the realist synthesis led to the development of an explanatory framework as to why outreach may or may not lead to certain outcomes depending on particular circumstances. In particular, the extent to which workers are trusted by the Gypsy/Traveller community and whether or not there is flexibility in the intervention focus contribute to the effectiveness of the intervention. Crucially, Carr et al. (2014) also argue that the findings from these reviews can be translated to other marginalised groups in the development of interventions.

3.4 Primary Studies
Primary studies on a range of interventions conducted mainly in NHS settings were identified and felt to be pertinent to this rapid review. First, Robling et al. (2016) aimed to the effectiveness of the Family Nurse Partnership (FNP) programme which was adapted for use in an English setting.
Participants were first-time pregnant women aged 19 years or under. Pregnant women of this age were selected as they can act as a proxy for income. The FNP programme was developed in the USA and involves intensive home visiting, which involves 64 structured home visits from early pregnancy until the children are two years old. The programme is based upon theories of human ecology, self-efficacy and human attachment and aims to promote self-efficacy through education and modelling activities. Family Nurses could either be midwives or nurses at Band 7 grade and received additional training to conduct the programme. Previous, studies in the USA and the Netherlands, have demonstrated positive results for mothers and babies and FNP has since been rolled-out in England in an adapted form. These adaptations included adapting the written materials for UK English speaking women, provision of psychological support via specialist supervision for the Family Nurses, safeguarding supervision and incorporating FNP into local clinical governance arrangements.

To assess the effectiveness of FNP in an English setting, Robling et al. (2016) conducted a pragmatic, non-blinded, randomised controlled trial. In total 808 women were randomised to the FNP group and 810 women to the usual care group. The intervention conferred no benefit in terms of smoking in late pregnancy, birthweight, attendance at the emergency department or admission to hospital at least once before second birthday or second pregnancy within two years, breastfeeding initiation and duration, prenatal attachment score, maternal-child interaction outcomes or referral to social services. However, small beneficial effects were found for cognitive development concern at 18 months only (adjusted OR 0.61, 95% CI 0.32-1.11), language development concerns at 12 months (adjusted OR 0.50, 95% CI 0.59-1.40) and 18 months (OR 0.66, 95% CI 0.48-0.90) and early language milestone scale score (adjusted difference in means 4.49, p = 0.027). Robling et al., therefore argue that due to the lack of effect the programme cannot be considered cost-effective. The authors suggest that the apparent lack of effect in the English setting compared to the more positive effects identified in the US trials, may potentially be a result of a comparatively less disadvantaged population being included in this study (N.B. age was used as a proxy for deprivation). Moreover, unlike in the USA, teenage mothers in the UK can access health and social services (including specialist teenage midwives) and this may have diluted the intervention effect. It should also be noted that the trial by Robling et al., has been criticised for a highly medical focus for the outcomes and it has been suggested by Barlow et al. (2016) that inclusion of more psychological outcomes (including direct observation) may have detected positive effects on parenting and parent-child relationships.

Secondly, Pies et al. (2016) conducted a pilot evaluation of the Best Baby Zone (BBZ) Initiative which was launched in neighbourhoods with poor birth outcomes in three cities in the USA. The BBZ approach acknowledges the impact of social, environmental and economic factors that contribute to poor birth outcomes and incorporates both a place-based approach with life-course theory. There are three strategies to the BBZ approach:

- Concentrating efforts and resources in a zone (e.g. local residents and organizations)
- Addressing social determinants of health by partnering organizations in other sectors (e.g. community services, economic development, education and early care, and health services)
- ‘Cultivating a public health social movement’ through developing local leaders and understanding the associations between community conditions and birth outcomes.

To date, each area has developed resident-strategies (including needs and health impact assessments) and adapted more traditional mother child health interventions. This paper (Pies et al., 2016) provides some guidance on the implementation of such an approach, however, it is still very
much in the early phases and evaluation of such an approach is necessary before any conclusions can be drawn.

Secondly, two papers by Kenyon et al. (Kenyon et al., 2012, Kenyon et al., 2014) report on the ELSIPS (Evaluating Lay Support in Pregnant women with Social Risk (ELSIPS)) trial. This was a parallel-arm individual randomised RCT conducted in three primary trusts in Birmingham. A total of 662 nulliparous women <28 weeks gestation who were assessed by a midwife as having a specific social risk factor (including housing problems, lack of social support, smoking, low maternal weight or obesity, teenage, late booking) were randomised to receive additional care from a pregnancy outreach worker (POW) who provided support including home visits. The POW also organised antenatal visits and advised on lifestyle changes. They also provided help with financial, legal or benefits problems and with housing and helped provide support with care of the newborn including breastfeeding. Another 662 women were randomised to receive routine care. The study was considered low risk of bias across all domains except for blinding of participants, however, given the nature of the intervention this would not be feasible. The incidence of postnatal depression was reduced by 6% in the intervention group overall (RR 0.72, p = 0.01). There was no significant difference in antenatal care attendance, however, this was high in both the control and intervention groups (RR 1.01, 95% CI 0.91-1.13). There was no significant effect on low birth weight (RR 0.92, 95% CI 0.74-1.14). It should be noted that this data only represents early results of this study. It is therefore suggested that further results should be examined once published.

Similarly, Spiby et al. (2015) also examined the impact of a doula service for disadvantaged women in England, in terms of implications for the NHS, health and social impacts for women, impacts on doulas and the processes of implementing and ensuring sustainability of such a service. A mixed-methods approach was utilised and involved routine data collection and focus groups (n=62), interviews (n=41), and questionnaires (n=255) with women, midwives, doula service staff and managers, commissioners and local champions. Service data suggested that women who received doula support had reduced rates of epidurals and caesarean section as well as smoking at birth compared to the reference groups, however, these differences were non-significant. In addition, there were no significant differences in incidence of low birthweight babies or admission to the NICU. However, breastfeeding initiation and continuing at six weeks was significantly higher in the women receiving doula support (n=330, although not an intention to treat analysis). The qualitative data indicated that women were generally positive about the doula support, in particular the continuity and flexibility of care the doulas provided as well as being listened to in a non-judgemental manner. In addition doulas also helped women in terms of self-esteem, isolation and accessing services. The doulas who responded to the evaluation were positive about their role and generally felt the training had been sufficient and that they were supported. The midwives who took part in the study were also positive about the support doulas provided. It should be noted that the response rate, in particular from the doulas was low and this may mean the views of all those involved were not captured. Finally, whilst there were some potential benefits of the doula service, the cost-effectiveness evaluation estimated an additional cost per birth of £1862. However, this evaluation did focus on short-term outcomes, it is plausible that the doula support may confer a longer term benefit for other outcomes and further research is needed to address this.

Thirdly, two recent papers report on the implementation of the Healthy Start scheme in the Yorkshire and the Humber region and in London (McFadden et al., 2014, McFadden et al., 2015). Healthy Start provides low income families with vouchers for fruit, vegetables, milk and vitamins. These studies aimed to examine if Healthy Start food vouchers are reaching the families who need them; if they have the potential to improve nutrition for low-income women and young children
(McFadden et al., 2014); and the real-life view of the operation of the scheme (McFadden et al., 2015). In total 49 health or social care practitioners took part in focus groups, 620 health or social care practitioners took part in an online consultation, 77 women and 4 men took part in participatory workshops, 25 women who did not speak English took part in focus groups and three women from Gypsy/Traveller communities took part in telephone interviews. The following themes relating to the ability of Healthy Start vouchers to reduce nutritional inequalities were identified (McFadden et al., 2014):

- **Accessibility of Healthy Start**
  - Eligibility. Participants generally felt eligibility was clear for families in receipt of qualifying welfare benefits. However, for those in receipt of tax credits it was confusing and the threshold discriminated against those in low paid work. It was felt that eligibility should extend to child’s fifth birthday. Practitioners were concerned that those with uncertain immigration status were not eligible.
  - Awareness of Healthy Start. Women generally appeared to find out about Healthy Start from practitioners. However, sometimes the information could get lost in an information overload at the first antenatal contact. Women who did not speak English were less likely to be aware of the programme. Practitioners spoke of the difficulty in publicising Healthy Start to women with low literacy or those who did not speak English.
  - Application procession. The application process acting as a barrier particularly in women who did not speak English or with poor literacy. Some women also reported having to apply for a second time.

- **Using Healthy Start vouchers**
  - Influence of Healthy Start vouchers on food choice. Majority of participants reported that the vouchers enabled them to buy better quality and a greater variety of fruit and vegetables. The vouchers also served as a reminder to eat a healthy diet. Healthy Start had a bigger influence on those who breastfed exclusively as they did not spend the vouchers on formula.
  - Accessing retail options. Most women spent their vouchers at major supermarkets and for many this was a convenient option. However, for those living rurally this could be difficult as the local shops or market stalls were not registered to receive the vouchers. This was also an issue for women from ethnic minority backgrounds who could not find culturally acceptable fruit and vegetables in supermarkets.

In addition, the following themes related to barriers and strategies for implementation of Healthy Start vitamins were reported (McFadden et al., 2015):

- **Barriers to uptake of Healthy Start Vitamins**
  - Complex ordering and reimbursement systems for healthcare provider organisations in terms of providing the vitamins
  - Short shelf-life of vitamins meant many out of date before they were used
  - Many women did not recognise what the vitamin coupon was
  - Insufficient supply of vitamins to the healthcare provider organisations
  - Vitamins only available for collection from the health centre
  - The statutory responsibility for distributing Healthy Start vitamins rested with Primary Care Trusts and in some areas this made it difficult for midwives, who are employed by hospitals, to obtain vitamins for pregnant women
  - Perception of low cost-effectiveness by practitioners
Suggested strategies to improve uptake of vitamin supplements

- Provision of free vitamin supplementation for all pregnant women and young children
- More accessible distribution outlets (e.g. supermarkets, pharmacies, children’s centres, GP surgeries)
- Routinely given out by midwives or health visitors

These studies (McFadden et al., 2014, McFadden et al., 2015) therefore provide guidance on how to enhance the implementation of Healthy Start. However, as they did not aim to evaluate the impact of Healthy Start on health outcomes for women and young children or to conduct an economic evaluation, further research is needed on the effectiveness of Healthy Start.

Finally, the use of financial incentives to increase breastfeeding is a relatively new area of research. Whelan et al. (2015) examined healthcare providers view on offering financial incentives to women living in low-income areas (n=53) through semi-structured group interviews. Thematic analysis identified that financial incentives could have both positive and negative impacts on a mother’s relationship with her family, baby and healthcare provider. Some providers were very positive and felt that the provision of incentives could be effective in certain groups with low rates of breastfeeding. Other healthcare providers felt negatively towards giving financial incentives for health related behaviours in general. In addition, some felt the practical implementation of the scheme would be difficult in terms of how it would be monitored and the implication this could have on the relationship between healthcare provider and mother. Others had concerns that the incentive would be spent on alcohol or cigarettes or put excess pressure on women to breastfeed especially if they were struggling financially. Indeed, it was suggested that vouchers instead of cash incentives may be more appropriate. Some participants felt the incentives could have the added benefit of acting as a ‘connector’ in terms of engaging the mother with breastfeeding support services or other community services. However, other participants, particularly those involved directly in providing breastfeeding support questioned whether it was ethical to provide incentives. On the other hand some participants felt that the incentives may highlight the importance of breastfeeding and help women to justify breastfeeding if under social pressure to stop. Conversely, a minority of participants felt the use of incentives could make breastfeeding appear unusual and make it difficult to change norms around it.

As part of the same study, Whitford (2015) reported on interviews and focus groups held with women of childbearing age (n=38). Women generally preferred vouchers to money as it allowed more control over how the incentive could be spent and also when they should receive the incentive. In terms of verification of breastfeeding, the women also noted difficulties in ways of proving feeding. They therefore felt that it should be based upon honesty and trust. The results from these focus groups (Whelan et al., 2015, Whitford, 2015) have informed the development of the Nourishing Start for Health (NOSH) scheme, which offers women living in low-income areas 5 x £40 shopping vouchers over a six month period. A cluster-controlled trial is currently underway in which electoral wards with low breastfeeding rates in the North of England were randomised and women living in the clusters allocated to intervention were invited to take part (Relton et al., 2016). Data collection is currently ongoing and it is suggested that the results of this study are monitored.
3.5 Guidelines

3.5.1 Pregnancy and Complex Social Factors

The NICE guideline on pregnancy and complex social factors aims to provide a model for service provision (National Collaborating Centre for Women’s and Children's Health, 2010). The guideline focuses on four exemplar populations:

- Women who are substance misusers (including drugs and/or alcohol)
- Recent migrants, refugees, asylum seekers, and women with little or no English
- Young women aged under 20
- Women experiencing domestic abuse.

However, in addition to providing specific recommendations for each of these groups, the guidelines also details some general principles for care that can be applied to all groups of vulnerable women with complex social factors. It should be noted that the majority of evidence upon which the recommendations are based is of very poor methodological quality and conducted out with the UK. Consequently, the economic analysis is very limited as at this stage it is not possible to determine, with any certainty, how effective any of the interventions would be if implemented in an NHS context. Nevertheless, it is important to be cognizant of the recommendations in the guideline which are detailed in Appendix 5.

Woodman and Scott (2012) provide a very helpful and detailed analysis of each of the evidence statements presented in the NICE guideline. The following is a brief summary of their analysis for each of the population groups:

- Pregnant women who misuse substances
  - Access to antenatal services and barriers to care
    - No good quality evidence.
    - The introduction of a Drugs Liaison Nurse appeared to contribute to the improved rate of first trimester bookings in a UK service.
    - Evidence suggests that women would value the following from staff: consistency; non-judgmental attitudes; reassurance about confidentiality and child protection concerns; information; and a high level of support.
  - Maintaining contact
    - No good quality evidence.
    - Inconsistent evidence that comprehensive treatment and support programmes within antenatal care may improve attendance
  - Additional consultations and support
    - No good quality evidence.
    - Some evidence suggest that provision of additional support may be associated with positive outcomes for infants

- Women who are recent migrants, asylum seekers or refugees, and women who have difficulty reading or speaking English:
  - Access to antenatal services and barriers to care
    - No evidence to suggest that interventions to improve access are effective in this group
    - Recent migrants, refugees, asylum seekers or those with little English are more likely to book late or do not attend antenatal classes
    - Continuity of carer important in overcoming barriers in this group of women
  - Maintaining contact
- Recent migrants, refugees, asylum seekers or those with little English value same aspects of antenatal care as women generally
  - Additional consultations and support
    - Inconclusive evidence about the effectiveness of specific programmes for migrant women

- Young women aged under 20
  - Access to antenatal services and barriers to care
    - No good quality evidence
    - Specialist services for young women which emphasise early initiation of care and a multifaceted community based service with home visits by trained lay workers resulted in earlier booking.
  - Maintaining contact
    - Some evidence to suggest that provision of antenatal classes designed for women under 20 years improves contact with antenatal care.
    - Limited evidence to suggest that specialist antenatal services are associated with improved contact
    - Very limited evidence that home visiting and provision of transport to and from antenatal services improves contact.
  - Additional consultations and support
    - Inconclusive evidence on effectiveness of additional consultations and support
  - Additional Information
    - Very limited evidence
    - Extensive antenatal education does not demonstrate a clinically significant impact on labour
    - Limited evidence to support self-administered drug and alcohol education in increasing knowledge and reducing self-reported drug use
    - Limited evidence comprehensive antenatal education programme which included an enhanced breastfeeding component in terms of higher levels of the initiation of breastfeeding.
    - No evidence to suggest what additional information should be provided to partners.

- Women who experience domestic violence
  - Access to antenatal services and barriers to care
    - No evidence specifically for interventions to improve access to maternity services for women who experience domestic abuse
    - Limited evidence that staff education and training can improve staff confidence, skills and attitudes.
    - Good evidence on the barriers to care
  - Maintaining contact
    - Limited evidence from US to suggest that there is risk that women will disengage from services when they feel their consultation has been unhelpful
  - Additional consultations and support
    - Limited and poor quality evidence. However, evidence suggests that education, advocacy, counselling or community referral may have the potential to adopt safety behaviours
  - Additional information
    - Very limited evidence only which suggests that the provision of information may increase the adoption of safety behaviours.
To conclude, this evidence summary (Woodman and Scott, 2012) highlights the lack of good quality evidence identified in the NICE guideline on pregnancy and complex social factors (National Collaborating Centre for Women’s and Children’s Health, 2010). This is consistent with the findings of the database search conducted in this rapid review (see section 3.3) and makes evident the need for further development and evaluations of interventions for disadvantaged women.

3.5.2 Mental Health

Three guidelines related to the provision of mental health services for women in antenatal or postnatal care settings were identified. First, the SIGN guidelines (SIGN, 2012) were focused on mood disorders in women receiving antenatal or postnatal care. The content of the guidelines was around specific aspects of clinical diagnosis, treatment and management and was therefore considered to be beyond the remit of this rapid review as it did not include detail on organisation of care.

Second, the NICE guideline (National Collaborating Centre for Mental Health, 2011) on antenatal and postnatal mental health aims to provide recommendations for recognition, assessment, care and treatment of mental health problems in women during pregnancy and up to one year post-partum. The majority of recommendations are focused on assessment and clinical treatment of specific conditions, which is beyond the remit of this rapid review. However, the following recommendations on principles of care are made which concern values and philosophy of care, organisation of care and service providers and are therefore of relevance to this review:

- **Supporting women and their partners, families and carers:**
  - Acknowledge the woman's role in caring for her baby and support her to do this in a non-judgmental and compassionate way
  - Involve the woman and, if she agrees, her partner, family or carer, in all decisions about her care and the care of her baby.
  - When working with girls and young women with a mental health problem in pregnancy or the postnatal period:
    - be familiar with local and national guidelines on confidentiality and the rights of the child
    - be aware of the recommendations in section 1.4 of the guideline on pregnancy and complex social factors (NICE guideline CG110)
    - ensure continuity of care for the mental health problem if care is transferred from adolescent to adult services.
  - Take into account and, if appropriate, assess and address the needs of partners, families and carers that might affect a woman with a mental health problem in pregnancy and the postnatal period. These include:
    - the welfare of the baby and other dependent children and adults
    - the role of the partner, family or carer in providing support
    - the potential effect of any mental health problem on the woman's relationship with her partner, family or carer

- **Coordinated care:**
  - Develop an integrated care plan for a woman with a mental health problem in pregnancy and the postnatal period that sets out:
    - the care and treatment for the mental health problem
    - the roles of all healthcare professionals, including who is responsible for:
      - coordinating the integrated care plan
      - the schedule of monitoring
providing the interventions and agreeing the outcomes with the woman

- The healthcare professional responsible for coordinating the integrated care plan should ensure that:
  - everyone involved in a woman's care is aware of their responsibilities
  - there is effective sharing of information with all services involved and with the woman herself
  - mental health (including mental wellbeing) is taken into account as part of all care plans
  - all interventions for mental health problems are delivered in a timely manner, taking into account the stage of the pregnancy or age of the baby

These recommendations are based upon qualitative evidence around women’s views and experiences identified in the NICE guidance (National Collaborating Centre for Mental Health, 2011) and were comprehensive and of a high quality. In addition, they were consistent with the experience of the service user members and clinical and academic staff on the Guideline Development Group.

Finally, the RCOG good practice guidance on management of women with mental health issues during pregnancy and the postnatal period (RCOG, 2011), describes principles of service organisation for health providers. These guidelines are based upon the NICE guideline on antenatal and postnatal mental health (National Collaborating Centre for Mental Health, 2011), the Confidential Enquiry into Maternal and Child Health and the RCOG report on Standards for Maternity Care. Specific to service organisation the following recommendations are made (RCOG, p.5-6):

- Care pathway during pregnancy:
  - Locally agreed arrangements should be in place between maternity, specialised perinatal mental health services (or, in their absence, general psychiatric services) and primary care on the management of pregnant women on antidepressant medication. These may include written guidance to indicate risks associated with specific drugs during and after the pregnancy, availability of telephone advice or, where indicated, assessment by specialised perinatal mental health services.
  - Locally agreed arrangements should be in place between maternity, specialised perinatal mental health services (or, in their absence, general psychiatric services) and primary care on the psychological management of women with mild to moderate anxiety or depression in pregnancy, including patient information on self-help strategies and access to local primary care mental health/psychology services.
  - Referral pathways should be in place for care by the local specialised perinatal mental health service, or the general psychiatry service where a specialised service does not exist. In addition, maternity services should be able to discuss cases where the need for referral is uncertain. Contact details for the specialised perinatal mental health service or, in its absence, a consultant psychiatrist with special interest in psychiatric disorders of pregnancy should be clearly signposted in each maternity unit.
  - For women with severe and enduring mental disorders, an advance directive, covering interventions in pregnancy/labour in the event the woman becomes incompetent to give informed consent, should be considered at a time when she is stable.

- Care pathway after delivery
  - Women at high risk of postpartum major mental illness should be managed along high-risk pathways in maternity care.
Women at high risk of postpartum major mental illness should have a detailed plan for their late pregnancy and early postpartum psychiatric management, agreed with the woman and shared with maternity services, the community midwifery team, GP, health visitor, mental health services and the woman herself. With the woman’s agreement, a copy of the plan should be kept in her hand-held records. The plan should identify what support will be in place and who to contact if problems arise, together with their contact details (including out of hours), and address decisions on medication management in late pregnancy, the immediate postpartum period and with regard to breastfeeding.

A locally agreed protocol should be in place with child safeguarding services allowing for their involvement where there are issues of concern for women with pre-existing mental illness or at high risk of postpartum mental illness. Mental illness of itself need not be an indication for referral.

Each organisation should have a list of local support groups in the voluntary sector which could provide support to women and the service during pregnancy and following childbirth.

- **Staffing and training**
  - Maternity services should work closely with specialised perinatal mental health services to develop local care pathways and training programmes, and to ensure that there is a seamless clinical service along the patient journey during and following pregnancy. A named obstetrician should be identified to lead service and training development along with the named perinatal psychiatrist and midwifery lead (who may be the local disability midwife). The important role played by primary care should be fully recognised.
  - All maternity staff should have basic training in the identification of current, and past history of, mental health problems in pregnancy and the postpartum period and when to refer to mental health and primary care services. Training should be provided locally in collaboration with specialised perinatal mental health services.
  - Midwifery staff should be trained to support women during pregnancy and to aid decision making during labour and after delivery.

- **Commissioning of services**
  - There is an overlap between health and social problems. The provision of care for women with mental health problems should be through integrated multi-stakeholder teams, ideally reflecting the needs of the population.
  - Healthcare commissioners should quality assure service provision by using auditable standards and metrics.

It should be noted that it is not detailed in the guideline (RCOG, 2011) what specific piece of evidence each recommendation is based upon. However, the guideline does suggest a clear need for joined-up care across different services.

### 3.5.3 Maternal and Infant Nutrition

The NICE guideline on maternal and infant nutrition aims to address the disparities in the nutrition of low-income and other disadvantaged groups of pregnant and breastfeeding mothers compared with the general population (NICE, 2008). When possible, the guidelines were based upon scientific data, systematically derived evidence of effectiveness and context-sensitive evidence on the economic costs and benefits. When this data was not available, recommendations were based upon professional opinion and expert judgement. In particular, there was a lack of studies on improving...
the diet of young children, pregnant and breastfeeding women. In addition much of the evidence was based upon non-UK studies. This guideline covers mothers and children up to age five years, and also includes some specific aspects of clinical management that are beyond the scope of this guideline. However, the following recommendations are specific to organisation of services and care providers for vulnerable pregnant women and mothers with young infants:

- **Training**
  - Professional bodies should ensure health professionals have the appropriate knowledge and skills to give advice on the following:
    - the nutritional needs of women and the importance of a balanced diet before, during and after pregnancy (including the need for suitable folic acid supplements)
    - the rationale for recommending certain dietary supplements (for example, vitamin D) to pregnant and breastfeeding women
    - the nutritional needs of infants and young children
    - breastfeeding management, using the Baby Friendly Initiative (BFI) training as a minimum standard ([www.babyfriendly.org.uk](http://www.babyfriendly.org.uk))
    - strategies for changing people’s eating behaviour, particularly by offering practical, food-based advice.
  - As part of their continuing professional development, train midwives, health visitors and support workers in breastfeeding management, using BFI training as a minimum standard.
  - As part of their continuing professional development, train health professionals, including doctors, dietitians and pharmacists, to promote and support breastfeeding, using BFI training as a minimum standard.

- **Healthy Start**
  - The local organisation responsibility for Healthy Start should ensure an adequate supply of both types of Healthy Start vitamin supplements (for women and for children from 6 months to 4 years) is available for distribution by health professionals when they see pregnant women and parents of children under 4 years.
  - The local organisation responsibility for Healthy Start should ensure an adequate supply of Healthy Start application forms is available and that the uptake of Healthy Start benefits is regularly audited.
  - Health professionals should advise pregnant women and parents of children under 4 years about the Healthy Start scheme. They should ensure all women who may be eligible receive an application form as early as possible in pregnancy.
  - Health professionals should use every opportunity they have to offer those parents who are eligible for the Healthy Start scheme practical, tailored information, support and advice on:
    - how to use Healthy Start vouchers to increase their fruit and vegetable intake
    - how to initiate and maintain breastfeeding
    - how to introduce foods in addition to milk as part of a progressively varied diet when infants are 6 months old.
  - Health professionals should offer the maternal Healthy Start vitamin supplement (folic acid, vitamins C and D) to pregnant women who are (or who may be) eligible.

- **Diet in Pregnancy**
Early in pregnancy midwives, obstetricians, GPs, health visitors and dieticians should discuss the woman's diet and eating habits and find out and address any concerns she may have about her diet.

Midwives, obstetricians, GPs, health visitors and dieticians should provide information on the benefits of a healthy diet and practical advice on how to eat healthily throughout pregnancy. This should be tailored to the woman’s circumstances. The advice should include: eat five portions of fruit and vegetables a day and one portion of oily fish (for example, mackerel, sardines, pilchards, herring, trout or salmon) a week.

- Breastfeeding

Commissioners and managers of maternity and children's services should undertake the following for women who are unlikely to breastfeed (e.g. those who have low educational achievement and those from disadvantaged groups):

- Provide local, easily accessible breastfeeding peer support programmes and ensure peer supporters are part of a multidisciplinary team.
- Ensure peer supporters:
  - attend a recognised, externally accredited training course in breastfeeding peer support
  - contact new mothers directly within 48 hours of their transfer home (or within 48 hours of a home birth)
  - offer mothers ongoing support according to their individual needs. This could be delivered face-to-face, via telephone or through local groups
  - can consult a health professional and are provided with ongoing support
  - gain appropriate child protection clearance.

NHS boards responsible for maternity care and GP surgeries and community health centres should undertake the following for women whose first language is not English:

- NHS trusts should train link workers who speak the mother’s first language to provide information and support on breastfeeding, use of infant formula, weaning and healthy eating.
- Where link workers are not available, ensure women whose first language is not English have access to interpreting services and information in a format and language they can understand.
- NHS trusts should encourage women from minority ethnic communities whose first language is not English to train as breastfeeding peer supporters.

As noted there was a lack of evidence for interventions around diet and pregnancy. However, there was some evidence in the form of RCTs to support recommendations around breastfeeding (see NICE, 2008).

3.5.4 Pregnancy and Disability

The RCN (2007) guidelines on pregnancy and disability aim to “enable midwives and nurses to provide evidence-based and client-led care to meet a disabled individual’s needs during pregnancy, birth and beyond” (p.4). The guideline cites a dearth of research into disabled women’s maternity needs, however, it is recognised that this group of women is being failed by maternity services. The guideline highlights the policy and legislative context in terms of the Human Rights Act and the
Disability Discrimination Act. The guideline provides detailed information on knowledge, skills and attitudes for effective care provision, however, it should be noted that this is not evidence-based. The following conclusions are drawn by the guideline and could provide some overarching principles for care of pregnant women with diversity (adapted from RCN, 2007, p. 24):

- All staff need to respect the diversity and individuality of people with disabilities.
- Health workers are responsible for exploring and resolving any negative attitudes they may have towards pregnant women with disabilities.
- Healthcare professionals work in partnership with agencies and the disabled people themselves to those promote health, deliver care in new ways and become advocates of good practice who have low educational achievement and those from disadvantaged groups.
- A health service that meets the needs of disabled women who are pregnant will also meet the needs of other childbearing women.
- Services should aim to value diversity and see the woman first and the disability second.

3.6 Grey Literature
Two rapid reviews found in the grey literature, one which examined inequalities in antenatal care (Scott and Woodman, 2010) and one which examined labour care for women from vulnerable groups (McCormick et al., 2012). The expert consultation also identified two needs assessments which utilised local data and scoping reviews to examine the needs of childbearing women in the criminal justice system (Albertson et al., 2012) and also for the reduction of serious adverse events in childhood (McMillian et al., 2014). Additionally, an evaluation of the development and early Implementation phases of Getting it right for every child in Highland: 2006-2009 (Stradling et al., 2009) was identified. Whilst, not specific to maternity services, GIRFEC does set the policy context for organisation of services which some vulnerable women and their babies will received and is therefore worth consideration.

3.6.1 Grey literature: rapid reviews
The rapid review on inequalities in antenatal care was conducted by NHS Health Scotland (Scott and Woodman, 2010) to provide an overview of the current highly processed evidence in relation to antenatal health inequalities. It first provides a detailed overview of the policy context around Early Years within Scotland. Secondly, literature searches of the Cochrane Collaboration, DARE, CRD, SIGN, NICE, NPEU and NHS Health Scotland’s website were conducted and four reviews were identified. Specifically, the NICE guideline on Pregnancy and Complex Social Factors (National Collaborating Centre for Women’s and Children’s Health, 2010), the two reviews on social disadvantage by the NPEU (Hollowell et al., 2009, Oakley et al., 2009) and another unpublished review commissioned by NHS Health Scotland (Astin et al., 2008). Only the unpublished review by Astin et al. was not identified by this rapid review. The NHS Health Scotland review summarises the identified documents, and the following key findings are presented (Scott and Woodman):

- Access and Barriers
  - Access for women with complex social needs has two components:
    - Physical access (i.e. uptake of services)
    - Cognitive /mental access (i.e. the way in which they utilise and maintain care)
  - Specific barriers include:
    - Woman feels awkward or fears being judged
Judgemental attitudes by staff
Lack of integrated care involving different service providers
Lack of staff knowledge about lived experience of the woman

- Maintenance
  - Continuity of care and carer(s) is pivotal to maintaining contact with antenatal care.
  - An on-going established relationship that facilitates communication is necessary for all groups of women with complex care needs.
- Enhanced antenatal care provision
  - There are gaps in the evidence base that make it difficult to conclude whether enhanced antenatal care provision is effective in improving outcomes for mothers and babies.
  - Actions without a strong evidence base may still make an important contribution to an overall care package.

Finally, Scott and Woodman (2010) suggest that the ten ethical principles adopted by NHS Health Scotland (Health Scotland’s Principles) may be useful in developing equitable antenatal services. These include: do good; do not harm; fairness; sustainability; respect; empowerment; social responsibility; participation; openness; and accountability. This is arguably pertinent to this rapid review as it provides some core principles around values and philosophy. In addition, Woodman and Scott (2010) suggest considering the decision-making approach outlined by NHS Health Scotland, which considers both ethics and evidence in decision making, as a means of reducing inequalities in antenatal care (Tannahill, 2008). Tannahill suggests that decisions around services for health promotion, public health and health improvement be based upon application of Health Scotland’s ethical principles and available evidence and theory. Again, such an approach is relevant to the overarching principles that this rapid review aims to identify and is something that could be utilised when making specific decisions about practices and organisation of care.

Secondly, the review by McCormick et al. (2012) aimed to examine the literature on evidence-based recommendations and best-practice examples of strategies to improve care in labour for vulnerable women in the UK and similar countries. This involved a search of four databases: Maternity and Infant Care, NHS Evidence, EMBASE and MEDLINE as well as search of the grey literature. The review identified little in the way of evidence or guidelines specifically relating to the care of women from any of the vulnerable groups. Instead, the literature tended to focus on antenatal and postnatal service provision. Interestingly, McCormick et al. suggested that the most of the literature tended to focus on the clinical aspects of labour in terms of specific obstetric needs rather than on social vulnerabilities. The exception to this was refugee/asylum seeking women. Based on the available evidence the following recommendations were made:

- Good communication between health professionals and women, including working with professional interpreters
- A thorough multi-agency needs assessment which highlights safeguarding issues and supports the development of a coordinated care plan for each woman
- Good inter-professional communication, clearly documented, accessible to all providing care and confidential to them and the woman.

These recommendations were then presented at an Evidence into Practice consultation to practitioners and service user reps. This consultation identified barriers to the recommendations and proposed that developing a region-wide communication strategy and aiming for a standardised maternity record. In addition it was recommended that all women are made aware of what
3.6.2 Grey literature: Needs assessment

First, Albertson et al. (2012), using the Yorkshire and Humberside area as a case study, aimed to map the health needs of childbearing women in the criminal justice system (both in and out of prison) and produce an evidence base to inform policy development in this area. This consultation involved a brief scoping review, two focus groups with Mother and Baby Unit (MBU) practitioners, five interviews with MBU managers, an online expert consultation and a multi-agency workshop. The scoping review identified that women in the criminal justice system have multiple additional needs (e.g. mental ill health, social exclusion, have suffered abuse, low income, unemployed) that can impair parenting skills and overall wellbeing. However, the use of MBUs within prisons can actually provide an opportune setting to provide support and education for women to help enable them to care for their child. This would require a multi-agency approach, however, Albertson et al. identified the following barriers to providing such an approach: lack of knowledge by prison staff on the provision of maternal and infant care; NHS staff may not be able to directly access the women; women may be in a prison which is not near their family or social network; and the rigidity of the prison routine can cause difficulties in caring for a women’s individual needs. The consultation exercise also identified a number of good practice examples, particularly in regards to MBUs (see Albertson et al., 2012 for details).

Secondly, McMillian et al. (2014) conducted a rapid assessment which aimed to identify the key evidence around reducing serious adverse events in childhood. Whilst not specific to maternity services, this piece of work does include information on prevention of adverse events in infants, which is of relevance to this review. The assessment consisted of a rapid review and also data on admissions, preventable admissions, injuries, deaths and looked after children. First, in terms of data, McMillian et al. reported that socioeconomic deprivation was a significant driver of preventable emergency admissions (i.e. conditions that would have been more appropriately managed in ambulatory care) and also admissions with injuries. The rapid review aimed to synthesis review level evidence on approaches that might reduce maltreatment, injury, mortality and avoidable admissions in children. In terms of findings that would be applicable to childbearing women and babies, the review concluded the following. First, universal, high fidelity home visiting programmes and safety education along with the provision of safety equipment is effective in the primary prevention of maltreatment and injury. Secondly, integrated programmes for pregnant women with addictions that combine addictions care and antenatal care may improve outcomes around neglect and maltreatment. Thirdly, assessment processes based upon the Framework for the Assessment of Children in Need and their Families (see section 3.1.11) may help reduce maltreatment. Fourthly, both universal and targeted interventions are necessary to reduce infant mortality. Universal interventions include those that aim to make society more child-centred and targeted interventions include those aim to reduce foetal exposure to smoking and promote a safe sleeping position for the baby. Finally, the use of breastfeeding could reduce admissions from gastrointestinal and respiratory infections.

3.6.3 Grey literature: GIRFEC

Getting it Right for Every Child (GIRFEC) aims to improve outcomes for all children and young people in Scotland by providing a framework for the delivery of co-ordinated service provision (Stradling et al., 2009). The development of the implementation plan for GIRFEC was informed by a Pathfinder projects conducted in Highland from 2006 (Stradling et al., 2009), and had a remit to address all aspects of children and young people’s needs (from birth to 18 years) in terms of children’s services and other services or agencies that work with children and their families. The Pathfinder approach aims to bring change in complex situations by building upon established good practice which can
then be further developed and adapted in response to problems. Specifically to Highland, the policies, strategic planning processes, governance and strategic management, the delivery, frameworks and the development and implementation of a practice model and accompanying guidance and training for practitioners to support them in delivering the Getting it right approach. Evaluation data was collected in the form of: interviews with practitioners and service managers; documentation on the change process; observations of needs assessment meetings and training sessions for Lead Professionals and Named Persons; focus groups with practitioners and multi-agency groups; and evaluation of samples of completed records and plans for children and young people from 0 to 16 years, with a diversity of needs and concerns. It should be noted that limited information on the methodology was reported in terms of number of individuals interviewed and the data collection procedures. In addition, the number of children the number of children tracked through the system was relatively small (stated as just under 100) and there is no information provided on the ages of the included studies. Moreover, given the observational nature of the study there is a high risk of bias. The results (particularly around outcomes) should therefore be interpreted with caution when applying them to a maternity context. However, the results around multi-agency working may be more generally applicable. The following is a summary of the ‘signs of progress’ that may be of relevance to maternity care are reported in the evaluation:

- The rate of children on the child protection register has fallen between 2005 and 2008, as has the number of new registrations and referrals;
- Indications of child safety, including provision for child protection, Looked After children, accident prevention and anti-bullying policies in schools indicate that children and young people in Highland are safer than they were four years ago;
- Waiting time for placements for Looked After children has fallen and kinship care has increased slightly;
- Progress has been made in improving access to Sure Start;
- Health targets for 0-5 will have been met for 0-5 year olds, with the possible exception of reducing the number of expectant mothers who smoke;
- There evidence of clear progress towards intended outcomes in two thirds of the sample of children tracked through the system. In a further 20% cases which had been escalating had now stabilised;
- Procedures and pathways that are followed by professionals are now more streamlined and staff across different agencies are using the same tools and processes. The process of gathering and sharing information is now more consistent;
- Multi-agency meetings have become normal (instead of individual meetings for each agency);
- Every child and young person in the area had a Named Person responsible for making sure they have access to help to support their development and this helped facilitate the transition to multi-agency support;
- Children and young people with additional needs and require support from multiple agencies had a Lead Professional who co-ordinated their care planning and provide a more focused response to the child’s needs or concerns;
- Families and children reported feeling more integrated into the planning process, appreciated having someone with an identified lead role and were better informed;
- Staff reported that they were more confident in raising concerns using the Well-being Indicators;
- The level of inter-agency trust has increased;
• There has been buy into GIRFEC from chief and lead officers, as well as health board members.
• Ownership of GIRFEC amongst practitioners was varied but was highest in social workers.

The findings of this Pathfinder project (Stradling et al., 2009) provide support for potential improved methods for multi-agency working for women and babies with additional needs. In addition, it cemented the ten core components of GIRFEC (see Appendix 6), which has informed the Children and Young People (Scotland) Bill.

3.7 The ‘Stepping up to Public Health’ model
The Stepping up to Public Health model, was developed in response to a call from Public Health England for a new public health model for midwives (RCM, 2016). The development of the model was informed through online focus groups conducted with midwives, midwifery support workers and students. In addition a closed facebook forum was used to collect the views of service users. Findings from this work informed the development of an online questionnaire which was completed by 2242 RCM members from across the UK. Seven themes were identified from this data:

• Time constraints
• Timing – optimum time for delivery of information to women and their families
• Communication – relaying sensitive information and asking difficult questions
• Continuity of carer – ensuring consistent, individualised care
• Education – training needs for midwives, MSWs and students
• Method of conveying information
• Importance of specialist services.

Using the data generated from all parts of the study, a group of stakeholders developed which demonstrates how midwives can deliver high quality public health care (see figure 3.1). This model highlights the need for all women to receive the best available public health from their midwife. In addition, it demonstrates that some women additional needs or complex social factors, will also require care from other practitioners, whilst still under the care of their midwife. Prior to their first visit with the midwife, women will be provided with a ‘menu’ of public health topics which will enable the women and her family to gain advice and information appropriate to their individual needs. To further enable women to make informed decisions, the model is also accompanied with a repository of reliable public health information that women can access via the RCM website. Finally, a range of i-learn modules on different public health topics will be available for midwives and midwifery support workers.
4.0 Discussion

4.1 Identified evidence

The aim of this rapid review as to distil core principles and practice recommendations that can lead to improved care, services and outcomes for women and babies from vulnerable population groups. The review identified a total of 23 systematic reviews, which examined the effectiveness of interventions for the following groups: disadvantaged and vulnerable groups in general (n=4); women with substance and alcohol misuse problems (n=5); women with disabilities (n=3); women with mental health problems (n=5); young mothers (n=2); women experiencing domestic violence (n=2); women in the criminal justice system (n=1); and Gypsy/Travellers (n=1). Only three of these also considered women’s views and experiences of the interventions/actions. No systematic reviews were identified that contained any studies including homeless women or sex workers, indicating a gap in systematic review level evidence for these groups. In addition, another ten primary studies which examined interventions/actions conducted mainly in NHS settings were identified either subject experts or from reference lists of the systematic reviews and were worthy of consideration rapid review. Finally, four pieces of grey literature which took the form of non-systematic literature
on antenatal and labour care for vulnerable/disadvantaged groups in general and for women in the criminal justice system were also identified.

4.2 Key findings
The rapid review identified material that either considered vulnerable and/or disadvantaged groups generally or focused on specific groups. The reviews on vulnerable and/or disadvantaged groups were subjected to full data extraction and critical appraisal processes. However, due to the time constraints on the review, the additional reviews exploring interventions and views/experiences of specific vulnerable groups were not subject to the same level of data extraction as the review. A brief summary of the emerging themes will now be presented.

4.2.1 Vulnerable and disadvantaged women in general
The two systematic reviews conducted by the NPEU and examined interventions for antenatal care programmes to reduce infant mortality and its causes (Hollowell et al., 2009) and interventions to increase early initiation of antenatal care (Oakley et al., 2009). The included studies had to relate to organisation of services and be relevant to NHS settings. The reviews included a wide range of interventions/actions (e.g. social support/home visiting, link workers, specialised clinics, enhanced services) for different vulnerable groups (e.g. teenage mothers, women on a low income, ethnic minorities). It should be stressed that study quality was generally poor and the majority of studies were conducted in the USA. Nevertheless, Oakley et al. (2009) suggest that the use of mobile clinics, link workers in GP surgeries and culturally sensitive community-based lay women support may have the potential to affect the timing of antenatal care. Additionally, Hollowell et al. (2009) also suggested that group antenatal care for socioeconomically disadvantaged women, Broad-multifaceted clinic-based preterm birth prevention programmes for disadvantaged women with additional clinical risk factors for preterm birth, comprehensive multidisciplinary antenatal care with outreach services, comprehensive general antenatal clinical care providing an enhanced range of services, nutritional education and maternity care co-ordination services may have the potential to improve outcomes for women and babies from vulnerable and disadvantaged groups. However, given the nature of the evidence, further development and evaluation in a UK setting would be needed to demonstrate evidence of effectiveness.

Two Cochrane reviews also examined the effectiveness of interventions for women in disadvantaged populations. Specifically, Hodnett et al. (2010) assessed the effects of programmes offering additional social support compared with routine care, for pregnant women believed at high risk for giving birth to babies that are either preterm or weigh less than 2500 gm, or both, at birth. Seventeen studies were included in the review, although, there was no evidence of a significant benefit in terms of reduction in preterm birth, birthweight babies, perinatal mortality, antenatal depression or satisfaction with care. It is proposed by Hodnett et al. that the social support was not sufficient to overcome the negative effects of social deprivation. However, social support was associated with a slightly decreased risk of caesarean section and antenatal hospital admission, which Hodnett et al. suggest could be the result of reduction of fear and anxiety around birth. Secondly, Till et al. (2015) examined the effectiveness of cash or non-cash incentives on utilization of antenatal care. Limited evidence to support the use of incentives in terms of improving adequacy of antenatal care (defined by number of procedures such as history-taking, diagnostic tests, physical examination, immunizations, iron supplements, lactation counselling and family planning) and frequency of antenatal care. None of the five studies included in this review were conducted in a UK setting, so further research on the use of incentives is needed from a more comparable context. For instance, it is suggested that the results of the NOSH study, which is currently assessing the
effectiveness of incentives to encourage breastfeeding in a low-income area (Relton et al., 2016) are examined when available.

Hollowell et al. also noted that at the time of publication, an evaluation of the Family Nurse Partnership in an English setting was on-going. This was recently published and as this would have been included in the review by Hollowell et al. and due to its relevance to this rapid review, the study was identified and included (Robling et al., 2016). Robling et al. randomised over 1600 women to either the FNP group or routine care group and reported that FNP conferred no additional benefit in terms of smoking in late pregnancy, birthweight, attendance at the emergency department or admission to hospital at least once before second birthday or second pregnancy within two years, breastfeeding initiation and duration, prenatal attachment score, maternal-child interaction outcomes or referral to social services. However, small additional benefits were identified in cognitive and language development. Robling et al. suggest the apparent lack of effect may be a result of a comparatively less disadvantaged population being included in this study. Alternatively, as young women in the UK can access health and social services the intervention effect may be diluted. Given that FNP is currently being developed and expanded across Scotland, it is important that robust evaluation is conducted to determine its effectiveness in a Scottish context.

Both the review by Oakley et al. (2009) and Hollowell et al. (2009) identified lay support as being potentially useful for improving outcomes and enhancing engagement of care for women from disadvantaged groups. Such an approach was evaluated in a well-conducted parallel-arm RCT in Birmingham where over 1200 pregnant women randomised to receive either additional care from an outreach worker or routine care. Emerging results from the study indicate a slight reduction in incidence of postnatal depression but no significant difference in antenatal care attendance (note this was high in both groups so may represent a floor effect). Once further results become available, it is suggested that they should be considered. Similarly, Spiby et al. (2015) examined doula support for disadvantaged women in England and reported some significant improvements in breastfeeding initiation and continuing at six weeks. In addition, women particularly continuity and flexibility of care the doulas provided as well as being listened to in a non-judgemental manner. These aspects of continuity of care and listening in a non-judgemental manner were consistently identified in the other reviews which examined women from different vulnerable groups’ experiences. Finally, specifically to maternal and infant nutrition in low income women, an evaluation of the implementation of the Healthy Start programme which is a recommendation for disadvantaged groups in the NICE guideline on maternal and infant nutrition (NICE, 2008) was identified (Mcfadden et al., 2014, McFadden et al., 2015). This provided a number of recommendations for improving uptake of healthy start, including improving the application process and increasing awareness.

4.2.2 Women with Substance and Alcohol Misuse Problems

Five reviews addressing different aspects of care for women with substance and/or alcohol misuse were identified. This included the use of home visiting, psychosocial and educational interventions. However, the included studies were generally of a low quality and little in the way of positive intervention effects were identified, which highlights a current lack of good evidence for the specific management of substance/alcohol misuse problems in pregnant and postpartum women. This was consistent with the review in the NICE guidance on pregnancy and complex social factors (National Collaborating Centre for Women's and Children's Health, 2010). However, the NICE guideline did report that women with substance and/or alcohol misuse problems did value consistency; non-judgmental attitudes; reassurance about confidentiality and child protection concerns; information; and a high level of support.
4.2.3 Women from Ethnic Minorities
A very comprehensive review by the NPEU (Hollowell et al., 2012) examined interventions that aimed to address barriers to early initiation of antenatal care by women from ethnic minorities (including refugees, asylum seekers and women who speak little English) and also examined literature exploring their views and experiences. Again, the evidence upon which this review rests is limited in terms of quality. However, Hollowell et al. report that the following services may show some promise in addressing barriers to care faced by women from ethnic minorities and are worthy of consideration for further development and testing: local services/clinics and outreach worker or advocates (from local community) involvement; mobile health van; help with transport; staff education; bilingual link workers or staff; and assistance with form filling. This lack of good evidence was also identified in the NICE guidance on pregnancy and complex social factors (National Collaborating Centre for Women's and Children's Health, 2010), however, the importance of continuity carer was again identified in this guidance.

4.2.4 Women with Disabilities
Three reviews related to pregnant or post-partum women with disabilities (including learning difficulties) were identified. The reviews identified a paucity of evidence for interventions/actions for women with disabilities, however, Breckenridge et al. (2014) and Homeyard et al. (2016) also examined the literature on women’s views and experiences and reported that women with disabilities faced barriers in terms of poor relationships with health professionals (i.e. lack of knowledge, lack of empathy, refusal to provide treatment due to disability, negative attitudes), environmental issues (i.e. lack of appropriate transportation, services ill-equipped, inaccessible care environment) and low social support.

4.2.5 Women with Mental Health Problems
Four systematic reviews which examine different aspects of care provision for pregnant and post-partum women with mental health problems were identified. These included enhancing participation in depression care, psychosocial interventions, antenatal psychosocial assessment and midwife-led interventions to improve maternal mental health. There was only limited evidence of the use of psychosocial assessment and it was not reported to confer any significant benefit in terms of reducing post-natal depression. Similarly, only very limited evidence supported the use of psychosocial interventions. Byatt et al. (2015) identified low quality evidence which suggested that increased participation in depression treatment was associated with interventions that targeted multiple barriers at the level of the patient (i.e. screening, provision of resources), healthcare provider (i.e. healthcare professional education/training) and at a service level (i.e. on-site assessment and access to mental health consultation). It is not clear from the data reported, whether this translated into improved mental health outcomes or patient experience. Nevertheless, it does suggest that strategies that aim to enhance engagement in care need to tackle multiple barriers. The meta-synthesis of women’s views and experiences identified the importance of non-judgemental and compassionate support from healthcare professionals, involvement in treatment decisions, continuity of care and a focus on the mother as well as the baby. Barriers similar to those identified by women with disabilities were also reported and included: stigma, healthcare professionals unwilling or unable to address psychological needs and a lack of information in terms of professional knowledge and provision of information. Many of these needs identified by the women themselves are reflected in the NICE guideline on antenatal and postnatal health (National Collaborating Centre for Mental Health, 2011) which highlights the need for supported and coordinated care (see 3.5.2 for full details).
4.2.6 Young Mothers
Care for young mothers was examined in three reviews, which examined organisation of services, psychosocial interventions and adolescent parenting in the NICU. Limited evidence is available in the form of observational studies to support the use of group antenatal care and specific clinics for young women in reducing preterm births and breastfeeding at 28 days (specific clinics only). This was consistent with the evidence identified in the NICE guideline on complex social factors in pregnancy (National Collaborating Centre for Women’s and Children’s Health, 2010). Generally good quality evidence on the use of psychosocial interventions was identified and was reported to confer a significant positive effect in reducing low birth weight infants. However, there was no significant effect on preterm birth. Finally, the review examining adolescent parenting in the NICU identified a need for additional efforts to engage adolescent parents in the care of their infant.

4.2.7 Women Experiencing Domestic Abuse
The use of screening and interventions for pregnant or postpartum women experiencing domestic abuse was examined in two separate reviews. Screening could take the form of computer-assisted self-completion, face-to-face screening or written self-completion. Whilst screening did confer to a significant increase in the detection of domestic abuse, particularly in antenatal settings, this did not translate into a significantly increased referral rate or reduction in domestic abuse. This is consistent with the findings from mental health, which suggests that screening itself is not sufficient and it needs to also be combined with approaches that target other barriers at the level of healthcare professionals and organisation of care. In terms of specific interventions to reduce domestic abuse, Jahanfar et al. (2014) reported limited evidence for reduction of episodes of violence (physical, sexual, and/or psychological) and prevention of violence during and up to one year after pregnancy in women who had received psychotherapy and for reduction in psychological abuse and minor physical violence scores in women who received an empowerment intervention. Crucially, none of the identified interventions were reported to have resulted in any adverse effects. Similarly, the NICE guideline on pregnancy and complex social factors (National Collaborating Centre for Women’s and Children’s Health, 2010) also identified only limited and poor quality evidence for interventions to improve access to care and reduction of domestic abuse. However, the guideline does suggest that education, advocacy, counselling or community referral may have the potential to increase use of safety behaviours.

4.2.8 Women in the Criminal Justice System
One systematic review examined both the experiences of women who were incarcerated during pregnancy and/or give birth in prison, and also the outcomes for both women and babies, in the context of new innovations in maternity service delivery. The review found positive relationships with prison staff could help improve women’s experiences. However, there was a paucity of evidence of interventions/actions related to maternity care for women in the criminal justice system. Indeed, only one intervention, which examined doula support, was identified. The evaluation was poor quality, however, qualitative data from the study suggested that doulas helped make the experience more positive for women. In addition, Albertson et al. identified that prison staff lacked knowledge on the provision of maternal and infant care and there was barriers to the provision of NHS care.

4.2.9 Gypsy/Travellers
Finally, a large scoping, economic and realist review identified very little evidence in regard to how best to engage Gypsy/Travellers in healthcare. Again, the nature of the evidence identified was very limited, however, the authors suggest that the use of outreach workers from Gypsy/Traveller communities may help promote the uptake of antenatal care. Additional strategies that may
enhance uptake of care include: text reminders of appointments; cultural awareness sessions for staff and additional payments for GPs for registering travellers. Again there is some consistency here in the recommended strategies across the reviews on different vulnerable groups.

4.3 Strengths and Limitations
This rapid review had three major strengths. First the focus on highly processed evidence in the form of Cochrane reviews and NICE guidelines, ensures that not only the best available evidence is identified but also that the evidence has been considered and reviewed by researchers, health care practitioners and lay users. This rapid review is therefore able to build upon consensus that has already been developed regarding the quality, acceptability and transferability of the research and the interventions. Secondly, the development of the rapid review (i.e. review questions, search strategy) was based upon a pre-existing framework (the Framework for quality maternal and newborn care, Renfrew et al., 2014) which itself is based upon the best available evidence in maternity care in the form of Cochrane reviews and a meta-synthesis of women’s views and experiences. Thirdly, the review sought to identify studies on women’s views and experiences as well as studies which measured outcomes of interventions. This will help guide not only what is the most effective approach (in terms of outcomes) but also what is the most acceptable approach to women.

However, due to the rapid nature of this piece of work and the vast nature of the topic area, there are a number of limitations to this review that must be considered. First, the reviews looking at vulnerable groups in general were prioritised and full data extraction and detailed critical appraisal was conducted. Reviews including specific groups were examined in less detail both in terms of finding and also risk of bias. Their analysis was therefore limited to providing a reference for the reader and distilling their key points. A number of relevant systematic reviews were excluded as they were deemed to have been ‘superceded’ by more up-to-date reviews, however, it is feasible, they may have included additional studies that will have not be captured in this review. Finally, the inclusion of relevant additional primary studies was limited to studies suggested by experts or from references of included studies. It is therefore likely that key studies may have been omitted and there is a risk of bias in terms of study selection.

4.4 Conclusions
This lack of good quality evidence on interventions/actions for vulnerable groups in general was a consistent theme across the systematic reviews and was also identified by the NICE guideline on complex social factors and pregnancy (National Collaborating Centre for Women’s and Children’s Health, 2010) and is highlighted is the evidence summary by Woodman and Scott (2012). However, key themes did emerge across the included reviews and primary studies for women in different vulnerable groups and should be considered in the model of care. Specifically, the importance of continuity of care in enabling women to develop trusting relationships. This can be facilitated through having a universal model of care, in which all women receive usual midwifery care and vulnerable women with additional needs receive additional care tailored to their individual needs, however, their care will still be co-ordinated by one named midwife. Such an approach is akin to the proportionate universalism approach proposed by Marmot (2010). Marmot argues that focusing solely on the most disadvantaged members of society will not tackle health inequalities. Instead, a universal model is needed, however, the scale and intensity of services delivered is proportionate with the level of disadvantage. Delivery of such a service, would require effective multi-agency working as outlined in GIRFEC (Steading, 2009).
Building a successful relationship was also consistently found to be dependent upon having non-judgemental staff who were empathetic and knowledgeable of the women’s individual needs. Positive staff attitudes and knowledge could be improved by culturally sensitive training and education. The ten Health Scotland’s Principles (identified in the rapid review by Scott and Woodman [2010]) also provide guidance as to how all staff should treat women from vulnerable groups. Specifically: do good; do not harm; fairness; sustainability; respect; empowerment; social responsibility; participation; openness; and accountability. Another aspect that was found to be key was the need for effective communication, this refers not only to good interpersonal skills but also providing assistance for women with low literacy or for whom English is not a first language. There was some emerging evidence to support the use of culturally relevant lay workers, both for women with language difficulties and also to provide support more generally for women from other vulnerable groups. However, such an approach would require careful development and evaluation in different contexts before conclusions can be drawn regarding its ability to improve outcomes.

To conclude, there is clearly therefore no panacea for improving outcomes and experiences of care for vulnerable women and their babies. However, as the barriers to care were generally consistent across different vulnerable groups and indeed many of the vulnerable groups overlap, there is a need for highly accessible (i.e. multiple barriers addressed), respectful and technically high quality services for all women, with the ability to layer on/integrate additional care for specific conditions.
Appendix 1. Search Strategy.
MEDLINE. Searched on Ovid Platform. 07/04/16.
No. of records = 488.

1 exp Hospitals, Maternity/2580

2 exp Midwifery/
3 Maternal Health Services/
4 Nurse Midwives/
5 Prenatal Care/
6 Perinatal Care/
7 exp Postnatal Care/
8 social disadvantage.mp.
9 socio-economic deprivation.mp.
10 socio economic deprivation.mp.
11 exp Poverty Areas/ or exp Poverty/
12 poverty.mp.
13 exp Behavior, Addictive/ or exp Alcoholism/ or exp Substance-Related Disorders/
14 (substance misuse or substance abuse).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
15 (drug misuse or drug abuse).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
16 (alcohol abuse or alcohol misuse).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
17 Refugees/
18 refugee.mp.
19 asylum seeker.mp.
20 (migrant adj3 recent).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
21 exp "Transients and Migrants"/
22 exp Disabled Persons/
23 physical disabilit*.mp.
24 exp Communication Barriers/
25 language barrier.mp.
26 exp Learning Disorders/
27 (learning disabilit* or learning disorder).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
28 exp Mental Disorders/
29 mental illness.mp.
30 mental health problem.mp.
31 Pregnancy in Adolescence/
32 teen* pregnancy.mp.
33 (teen* mother or teen* parent).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
34 exp Domestic Violence/
35 (domestic abuse or domestic violence).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
36 (intimate partner abuse or intimate partner violence).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
37 Homeless Persons/
38 Homeless Youth/
39 homeless.mp.
40 rough sleep*.mp.
41 exp Prisons/
42 exp Prisoners/
43 prisoner.mp.
44 criminal justice system.mp.
Sex Workers/
(marginalised adj3 group).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]

exp Vulnerable Populations/
meta-analysis/
exp review literature/
(meta-analy$ or meta analy$ or metaanaly$).tw.
meta analysis.pt.
review academic.pt.
review literature.pt.
letter.pt.
review of reported cases.pt.
historical article.pt.
review multicase.pt.
48 or 49 or 50 or 51 or 52 or 53
54 or 55 or 56 or 57
58 48 or 49 or 50 or 51 or 52 or 53
59 54 or 55 or 56 or 57
60 58 not 59
animal/
Humans/
61 and 62
64 61 not 63
65 60 not 64
(pregnancy adj3 service).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
(pregnancy adj3 care).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
(pregnant adj3 care).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
69 (pregnant adj3 service).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]

70 maternity care.mp.
71 maternity service.mp.
72 antenatal care.mp.
73 perinatal care.mp.
74 postnatal care.mp.
75 1 or 2 or 3 or 4 or 5 or 6 or 7 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74
76 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47
77 75 and 76
78 65 and 77
79 limit 78 to (english language and yr="2000 -Current")

CINAHL searched using the EBSCO platform on 07/04/2016.
Search terms detailed below. Systematic review filter applied was reported by Wong et al. (2006).
No. of records = 172

S67  S58 AND S64
S66  S58 AND S64
S65  S58 AND S64
S64  S59 OR S60 OR S61 OR S62 OR S63
S63  meta-analysis
S62  systematic review
S61  (MH "Systematic Review")
S60  PT systematic review
S59  PT review
S58  S15 AND S57
S57  S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55 OR S56
S56  vulnerable N3 population
vulnerable N3 group
MH "Special Populations" OR MH "Vulnerability"
marginalised N3 group
sex worker
criminal justice system
prison*
MH "Prisoners" OR MH "Correctional Health Services" OR MH "Correctional Facilities"
homeless*
rough sleep*
MH "Homelessness" OR MH "Homeless Persons"
"intimate partner violence"
domestic violence or domestic abuse
MH "Domestic Violence" OR MH "Intimate Partner Violence"
teen* mother or teen* parent
teen* pregnancy
MH "Maternal Age 14 and Under" OR MH "Pregnancy in Adolescence"
mental health problem
mental illness
MH "Mental Disorders"
learning disabilit*
MH "Learning Disorders" OR MH "Intellectual Disability" OR MH "Health Services for Persons with Disabilities"
language barrier
MH "Communication Barriers"
"physical disability"
MH "Disabled"
migrant N3 recent
MH "Transients and Migrants"
asylum seeker
refugee
MH "Refugees"
alcohol abuse or alcohol misuse
MH "Alcohol Abuse"
S23 drug misuse or drug abuse
S22 substance misuse or substance abuse
S21 (MH "Substance Abuse") OR (MH "Substance Abuse, Perinatal") OR (MH "Substance Abusers") OR (MH "Substance Abuse, Intravenous")
S20 poverty
S19 (MH "Poverty") OR (MH "Poverty Areas")
S18 socio economic deprivation
S17 socio-economic deprivation
S16 social disadvantage
S15 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14
S14 postnatal care
S13 perinatal care
S12 antenatal care
S11 maternity service
S10 maternity care
S9 pregnant N3 service
S8 pregnant N3 care
S7 pregnancy N3 care
S6 pregnancy N3 service
S5 (MH "Postnatal Care")
S4 (MH "Perinatal Care")
S3 (MH "Prenatal Care")
S2 (MH "Midwifery") OR (MH "Midwifery Service") OR (MH "Nurse-Midwifery Service") OR (MH "Nurse Midwifery")
S1 (MH "Maternal Health Services")

PsycINFO
Searches using EBSCO platform on 07/04/2016. Note no review filter added due to low number of records retrieved.
No. of records = 32
S51 S46 AND S48 Limiters - Publication Year: 2000-2015
Narrow by Language: - english
Search modes - Boolean/Phrase
S50 S46 AND S48
S49  S46 AND S48
S48  S8 OR S47
S47  DE "Pregnancy"
S46  (vulnerable N3 population) AND (S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45)
S45  vulnerable N3 group
S44  marginalised N3 group
S43  sex worker
S42  criminal justice system
S41  prisoner
S40  DE "Prisoners" OR DE "Reintegration" OR DE "Prisons" OR DE "Parole"
S39  DE "Homeless"
S38  homeless
S37  intimate partner abuse or intimate partner violence
S36  domestic violence or domestic abuse
S35  DE "Domestic Violence" OR DE "Intimate Partner Violence"
S34  teen* mother OR teen* parent
S33  teen* pregnancy
S32  DE "Adolescent Pregnancy" OR DE "Adolescent Mothers"
S31  mental health problem
S30  mental illness
S29  DE "Mental Disorders"
S28  learning disabilit* or learning disorder
S27  DE "Learning Disorders" OR DE "Learning Disabilities"
S26  language barrier
S25  DE "Communication Barriers"
S24  physical disabilit*
S23  disabled person*
S22  migrant N3 recent
S21  asylum seeker
S20  refugee
S19  DE "Refugees"
S18 alcohol abuse or alcohol misuse
S17 DE "Alcohol Abuse" OR DE "Alcoholism"
S16 drug abuse or drug misuse
S15 substance abuse or substance misuse
S14 DE "Drug Abuse Prevention" OR DE "Drug Abuse"
S13 poverty
S12 DE "Poverty" OR DE "Poverty Areas"
S11 socio-economic deprivation
S10 social disadvantage
S9 DE "Social Deprivation" OR DE "Disadvantaged"
S8 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7
S7 postnatal care
S6 DE "Postnatal Period"
S5 perinatal care
S4 DE "Perinatal Period"
S3 DE "Midwifery"
S2 DE "Prenatal Care"
S1 maternal health services
Appendix 2. Cochrane Search

<table>
<thead>
<tr>
<th>Review</th>
<th>Include/Exclude</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incentives for increasing prenatal care use by women in order to improve maternal and neonatal outcomes</td>
<td>Include</td>
<td></td>
</tr>
<tr>
<td>Health system and community level interventions for improving antenatal care coverage and health outcomes</td>
<td>Include</td>
<td></td>
</tr>
<tr>
<td>Support during pregnancy for women at increased risk of low birthweight babies</td>
<td>Include</td>
<td></td>
</tr>
<tr>
<td>Home visits during pregnancy and after birth for women with an alcohol or drug problem</td>
<td>Include</td>
<td></td>
</tr>
<tr>
<td>Psychological and/or educational interventions for reducing alcohol consumption in pregnant women and women planning pregnancy</td>
<td>Exclude</td>
<td>Clinical intervention. No outcomes related to engagement in pregnancy care.</td>
</tr>
<tr>
<td>Psychosocial interventions for women enrolled in alcohol treatment during pregnancy.</td>
<td>Include</td>
<td>Note includes interventions which aim to link the patient to pregnancy care</td>
</tr>
<tr>
<td>Psychosocial interventions for pregnant women in outpatient illicit drug treatment programs compared to other interventions</td>
<td>Include</td>
<td>Includes positive supportive reinforcement with incentives</td>
</tr>
<tr>
<td>Interventions for preventing or reducing domestic violence against pregnant women</td>
<td>Include</td>
<td></td>
</tr>
<tr>
<td>Psychosocial and psychological interventions for treating antenatal depression</td>
<td>Exclude</td>
<td>Focused on clinical outcomes and not provision of care</td>
</tr>
<tr>
<td>Psychosocial and psychological interventions for preventing postpartum depression</td>
<td>Include</td>
<td></td>
</tr>
<tr>
<td>Antenatal psychosocial assessment for reducing perinatal mental health morbidity</td>
<td>Include</td>
<td></td>
</tr>
</tbody>
</table>
### Alternative versus standard packages of antenatal care for low-risk pregnancy

Exclude | No sub-group analysis relevant to care of vulnerable women

### Community-based intervention packages for reducing maternal and neonatal morbidity and mortality and improving neonatal outcomes

Exclude | Training for health workers in LMIC countries

### Group versus conventional antenatal care for pregnant women

Exclude | No sub-group analysis relevant to care of vulnerable women

### Antenatal day care units versus hospital admission for women with complicated pregnancy

Exclude | No sub-group analysis relevant to care of vulnerable women

### Giving women their own case notes to carry during pregnancy

Exclude | No sub-group analysis relevant to care of vulnerable women

### Midwife-led continuity models versus other models of care for childbearing women

Exclude | No sub-group analysis relevant to care of vulnerable women

### Routine pre-pregnancy health promotion for improving pregnancy outcomes

Exclude | No sub-group analysis relevant to care of vulnerable women

### Individual or group antenatal education for childbirth or parenthood, or both

Exclude | No sub-group analysis relevant to care of vulnerable women

### Diet or exercise, or both, for preventing excessive weight gain in pregnancy

Exclude | No sub-group analysis relevant to care of vulnerable women

### Antenatal interventions for reducing weight in obese women for improving pregnancy outcome

Exclude | No sub-group analysis relevant to care of vulnerable women

### Postnatal parental education for optimizing infant general health and parent-infant relationships

Exclude | Low income sub-group analysis planned but not conducted due to lack of comparable studies

### Schedules for home visits in the early postpartum period

Exclude | No sub-group analysis relevant to care of vulnerable women

### Telephone support for women during pregnancy and the first six weeks postpartum

Exclude | Younger versus older women sub-group analysis planned but not conducted due to lack of comparable studies

### Early skin-to-skin contact for mothers and their healthy newborn infants

Exclude | No sub-group analysis relevant to care of vulnerable women

### Early postnatal discharge from hospital for healthy mothers and term infants

Exclude | No sub-group analysis relevant to care of vulnerable women
| Specialised antenatal clinics for women with a pregnancy at high risk of preterm birth (excluding multiple pregnancy) to improve outcomes for women and babies | Exclude | No sub-group analysis relevant to care of vulnerable women |
Appendix 3. Data Extraction Tables.

<table>
<thead>
<tr>
<th>Study Details</th>
<th>579</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author/year</td>
<td>Oakley et al. 2009</td>
</tr>
<tr>
<td>Title</td>
<td>A systematic review of the effectiveness of interventions to increase the early initiation of antenatal care in socially disadvantaged and vulnerable women</td>
</tr>
<tr>
<td>Review theme</td>
<td>Socially disadvantaged and vulnerable women</td>
</tr>
<tr>
<td>Objectives</td>
<td>To identify and evaluate the evidence relating to the effectiveness of interventions, relevant in the context of the NHS, which aim to increase the early initiation of comprehensive antenatal care in socially disadvantaged and vulnerable women</td>
</tr>
<tr>
<td>Participants  (characteristics/number)</td>
<td>Specific disadvantaged and vulnerable groups as well as more general groups of disadvantaged women including low SE status, living in deprived areas and social disadvantaged ethnic minority groups. Six interventions were targeted at/evaluated in ethnic minority women. One focused on indigenous Australian women, four targeted teenagers and one was for substance-abusing HIV positive women. Four studies focused on more generally socioeconomically disadvantaged populations.</td>
</tr>
<tr>
<td>Setting/Context</td>
<td>Settings applicable to the UK context</td>
</tr>
<tr>
<td>Description of Interventions/phenomena of interest</td>
<td>Early initiation of care defined as up to and including 20 weeks. These may be standalone interventions or outreach interventions. 11 studies evaluated outreach or other community-based interventions: three of these consisted of social support and/or home visits by paraprofessionals or lay women; one intervention consisted of the provision of link workers in primary care and ANC settings; one included a mobile clinic; and five were multi-component interventions that included two or more of outreach, case management, home visiting, risk screening, help with transportation to appointments, advocacy and social support. Five studies reported on alternative models of clinic-based antenatal care: two teen pregnancy clinics; one collaborative care initiative; and two enhanced antenatal services.</td>
</tr>
<tr>
<td>Search Details</td>
<td></td>
</tr>
<tr>
<td>Sources</td>
<td>MEDLINE, EMBASE, CINAHL, PsycINFO, HMIC, CENTRAL, CDSR, DARE, HTA database, NICE, TROPHI, HAD and a number of grey literature sites. Inception to May 2009.</td>
</tr>
<tr>
<td>Range (years) of included studies</td>
<td>1990-2009</td>
</tr>
<tr>
<td>No. of studies</td>
<td>16</td>
</tr>
<tr>
<td>Types of studies included</td>
<td>Cohort studies (n=12), two before-and-after without a contemporaneous comparison group, one before-and-after with a contemporaneous comparison group, one retrospective observational cohort study with an additional pre-intervention comparator group</td>
</tr>
<tr>
<td>Country of origin of included studies</td>
<td>USA = 14, Australia = 1, UK = 1</td>
</tr>
<tr>
<td>Appraisal</td>
<td></td>
</tr>
<tr>
<td>Appraisal instruments used</td>
<td>GATE</td>
</tr>
<tr>
<td>---------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Appraisal rating</td>
<td>15 studies rated as poor, 1 study rated as mixed. The most commonly reported flaw was a lack of adjustment for potential confounding in the analysis of the effect of the intervention on the timing of initiation of antenatal care</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method of analysis</td>
</tr>
<tr>
<td>Outcome assessed</td>
</tr>
<tr>
<td>Results/findings</td>
</tr>
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<tr>
<td>Linkworkers</td>
</tr>
<tr>
<td>Mobile health clinics</td>
</tr>
<tr>
<td>Multi-component interventions</td>
</tr>
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</tbody>
</table>
• Minority Health Coalitions Early Pregnancy Project (USA). Services included individual support, facilitating linkages of social support, group support, referrals, health education, advocacy and transportation.

• Maternal Infant Health Advocate Service (USA). Assisted women in navigating the care system, identified resources, engage women in activities to address the issues of race and ethnicity.

• Strong Women Strong Babies (Australia). Developed in consultation with the local aboriginal population. Included a program of traditional cultural practices and Western health and medical practices. Encouraged use of ANC.

Alternative models of clinic-based ANC
• Teen Pregnancy Clinics (both US). Clinics specifically designed for those <18 years.

• Collaborative ANC (US). Neighbourhood Pregnancy Care. Situated in low income areas. Focused on continuity of prenatal care by specific providers, individualized perinatal education, and nursing case management. Patients reminded of appointments.

• Enhanced ANC services.
  o Prenatal Care Assistance Program (US). Included care coordination, referrals to other services and health and nutrition education.
  o HealthStart programme (US). An increased number of prenatal visits, increased provider reimbursement, case coordination with other social programs and integrated health support services such as psychological counselling and health education. Women receive a case manager to provide individualized care plans during pregnancy and for 60 days postpartum. Community outreach helps recruit women early in care.

Significance/direction
Data on results only provided by reviewers for Resource Mothers as this was only study that adjusted for confounders in terms of timing for initiation of ANC.

Comments
Good quality review

<table>
<thead>
<tr>
<th>Study Details</th>
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<tbody>
<tr>
<td>Author/year</td>
<td>Hollowell et al. 2009</td>
</tr>
<tr>
<td>Title</td>
<td>A systematic review of the effectiveness of antenatal care programmes to reduce infant mortality and its major causes in socially disadvantaged and vulnerable women</td>
</tr>
<tr>
<td>Review theme</td>
<td>Socially disadvantaged and vulnerable women</td>
</tr>
<tr>
<td>Objectives</td>
<td>To identify the best available evidence on the effectiveness of interventions focused on the delivery and organisation of antenatal care to reduce infant mortality, or one of its three major causes (preterm birth (PTB), congenital anomalies, sudden infant death syndrome/sudden unexpected death in infancy (SIDS/SUDI)) in:</td>
</tr>
</tbody>
</table>
  • socially disadvantaged and vulnerable groups of women; and |
other groups defined in terms of pre-specified risk factors for adverse birth outcomes
  • where the risk factor is strongly associated with social disadvantage

<table>
<thead>
<tr>
<th>Participants (characteristics/number)</th>
<th>Specific disadvantaged and vulnerable groups as well as more general groups of disadvantaged women including low SE status, living in deprived areas and social disadvantaged ethnic minority groups.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting/Context</td>
<td>High income countries with relatively low infant mortality rates and well-developed healthcare systems. Only included OECD countries and excluded Mexico and Turkey.</td>
</tr>
<tr>
<td>Description of Interventions/phenomena of interest</td>
<td>Antenatal care interventions involving the delivery or organisation of health or social care to pregnant women. ‘stand alone’ antenatal care interventions, such as social support programmes, were considered only where they were delivered and/or evaluated in conjunction with some form of normal antenatal health care. Twenty studies were interventions in socioeconomically deprived populations (8 of which were aimed specifically with additional risk factors for preterm birth). Nine targeted pregnant teenagers, four targeted pregnant substance users, two targeted pregnant indigenous Australians and one targeted pregnant women who were HIV positive.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Search Details</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sources</td>
<td>MEDLINE, EMBASE, CINAHL, PsycINFO, HMIC, CENTRAL, DARE, MIDIRS, CDSR, HTA database, NICE, NHS Economic Evaluations and a range of grey literature sources</td>
</tr>
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<td>Range (years) of included studies</td>
<td>1990-2007 (searched up to 2009).</td>
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<td>No. of studies</td>
<td>40 (36 distinct studies)</td>
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<td>Types of studies included</td>
<td>RCTs (n=9), prospective cohort (n=6), retrospective cohort (n=12), unspecified cohort (n=2), mixed prospective/retrospective design (n=1), before-and-after study (n=6),</td>
</tr>
<tr>
<td>Country of origin of included studies</td>
<td>USA (n=26), UK (n=4), Australia (n=4), Canada (n=1), Greece (n=1).</td>
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<table>
<thead>
<tr>
<th>Appraisal</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Appraisal instruments used</td>
<td>GATE tool</td>
</tr>
<tr>
<td>Appraisal rating</td>
<td>2 of the RCTs assessed as ‘good’, 6 RCTs assessed as ‘mixed’ and one RCT as poor. 6 of the observational studies were assessed as ‘mixed’ and 21 assessed as poor (i.e. had a least one major design weakness or flaw.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analysis</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Method of analysis</td>
<td></td>
</tr>
<tr>
<td>Outcome assessed</td>
<td>Preterm birth (&lt;37 weeks), neonatal/infant mortality, congenital anomalies in live born infants, SIDS/SUDI</td>
</tr>
<tr>
<td>Results/findings</td>
<td><strong>General interventions in socioeconomically deprived populations</strong></td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| **Comprehensive antenatal care: group antenatal care** | - 2 x studies. Women in groups of 8-10 received all antenatal care (including assessments) in a communal/group setting. First receive prenatal assessments and then session focuses on formal discussion, education, and skills-building on issues related to pregnancy, childbirth and parenting. Groups met every 2 weeks for 1.5-2hrs.  
  - 1st study inconclusive due to selection bias  
  - 2nd study significant reduction in PTB (adjusted odds ratio 0.67, 95% CI 0.44-0.98) in intervention group |
| **Comprehensive multidisciplinary ANC with outreach services.** | - Temple Infant and Parent Support Services (TIPPS) program. Included complete antenatal and delivery care, wellbaby care, health education, nutritionist care and counselling and psychosocial care. Provided assistance with transport and childcare. Antenatal, labour, delivery and postpartum care were provided by certified nurse/midwives with complex and high-risk pregnancies supervised by a medical director and senior obstetric residents.  
  - Authors reported significant programme benefit on PTB (4.3% preterm vs. 12% in a “matched” comparator group). Risk of selection bias so reviewers considered the findings inconclusive but consistent with a possible beneficial effect |
| **Comprehensive ANC: Nurse/midwife ANC clinics.** | - *Neighbourhood Pregnancy Care.* Community based clinic in which care is provided by advanced practice nurses/midwives and an obstetrician. Included patient reminders to ensure attendance at scheduled appointments and aimed to provide continuity of care, patient education, case management and coordination of referrals.  
  - Poor quality. No evidence of beneficial effect.  
- Nurse/midwife antenatal care model. Antenatal, delivery, and postpartum care was provided at these clinics to qualifying low-risk, low-income women by certified nurse/midwives, nurse practitioners and public health nurses, guided by protocols provided by the supervising obstetrician.  
  - Poor quality. No evidence of beneficial effect |
| **Comprehensive ANC: US public ANC programmes** | - *Improved Pregnancy Outcome.* Included regularly scheduled medical examinations and lab work, health and nutritional counseling, pregnancy and parenting education, assistance with delivery arrangements, postpartum and well baby care, and family planning services. Also screened for risk of preterm birth.  
- *TennCare.* Medicaid Managed Care programme.  
- Authors felt these had limited relevance to a UK context. |
Comprehensive ANC: general ANC clinics providing an enhanced range of services.
- **New York’s Prenatal Care Assistance Programme (PCAP).** Includes patient outreach, meeting ACOG standards, risk assessment, development of care plans, nutritional services, health education, psychological assessment and HIV services. If clinics met this they were given financial incentives.
  - Mixed evidence. Study inconclusive but may have a beneficial effect. Adjusted OR for PTB (<37 weeks): 0.57, 95% CI: 0.34-0.97.

**Services adjunct to comprehensive care: case management/care coordination**
- **Maternity care coordination.** Programme for Medicaid recipients which helped them receive services and provide social and emotional support. Included outreach, assessment, service planning, coordination and referral, follow-up, monitoring and education/counselling.
  - Mixed evidence. Study inconclusive but may demonstrate a beneficial effect on neonatal/infant mortality. adjusted odds ratio: 1.20, 95% CI 0.98–1.47
- **Illinois Family Case Management Program.** Case management services including needs assessment, planning of services, referral, monitoring, advocacy. Also included education to promote healthy behaviour and on facilitating access to antenatal care and other services.
  - Poor quality no evidence of a beneficial effect.

**Services adjunct to comprehensive care: Nurse home visits**
- **Florina programme.** Outreach health education/counselling service provided by nurses attached to primary care centres in a rural mountainous area of Greece. Involved fortnightly visits which emphasised nutritional counselling. Other themes covered during pregnancy included general hygiene, preparation for delivery, breastfeeding and care of the newborn. Visits continued for 12 months post delivery.
  - Mixed evidence. Study inconclusive but may demonstrate a beneficial effect on PTB (3.7% vs 8.3%)
- **Elmira model.** Similar to the Family Nurse Partnership model which was being tested in England at the time of this review and therefore not included. Involved antenatal and postnatal visits to improve the health, well-being and self-sufficiency of young first-time parents and their children. Involved 7 home visits during pregnancy to focus on health behaviours and recognising signs and symptoms of pregnancy disorders.
  - Good evidence. No evidence of a beneficial effect.
- **Syracuse Healthy Start programme.** Involve enrolling women to ensure they received ANC and to follow-up ensure appointments were kept, screening for social risk, home visiting/case management, education and referral to other services.
  - Poor evidence. No evidence of a beneficial effect.
### Interventions for women at risk of preterm birth.

**Clinic based: broad, multifaceted enhanced care.**

- Programme for Hispanic, medically indigent women in West Los Angeles. Included fortnightly visits, pre-term prevention education, psychosocial and nutritional screening and crisis intervention. Women were additionally randomised to receive one of five treatments (control, bed rest, psychological support, oral progestin or placebo).
  - Mixed evidence. Study inconclusive but may demonstrate a beneficial effect. Unadjusted % of PTB 54% vs 49%.

- *Mother and Family Speciality Centre.* Focused on smoking cessation, weight gain and vitamin mineral supplementation and amelioration of psychosocial stress/isolation. Included group sessions, standing appointments, evening hrs, reminders, evening hours, child care
  - Mixed evidence. No evidence of a beneficial effect on PTB adjusted odds ratio 0.78, 95% confidence interval 0.58-1.04.

- *Program to Reduce Obstetrical Problems and Prematurity.* Study focused on twin gestations. Includes preterm prevention education, risk assessment, health risk behaviours and a specialized clinic. Biweekly cervical assessment when premature cervical dilation is documented.
  - Poor evidence. No evidence of a beneficial effect.

**Clinic based: Programme with focus on patient education plus additional visits/ pelvic examinations.**

- Weekly visits with routine obstetric care and preterm education. USS examination if gestation unknown.
  - Poor evidence. No evidence of a beneficial effect.

**Clinic based: Hospital clinic vs managed care.**

- Intervention not described
  - Poor evidence. No evidence of a beneficial effect.

### Home visits/telephone support

- Additional antenatal support programme. Targeted women with poor obstetric histories and not specifically disadvantaged but a stratified (post hoc) sub-group analysis on effects of social class was conducted. Included 4-6 weekly (or more if requested) visits by the women with intervening telephone calls.
  - Mixed evidence. No evidence of a beneficial effect. PTB Stratified OR (by social class): 0.84, 95% CI:0.65-1.09.

- Telephone support programme. Women received a booklet and additional instruction about the signs and symptoms of preterm labour followed by scheduled nurse phone calls.
Mixed evidence. No evidence of a beneficial effect. PTB Relative Risk 0.87, 95% CI: 0.62-1.22.

- Social support intervention. Minimum of 3 home visits and 2 phone contacts or brief home visits between these times. MWs on call for the women 24 hrs. For women with a previous LBW baby. Referred women for clinical care or to a social worker if necessary
  - Good evidence. No evidence of a beneficial effect. 18% vs 19% PTB rate.

**Interventions for special at risk populations**

**Teen Clinics**

- **Young Women’s Clinic.** Team consisted of a public health nurse and a social worker, who provided services in the clinic or community, a registered dietician, certified nurse midwives and an adolescent physician who provides non-obstetric medical care in the clinic.
  - Poor evidence. No evidence of a beneficial effect.

- **Teen Pregnancy and Parenting Clinic.** Team consisted of a nurse clinician, social worker, registered dietician, WIC certifier, health educator and a family physician as medical director.
  - Poor evidence. No evidence of a beneficial effect.

- **Young and Pregnant.** Dedicated clinic at a DGH in the North of England. Philosophy was to provide continuity of care and to build up a relationship of trust with the teenagers. psychosocial support and maternity care appropriate to need by a named midwife and a single named consultant. Provides group and one-to-one parent education sessions.
  - Poor evidence. No evidence of a beneficial effect.

- Teen clinic in a low income area of Texas. provides general monitoring of pregnancy in addition to special emphasis on educational, social and nutritional support. The care is provided by a team of nurses, physicians assistants, obstetrician-gynaecologist residents, a social worker and a nutritionist
  - Poor evidence. No evidence of a beneficial effect.

- **Multidisciplinary teenage antenatal clinics in Australia.** Obstetric doctors, clinical midwives, midwife nurse educators, social workers and a psychiatrist, aimed to provide comprehensive, teenage-specific care including rigorous infection screening and social support.
  - Poor evidence. No evidence of a beneficial effect.

- **Dedicated clinic for younger teenagers (<16).** DGH in NE England. Unit is run by midwives with medical back-up as required. Friendly and informal setting and flexible.
  - Poor evidence. No evidence of a beneficial effect.

- **Young Mom’s Clinic.** aimed to address the physical, psychosocial, educational and financial needs of young mothers in a developmentally appropriate manner throughout
pregnancy and the neonatal period. Helped build trust, access to services, co-ordinate appointments with classes and provide a confidential and supportive atmosphere for peer interaction
  - Poor evidence. No evidence of a beneficial effect.
- Teen focused obstetric clinic. clinic was staffed by a single, rotating senior resident. No other information provided.
  - Poor evidence. No evidence of a beneficial effect.

**Adolescent group antenatal care for Teenagers**
- **CenteringPregnancy.** comprehensive antenatal care programme which emphasizes assessment, education and support
  - Poor evidence. No evidence of a beneficial effect.

**Nutritional Programme for Teenagers**
- **Higgins Nutrition Intervention Programme.** Programme delivered by dieticians as an adjunct to routine ANC.
  - Mixed evidence. Study inconclusive but may demonstrate a beneficial effect. PTB <37 weeks adjusted odds ratio 0.59, 95% CI 0.45-0.78 and PTB <34 weeks (adjusted odds ratio 0.53, 95% CI 0.35-0.81)

**Substance abuse programme as an adjunct to ANC**
- **Early Start Program** screening and early identification of substance abuse problems, early intervention, ongoing counselling, and case management by a clinical therapist. Women identified as having some risk for alcohol, tobacco or other drug use during pregnancy were referred for assessment
  - Poor evidence. No evidence of a beneficial effect.
- **Shared Care for pregnant drug users.** Inner-city hospital in Manchester, UK. Involved a Drug Liaison Midwife who was based in the Manchester Drug Service who provided liaison with the hospital services. At first ANC visit the obstetrician would see the women with the DLM. If an appointment was missed the DLM would carry out a home visit and also gave specialist advice regarding methadone treatment, care of the newborn and the advantages of breastfeeding. Also shared information with the neonatal unit and social worker to ensure child protection issues identified. Admission to neonatal unit only if medically necessary. Also supervised care after discharge from hospital.
  - Poor evidence. No evidence of a beneficial effect.
- **Project Link.** Intensive hospital-based substance abuse programme for pregnant and post-partum women in RI. Involved included crisis intervention, comprehensive psychosocial and substance use assessment, individualized treatment plan development, individual and group therapy, child and family therapy, home visiting, parenting education and support, and infant developmental assessment. Also included transport and child care.
  - Poor evidence. No evidence of a beneficial effect.
- **Prenatal Substance Abuse Clinic.** Included psychiatric or psychological evaluation, counselling and treatment, drug use avoidance strategies, crisis intervention,
individual and group counselling, detoxification, family
counselling, and long-term aftercare. Could be either
inpatient or outpatient treatment.
  - Poor evidence. No evidence of a beneficial effect.

Interventions targeting indigenous women
- **Strong women Strong babies.** Community-based
  programme to improve attendance at ANC and
  nutritional assessment/education. Programme
developed by a well-respected woman in the
  community.
  - Poor evidence. No evidence of a beneficial effect.
- **Mums and Babies program.** Standard antenatal shared-
care protocols were used with some additional infection
  screening. Patients were seen by a multidisciplinary
  team which included Aboriginal Health workers,
  midwives/child health nurses, female doctors, members
  of the obstetric team and indigenous outreach health
  workers. Also included walk in clinics, brief
  interventions, screening and transport.
  - Poor evidence. No evidence of a beneficial effect.

### Significance/direction

**Comments**
Good quality review

### Study Details

<table>
<thead>
<tr>
<th><strong>Study Details</strong></th>
<th><strong>711</strong></th>
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<tbody>
<tr>
<td><strong>Author/year</strong></td>
<td>Till et al. 2015</td>
</tr>
<tr>
<td><strong>Title</strong></td>
<td>Incentives for increasing prenatal care use by women in order to improve maternal and neonatal outcomes.</td>
</tr>
<tr>
<td><strong>Review theme</strong></td>
<td>Socially disadvantaged and vulnerable women</td>
</tr>
<tr>
<td><strong>Objectives</strong></td>
<td>To determine whether incentives are an effective tool to increase utilization of timely prenatal care among women</td>
</tr>
<tr>
<td><strong>Participants</strong></td>
<td>All pregnant women were included. 11,935 pregnancies but only 1893 pregnancies contributed to outcomes</td>
</tr>
<tr>
<td><strong>Setting/Context</strong></td>
<td>Low income communities</td>
</tr>
<tr>
<td><strong>Description of Interventions/phenomena of interest</strong></td>
<td>Programmes that offer incentives directly in exchange for participation in prenatal care. Three trials offered cash or shop vouchers. Two trials offered things for the baby (e.g. baby carrier, blanket, Gerry cuddler) or taxi vouchers.</td>
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</tbody>
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### Search Details

<table>
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<tr>
<th><strong>Sources</strong></th>
<th>CENTRAL, MEDLINE, EMBASE, CINAHL</th>
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<td><strong>Range (years) of included studies</strong></td>
<td>1994-2009</td>
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<tr>
<td><strong>No. of studies</strong></td>
<td>5 (only 4 in the meta-analysis due to format of data). Note 7 articles reported on one trial.</td>
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<tr>
<td><strong>Types of studies included</strong></td>
<td>3 x RCTs and 2 x CCTs</td>
</tr>
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<td><strong>Country of origin of included studies</strong></td>
<td>USA (n=3), Mexico (n=1), Honduras (n=1)</td>
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### Appraisal

<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Appraisal instruments used</strong></td>
<td>Cochrane ROB tool</td>
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</table>
### Appraisal rating
- Sequence Generation: 3 studies low risk and 2 unclear
- Allocation concealment: 3 studies low risk and 2 unclear
- Blinding of participants and personnel. All high ROB
- Blinding of outcome assessment. All high ROB
- Incomplete outcome data. All low ROB
- Selective reporting. 3 studies low risk and 2 high
- Other biases. All low ROB

### Analysis
**Method of analysis**
Meta-analysis

**Outcome assessed**
No data on primary outcomes of PTB, small for gestational age or perinatal death.
Data available for adequacy of ANC, frequency of ANC, initiation of ANC, return for postpartum care, caesarean section.

**Results/findings**
- Adequacy of ANC (1 study, n=892). Z = 2.89 (P = 0.0039)
- Frequency of ANC (1 study, n=606). Z = 2.15 (P = 0.032)
- Initiation of ANC (1 study, n=94). Z = 0.24 (P = 0.81)
- Return for PNC (2 studies, n=833). Z = 0.46 (P = 0.65). $I^2$=98%
- Caesarean rate (1 study, n=979). Z = 2.58 (P = 0.010)

**Significance/direction**
- For adequacy of ANC favours intervention and is significant.
- For frequency of ANC favours intervention and is significant.
- For initiation of ANC favours intervention and is not significant.
- For return for PNC favours no intervention and is not significant.

**Comments**
Good quality review

### Study Details
- 713
- **Author/year**
  Hodnett et al. 2010
- **Title**
  Support during pregnancy for women at increased risk of low birthweight babies
- **Review theme**
  Socially disadvantaged and vulnerable women
- **Objectives**
  To assess effects of programs offering additional social support compared with routine care, for pregnant women believed at high risk for giving birth to babies that are either preterm or weigh less than 2500 gm, or both, at birth. Secondary objectives were to determine whether effectiveness of support was mediated by timing of onset (early versus later in pregnancy) or type of provider (healthcare professional or lay woman).
- **Participants**
  Women judged to be at risk of having preterm or growth restricted babies (n=12264)
- **Setting/Context**
  Socially disadvantaged populations
- **Description of Interventions/phenomena of interest**
  Standardized or individualized programs of additional social support, provided in either home visits, during regular antenatal clinic visits, and/or by telephone on several occasions during pregnancy

### Search Details
- **Sources**
  CENTRAL, MEDLINE, hand searching of journals.
- **Range (years) of included studies**
  1986-2001
- **No. of studies**
  17
### Types of studies included
- RCTs

### Country of origin of included studies
- Australia, UK, France, Latin America, South Africa, USA

### Appraisal

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<th>Cochrane ROB tool</th>
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<tr>
<td>Allocation concealment</td>
<td>6 studies low risk and 11 unclear</td>
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<tr>
<td>Blinding</td>
<td>9 studies unclear and 8 low risk</td>
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<tr>
<td>Incomplete outcome data</td>
<td>16 low ROB and 1 high ROB</td>
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<td>Selective reporting</td>
<td>16 low ROB and 1 high ROB</td>
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<tr>
<td>Other biases</td>
<td>All low ROB</td>
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### Analysis

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<th>Meta-analysis</th>
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<tbody>
<tr>
<td>Primary outcomes</td>
<td>Caesarean birth</td>
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<tr>
<td></td>
<td>Gestational age less than 37 weeks at birth</td>
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<tr>
<td></td>
<td>Birthweight less than 2500 gm</td>
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<tr>
<td></td>
<td>Stillbirth/neonatal death</td>
</tr>
<tr>
<td>Secondary</td>
<td>Antenatal hospital admission</td>
</tr>
<tr>
<td></td>
<td>Postnatal re-hospitalization (for mother)</td>
</tr>
<tr>
<td></td>
<td>Postnatal depression</td>
</tr>
<tr>
<td></td>
<td>Less than highly satisfied with antenatal care</td>
</tr>
<tr>
<td></td>
<td>Long-term morbidity</td>
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<table>
<thead>
<tr>
<th>Results/findings</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Termination of pregnancy</td>
<td>5 studies, n=5587. Z = 2.95 (P = 0.0032) I² = 0.0%</td>
</tr>
<tr>
<td>Very satisfied with care</td>
<td>1 study, n=1887. Z = 0.61 (P = 0.54)</td>
</tr>
<tr>
<td>Antenatal depression</td>
<td>1 study, n=509. Z = 1.16 (P = 0.24)</td>
</tr>
<tr>
<td>Antenatal hospital admission</td>
<td>3 studies, n=737. Z = 3.04 (P = 0.0024)</td>
</tr>
<tr>
<td>Caesarean birth rate</td>
<td>9 studies, n=4522. Z = 2.48 (P = 0.013). I² = 0%</td>
</tr>
<tr>
<td>Gestational age at birth &lt;37 weeks</td>
<td>11 studies, n=10429. Z = 1.71 (P = 0.086). I² = 0%</td>
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<tr>
<td>Birthweight &lt;2500g</td>
<td>11 studies, n=8681. Z = 1.43 (P = 0.15). I² = 0.00%</td>
</tr>
<tr>
<td>Stillbirth/neonatal death</td>
<td>11 studies, n=7522. Z = 0.27 (P = 0.79). I² = 20%</td>
</tr>
<tr>
<td>Post-natal re-hospitalization of mother</td>
<td>1 study, n=173. Z = 1.32 (P = 0.19)</td>
</tr>
<tr>
<td>Post-natal depression</td>
<td>1 study, n=258. Z = 1.49 (P = 0.14)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Significance/direction</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Termination of pregnancy</td>
<td>Favours intervention, significant.</td>
</tr>
<tr>
<td>Very satisfied with care</td>
<td>Favours control. Not significant.</td>
</tr>
<tr>
<td>Antenatal depression</td>
<td>Favours intervention not significant</td>
</tr>
</tbody>
</table>
- Antenatal hospital admission. Favours intervention significant
- Caesarean birth rate. Favours intervention significant
- Preterm birth <37 weeks. Favours intervention, non-significant
- Birthweight <2500g. Favours intervention, non-significant
- Stillbirth/neonatal death Favours intervention, non-significant
- Post-natal re-hospitalization of mother. Favours control, non-significant
- Post-natal depression. Favours intervention, non-significant

| Comments          | High quality review |
Appendix 4 Critical Appraisal
Appendix 4.1 Critical Appraisal of Systematic Reviews

<table>
<thead>
<tr>
<th>Study identification</th>
<th>Hollowell et al. 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Include author, title, reference, year of publication</td>
<td>A systematic review of the effectiveness of antenatal care programmes to reduce infant mortality and its major causes in socially disadvantaged and vulnerable women</td>
</tr>
</tbody>
</table>

Checklist completed by: Anna Gavine

**SCREENING QUESTIONS**

<table>
<thead>
<tr>
<th>In a well-conducted, relevant systematic review:</th>
<th>Circle or highlight one option for each question</th>
</tr>
</thead>
<tbody>
<tr>
<td>The review addresses an appropriate and clearly focused question that is relevant to the guideline review question</td>
<td>Yes</td>
</tr>
<tr>
<td>The review collects the type of studies you consider relevant to the guideline review question</td>
<td>Yes</td>
</tr>
<tr>
<td>The literature search is sufficiently rigorous to identify all the relevant studies</td>
<td>Yes</td>
</tr>
<tr>
<td>Study quality is assessed and reported</td>
<td>Yes</td>
</tr>
<tr>
<td>An adequate description of the methodology used is included, and the methods used are appropriate to the question</td>
<td>Yes</td>
</tr>
<tr>
<td>Study identification</td>
<td>Oakley et al. 2009</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Include author, title, reference, year of publication</td>
<td>A systematic review of the effectiveness of interventions to increase the early initiation of antenatal care in socially disadvantaged and vulnerable women</td>
</tr>
</tbody>
</table>

Checklist completed by: Anna Gavine

### SCREENING QUESTIONS

<table>
<thead>
<tr>
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<tr>
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<tr>
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</tr>
<tr>
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<td>Yes</td>
</tr>
</tbody>
</table>
### Study identification

*Include author, title, reference, year of publication*

<table>
<thead>
<tr>
<th>Hodnett et al. 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support during pregnancy for women at increased risk of low birthweight babies</td>
</tr>
</tbody>
</table>

### Checklist completed by:

| Anna Gavine |

### SCREENING QUESTIONS

<table>
<thead>
<tr>
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<tbody>
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<tr>
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</tr>
<tr>
<td>The literature search is sufficiently rigorous to identify all the relevant studies</td>
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</tr>
<tr>
<td>Study quality is assessed and reported</td>
<td>Yes</td>
</tr>
<tr>
<td>An adequate description of the methodology used is included, and the methods used are appropriate to the question</td>
<td>Yes</td>
</tr>
<tr>
<td>Study identification</td>
<td>Till et al. 2015</td>
</tr>
<tr>
<td>----------------------</td>
<td>------------------</td>
</tr>
<tr>
<td><em>Include author, title, reference, year of publication</em></td>
<td>Incentives for increasing prenatal care use by women in order to improve maternal and neonatal outcomes</td>
</tr>
</tbody>
</table>

Checklist completed by: Anna Gavine

**SCREENING QUESTIONS**

In a well-conducted, relevant systematic review: *Circle or highlight one option for each question*

<table>
<thead>
<tr>
<th>The review addresses an appropriate and clearly focused question that is relevant to the guideline review question</th>
<th>Yes</th>
<th>No</th>
<th>Unclear</th>
</tr>
</thead>
<tbody>
<tr>
<td>The review collects the type of studies you consider relevant to the guideline review question</td>
<td>Yes</td>
<td>No</td>
<td>Unclear</td>
</tr>
<tr>
<td>The literature search is sufficiently rigorous to identify all the relevant studies</td>
<td>Yes</td>
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<td>Unclear</td>
</tr>
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<td>No</td>
<td>Unclear</td>
</tr>
<tr>
<td>An adequate description of the methodology used is included, and the methods used are appropriate to the question</td>
<td>Yes</td>
<td>No</td>
<td>Unclear</td>
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</tbody>
</table>
### Appendix 4.2 Critical Appraisal of Guidelines

<table>
<thead>
<tr>
<th>Question</th>
<th>NICE Pregnancy and Complex Social Factors</th>
<th>NICE antenatal and postnatal mental health</th>
<th>NICE maternal and infant nutrition</th>
<th>RCOG Good Practice Guideline on management of women with mental health issues during pregnancy and in the post-natal period</th>
<th>RCN Pregnancy and disability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Did the preparation and publication of these guidelines involve a significant conflict of interest?</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>2. Are the guidelines concerned with an appropriate topic, and do they state clearly the goal of ideal treatment in terms of health and/or cost outcome?</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>3. Was a specialist in the methodology of secondary research (e.g. meta-analyst) involved?</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>?</td>
<td>N</td>
</tr>
<tr>
<td>4. Have all the relevant data been scrutinised and are guidelines’ conclusions in keeping with the data?</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>?</td>
<td>N</td>
</tr>
<tr>
<td>5. Do they address variations in clinical practice and other controversial areas (e.g. optimum care in response to genuine or perceived underfunding)?</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>6. Are the guidelines valid and reliable?</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>?</td>
<td>N</td>
</tr>
<tr>
<td>7. Are they clinically relevant, comprehensive and flexible?</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>8. Do they take into account what is acceptable to, affordable by and practically possible for patients?</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>9. Do they include recommendations for their own dissemination, implementation and periodic review?</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>
Appendix 5 Recommendations from NICE Guidelines on Pregnancy and Complex Social Factors

The following recommendations are made in the NICE Guidelines on Pregnancy and Complex Social Factors (NICE, 2010, p.11-p.21):

**General recommendations for all women complex social factors.**

**Service organisation**
- In order to inform mapping of their local population to guide service provision, commissioners should ensure that the following are recorded:
  - The number of women presenting for antenatal care with any complex social factor
  - The number of women within each complex social factor grouping identified locally

- Commissioners should ensure that the following are recorded separately for each complex social factor grouping:
  - The number of women who:
    - attend for booking by 10, 12+6 and 20 weeks
    - attend for the recommended number of antenatal appointments, in line with national guidance
    - experience, or have babies who experience, mortality or significant morbidity
  - The number of appointments each woman attends
  - The number of scheduled appointments each woman does not attend

- Commissioners should ensure that women with complex social factors presenting for antenatal care are asked about their satisfaction with the services provided; and the women's responses are:
  - recorded and monitored
  - used to guide service development

- Commissioners should involve women and their families in determining local needs and how these might be met.

- Those responsible for the organisation of local maternity services should enable women to take a copy of their hand-held maternity notes when moving from one area or hospital to another.

**Training for healthcare staff**
- Healthcare professionals should be given training on multi-agency needs assessment and national guidelines on information sharing

**Care Provision**
- Consider initiating a multi-agency needs assessment, including safeguarding issues, so that the woman has a coordinated care plan.
- Respect the woman’s right to confidentiality and sensitively discuss her fears in a non-judgemental manner
• Tell the woman why and when information about her pregnancy may need to be shared with other agencies.
• Ensure that the hand-held maternity notes contain a full record of care received and the results of all antenatal tests.

Information and Support for Women

• For women who do not have a booking appointment at the first contact with any healthcare professional:
  o discuss the need for antenatal care
  o offer the woman a booking appointment in the first trimester, ideally before 10 weeks if she wishes to continue the pregnancy, or offer referral to sexual health services if she is considering termination of the pregnancy

• At the first contact and at the booking appointment, ask the woman to tell her healthcare professional if her address changes, and ensure that she has a telephone number for this purpose.

• At the booking appointment, give the woman a telephone number to enable her to contact a healthcare professional outside of normal working hours, for example the telephone number of the hospital triage contact, the labour ward or the birth centre.

• In order to facilitate discussion of sensitive issues, provide each woman with a one-to-one consultation, without her partner, a family member or a legal guardian present, on at least one occasion.

Pregnant women who misuse substances

Pregnant women who misuse substances may be anxious about the attitudes of healthcare staff and the potential role of social services. They may also be overwhelmed by the involvement of multiple agencies. These women need supportive and coordinated care during pregnancy:

• Work with social care professionals to overcome barriers to care for women who misuse substances. Particular attention should be paid to:
  o integrating care from different services
  o ensuring that the attitudes of staff do not prevent women from using services
  o addressing women’s fears about the involvement of children’s services and potential removal of their child, by providing information tailored to their needs
  o addressing women’s feelings of guilt about their misuse of substances and the potential effects on their baby

Service Organisation

• Healthcare commissioners and those responsible for providing local antenatal services should work with local agencies, including social care and third-sector agencies that provide substance misuse services, to coordinate antenatal care by, for example:
  o jointly developing care plans across agencies
  o including information about opiate replacement therapy in care plans
  o co-locating services
  o offering women information about the services provided by other agencies

• Consider ways of ensuring that, for each woman who misuses substances:
  o progress is tracked through the relevant agencies involved in her care
  o notes from the different agencies involved in her care are combined into a single document
o there is a coordinated care plan.
• Offer the woman a named midwife or doctor who has specialised knowledge of, and experience in, the care of women who misuse substances, and provide a direct-line telephone number for the named midwife or doctor.

Training for healthcare staff
• Healthcare professionals should be given training on the social and psychological needs of women who misuse substances.
• Healthcare staff and non-clinical staff such as receptionists should be given training on how to communicate sensitively with women who misuse substances.

Information and support for women
• The first time a woman who misuses substances discloses that she is pregnant, offer her referral to an appropriate substance misuse programme.
• Use a variety of methods, for example text messages, to remind women of upcoming and missed appointments.
• The named midwife or doctor should tell the woman about relevant additional services (such as drug and alcohol misuse support services) and encourage her to use them according to her individual needs.
• Offer the woman information about the potential effects of substance misuse on her unborn baby, and what to expect when the baby is born, for example what medical care the baby may need, where he or she will be cared for and any potential involvement of social services.
• Offer information about help with transportation to appointments if needed to support the woman's attendance.

Pregnant women who are recent migrants, asylum seekers or refugees, or who have difficulty reading or speaking English
Pregnant women who are recent migrants, asylum seekers or refugees, or who have difficulty reading or speaking English, may not make full use of antenatal care services. This may be because of unfamiliarity with the health service or because they find it hard to communicate with healthcare staff:
• Healthcare professionals should help support these women's uptake of antenatal care services by:
  o using a variety of means to communicate with women
  o telling women about antenatal care services and how to use them
  o undertaking training in the specific needs of women in these groups

Service Organisation
• Commissioners should monitor emergent local needs and plan and adjust services accordingly
• Healthcare professionals should ensure they have accurate information about a woman’s current address and contact details during her pregnancy by working with local agencies that provide housing and other services for recent migrants, asylum seekers and refugees, such as asylum centres.
To allow sufficient time for interpretation, commissioners and those responsible for the organisation of local antenatal services should offer flexibility in the number and length of antenatal appointments when interpreting services are used, over and above the appointments outlined in national guidance.

Those responsible for the organisation of local antenatal services should provide information about pregnancy and antenatal services, including how to find and use antenatal services, in a variety of:

- formats, such as posters, notices, leaflets, photographs, drawings/diagrams, online video clips, audio clips and DVDs
- settings, including pharmacies, community centres, faith groups and centres, GP surgeries, family planning clinics, children’s centres, reception centres and hostels
- languages.

**Training for healthcare staff**

Healthcare professionals should be given training on:

- the specific health needs of women who are recent migrants, asylum seekers or refugees, such as needs arising from female genital mutilation or HIV
- the specific social, religious and psychological needs of women in these groups
- the most recent government policies on access and entitlement to care for recent migrants, asylum seekers and refugees

**Information and support for women**

- Offer the woman information on access and entitlement to healthcare.
- At the booking appointment discuss with the woman the importance of keeping her hand-held maternity record with her at all times.
- Avoid making assumptions based on a woman’s culture, ethnic origin or religious beliefs.

**Communication with women who difficulty reading or speaking English**

- Provide the woman with an interpreter (who may be a link worker or advocate and should not be a member of the woman’s family, her legal guardian or her partner) who can communicate with her in her preferred language
- When giving spoken information, ask the woman about her understanding of what she has been told to ensure she has understood it correctly

**Young pregnant women under 20**

Young pregnant women aged under 20 may feel uncomfortable using antenatal care services in which the majority of service users are in older age groups. They may be reluctant to recognise their pregnancy or inhibited by embarrassment and fear of parental reaction. They may also have practical problems such as difficulty getting to and from antenatal appointments.

Healthcare professionals should encourage young women aged under 20 to use antenatal care services by:

- offering age-appropriate services
- being aware that the young woman may be dealing with other social problems
- offering information about help with transportation to and from appointments
- offering antenatal care for young women in the community
o providing opportunities for the partner/father of the baby to be involved in the young woman’s antenatal care, with her agreement.

Service Organisation

- Commissioners should work in partnership with local education authorities and third-sector agencies to improve access to, and continuing contact with, antenatal care services for young women aged under 20.
- Commissioners should consider commissioning a specialist antenatal service for young women aged under 20, using a flexible model of care tailored to the needs of the local population. Components may include:
  o antenatal care and education in peer groups in a variety of settings, such as GP surgeries, children’s centres and schools
  o antenatal education in peer groups offered at the same time as antenatal appointments and at the same location, such as a 'one-stop shop' (where a range of services can be accessed at the same time).
- Offer the young woman aged under 20 a named midwife, who should take responsibility for and provide the majority of her antenatal care, and provide a direct-line telephone number for the named midwife.

Training for healthcare staff

- Healthcare professionals should be given training to ensure they are knowledgeable about safeguarding responsibilities for both the young woman and her unborn baby, and the most recent government guidance on consent for examination or treatment.

Information and support for women

- Offer young women aged under 20 information that is suitable for their age – including information about care services, antenatal peer group education or drop-in sessions, housing benefit and other benefits – in a variety of formats.

Pregnant women who experience domestic abuse

A woman who is experiencing domestic abuse may have particular difficulties using antenatal care services: for example, the perpetrator of the abuse may try to prevent her from attending appointments. The woman may be afraid that disclosure of the abuse to a healthcare professional will worsen her situation, or anxious about the reaction of the healthcare professional.

- Women who experience domestic abuse should be supported in their use of antenatal care services by:
  o training healthcare professionals in the identification and care of women who experience domestic abuse
  o making available information and support tailored to women who experience or are suspected to be experiencing domestic abuse
  o providing a more flexible series of appointments if needed
  o addressing women’s fears about the involvement of children’s services by providing information tailored to their needs.

Service organisation
• Commissioners and those responsible for the organisation of local antenatal services should ensure that local voluntary and statutory organisations that provide domestic abuse support services recognise the need to provide coordinated care and support for service users during pregnancy.

• Commissioners and those responsible for the organisation of local antenatal services should ensure that a local protocol is written, which:
  o is developed jointly with social care providers, the police and third-sector agencies by a healthcare professional with expertise in the care of women experiencing domestic abuse
  o includes:
    ▪ clear referral pathways that set out the information and care that should be offered to women
    ▪ the latest government guidance on responding to domestic abuse
    ▪ sources of support for women, including addresses and telephone numbers, such as social services, the police, support groups and women's refuges
    ▪ safety information for women
    ▪ plans for follow-up care, such as additional appointments or referral to a domestic abuse support worker
    ▪ obtaining a telephone number that is agreed with the woman and on which it is safe to contact her
    ▪ contact details of other people who should be told that the woman is experiencing domestic abuse, including her GP.

• Commissioners and those responsible for the organisation of local antenatal services should provide for flexibility in the length and frequency of antenatal appointments, over and above those outlined in national guidance to allow more time for women to discuss the domestic abuse they are experiencing.

• Offer the woman a named midwife, who should take responsibility for and provide the majority of her antenatal care.

**Training for healthcare staff**

• Commissioners of healthcare services and social care services should consider commissioning joint training for health and social care professionals to facilitate greater understanding between the two agencies of each other's roles, and enable healthcare professionals to inform and reassure women who are apprehensive about the involvement of social services.

• Healthcare professionals need to be alert to features suggesting domestic abuse and offer women the opportunity to disclose it in an environment in which the woman feels secure. Healthcare professionals should be given training on the care of women known or suspected to be experiencing domestic abuse that includes:
  o local protocols
  o local resources for both the woman and the healthcare professional
  o features suggesting domestic abuse
  o how to discuss domestic abuse with women experiencing it
  o how to respond to disclosure of domestic abuse.

**Information and support for women**

• Tell the woman that the information she discloses will be kept in a confidential record and will not be included in her hand-held record.
• Offer the woman information about other agencies, including third-sector agencies, which provide support for women who experience domestic abuse.
• Give the woman a credit card-sized information card that includes local and national helpline numbers.
• Consider offering the woman referral to a domestic abuse support worker
Appendix 6 Getting it Right for Every Child: Core Components

The following are the ten core components, upon which Getting it right for every child is based (Scottish Government, 2012, p.6)

1. A focus on improving outcomes for children, young people and their families based on a shared understanding of wellbeing
2. A common approach to gaining consent and to sharing information where appropriate
3. An integral role for children, young people and families in assessment, planning and intervention
4. A co-ordinated and unified approach to identifying concerns, assessing needs, and agreeing actions and outcomes, based on the Wellbeing Indicators
5. Streamlined planning, assessment and decision-making processes that lead to the right help at the right time
6. Consistent high standards of co-operation, joint working and communication where more than one agency needs to be involved, locally and across Scotland
7. A Named Person for every child and young person, and a Lead Professional (where necessary) to co-ordinate and monitor multi-agency activity
8. Maximising the skilled workforce within universal services to address needs and risks as early as possible
9. A confident and competent workforce across all services for children, young people and their families
10. The capacity to share demographic, assessment, and planning information electronically within and across agency boundaries
References


