

Antenatal Education

Evidence Review

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# Executive Summary

Antenatal education is a component of antenatal healthcare and in the UK may be offered as through the NHS or privately. The current national guidance on antenatal education, ‘From Birth and Beyond’, published in 2011 highlighted a lack of robust high-quality evidence on what works effectively. The aim of this report is to provide a review of the evidence for antenatal education since the publication of this guidance and to identify recommendations for the provision of antenatal education in Suffolk.

## Key Findings

### Outcomes

There is some good quality evidence on the content of antenatal education for first time parents (known as the transition to parenthood). Programmes for this group should include:

* Partners being involved in education/classes
* Information on the impact of parenting on the relationship, including sexual relations and strategies for coping
* Peer support and insights from new parents

There is no robust evidence to support interventions, targeted at mental health outcomes and mental health needs should be addressed through the provision of high-quality antenatal care.

There is limited evidence available regarding the antenatal education needs of vulnerable and high-risk groups. Recommendations focus on under 20-year olds who are outside the scope of this report.

Obstetric outcomes may include method of birth, pain relief, perineal healing and continence. There is some evidence that childbirth training workshops reduce the risk of caesarean births, while teaching pelvic floor exercises can improve urinary continence for up to 12 months post-birth.

### Models of delivery

There is very limited literature on whether specific theoretical models support the delivery and effectiveness of antenatal education.

One study suggested that Fishbein’s integrative model was most suitable as it considers the intentions of individuals as a key determinant of behaviour.

The National Perinatal Epidemiology Unit survey in 2014 highlighted that numbers of women attending face to face antenatal education classes was decreasing while use of online resources was increasing.

### Cost effectiveness

There is a lack of evidence for the cost effectiveness of existing models for service delivery due to limited studies including economic analyses.

# 1. Background

## 1.1 Antenatal Healthcare

Antenatal care (ANC) is defined as the care provided by skilled health-care professionals to pregnant women to ensure the best health conditions for both mother and baby during pregnancy. The components of ANC include risk identification; prevention and management of pregnancy-related or existing conditions, health education and health promotion (1). This literature review explores the current evidence base for the delivery of the antenatal education component of antenatal care.

The benefits of improving universal antenatal healthcare and supporting women with multiple and complex health and social care needs were highlighted in guidance published by the Scottish Government in 2011. This highlighted that access to antenatal healthcare can help improve the health of newborns and pressures on neonatal services as well as improve later outcomes. However poor and unequal access to antenatal healthcare contributes to inequalities in both maternal and infant mortality and morbidity an women and babies who are at the greatest risk of poor health outcomes are also the least likely to access and/or benefit from the antenatal healthcare that they need (2).

## 1.2 Antenatal Education

Antenatal education may be offered as part of routine antenatal care provision through the NHS or accessed through private and voluntary sector providers.

Historically, antenatal education programmes were developed in an attempt to reduce the pain experienced in labour and improve birth outcomes. More recently the focus has been on strategies to deal with parenthood, and relationship challenges and consequently education increasingly includes fathers or partners.

Most education is comprised of training sessions which provide information on topics such as pregnancy, the birth process, infant care and early parenthood and may give parents more confidence with parenting(3). More specific aims of antenatal education may include increasing knowledge, e.g. on antenatal and postnatal depression, pain relief and obstetric interventions, promoting breast feeding, and reducing birthing anxiety. Health promotion and risk reduction are other important aims of antenatal education (4).Additional aims may include enhanced parental self-efficacy and development of problem-solving strategies to cope with birth and parenthood(5).

# 2. Aims and Objectives

The aim of this report is to provide a review of the evidence base for antenatal education to support the Suffolk County Council, Childrens Services in developing a model for the delivery of antenatal education across Suffolk. The key objectives are to

* Summarise the relevant national guidance related to antenatal education
* Explore patient experiences of antenatal education
* Describe the current service provision in Suffolk
* Review the recent literature and provide recommendations to support service development and delivery

# 3. Methodology

At the request of the Suffolk County Council Children’s Services, the scope of this literature review was determined to be the provision of antenatal education. Excluded from the scope were the following topics which are not included in the commissioned service

* Antenatal education for teenage or young parents
* Breastfeeding education/support
* Antenatal smoking cessation

A literature search was requested via the Audrey Keep Library, North East London NHS Foundation Trust using the search terms

"antenatal education" or "antenatal training" or "antenatal care" or "antenatal support".

and the results of this search informed the results section of this report. (6)

An additional grey literature search and a search of the National Institute for Clinical and Health Excellence was carried out. These searches identified national reports, clinical guidance and the results of the National Perinatal Maternity Audit which is carried out every four years.

# 4. Results

## 4.1 National Guidance on Antenatal Education

**‘Standard for Maternity Care**’(7) published by the Royal College of Obstetricians and Gynaecologists in 2008 makes the following recommendation relating to antenatal education

1. Specialist services should be provided for pregnant teenagers, such as peer parent education and support groups and support in the community with relevant agencies, such as Connexions(i) and Sure Start Plus(ii) in England
2. Maternity services should provide comprehensive programmes of education for childbirth and parenthood to women and their partners and families
3. Audit indicators include availability of antenatal education and percentage of mothers receiving antenatal education on analgesia and anaesthesia
4. At the first contact, pregnant women should be offered information about: how the baby develops during pregnancy, nutrition and diet, including vitamin D supplements, exercise, including pelvic floor exercises, antenatal screening, including risks and benefits of the screening tests, the pregnancy care pathway, planning place of birth, breastfeeding, including workshops, participant-led antenatal classes, maternity benefits(7).

**‘Preparation for Birth and Beyond’** (2011) is an antenatal education resource pack developed by the Department of Health aimed at professionals and practitioners in the NHS, local authorities, and the voluntary and community sectors who lead and provide preparation for parenthood programmes and activities in their communities(6).

It identified that the evidence base for antenatal education was not robust but highlighted some key findings:

* Antenatal education has a role to play in improving knowledge of and preparation for parenthood. Participation in antenatal preparation courses is associated with higher satisfaction with the birth experience. There is also some evidence that antenatal education improves outcomes and the parenthood experience of mothers.
* There are differences between and among mothers and fathers, ethnic, faith and other groups that need to be understood and accommodated when delivering antenatal education. For example, parents from BME communities appreciate courses which have cultural and linguistic awareness. Some parents from these communities may favour courses based in their own community.
* Antenatal preparation courses can lead mothers and fathers to adopt a range of healthy behaviours that affect pregnancy, birth and early parenthood (as well as their own health), such as eating more healthily, cutting down or stopping smoking and taking more exercise.

It also reported that in general, group work has been found be both effective and cost effective. It is recommended that it is delivered by knowledgeable, skilled and dedicated practitioners. Groups should be responded to the needs of mothers and fathers with an emphasis on participative, rather than didactic learning methods that cover:

* practical skills and understanding for early childcare and parenting
* the transition to parenthood (TTP) preparing for life as a family, co-parenting, and how roles might change and how to manage expectations.
* the emotional aspects of being a parent including changes to relationships
* parent bonding, care and nurturing
* understanding a baby’s cues
* encouraging social support and making friends within the group

Classes which include topics on couple relationships, co-parenting, gender issues and father involvement, parenting skills, bonding and attachment, and problem-solving skills are related to better maternal well-being, improved confidence and the satisfaction of both parents with parental and the mother–baby/ father–baby relationships.

Group-based antenatal programmes that include parenting skills, bonding and attachment, and problem-solving skills are popular with parents, may improve maternal well-being, parental confidence and satisfaction with the couple and the parent–infant relationships

Group-based programmes have high levels of consumer satisfaction, partly because they offer parents the opportunity to develop supportive social networks with their peers and to learn from each other, as well as from the group leader.

Groups that encourage participation and active learning are more effective and popular and when groups are designed to meet the needs of fathers this improves their engagement

There is also some good evidence that focused and participative antenatal education can help to manage and reduce maternal anxiety and depression during pregnancy and early childhood, leading to improved coping, greater partner support and a better birth experience(6).

NICE guidance on ‘**Pregnancy and complex social factors: a model for service provision for pregnant women with complex social factors’** was published in 2018 and makes specific recommendations for antenatal education for

**Young women under the age of 20** - antenatal care and education should be provided in peer groups in a variety of settings, such as GP surgeries, children's centres and schools. Antenatal education in peer groups should be 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).

## 4.2 National Experiences of Antenatal Education

The National Perinatal Epidemiology Unit carries out periodic national surveys on women’s experiences of maternity care provision. The most recent survey was carried out in 2014. A random sample of 10,000 women giving birth in England over a two-week period were selected by the Office for National Statistics from birth registration records. The usable response rate was 47%, with responses from 4571 women. A total of 16% of respondents came from Black and Minority Ethnic (BME) groups, 24% had been born outside the UK and 13% were single parents.

Key findings from this survey in relation to antenatal education identified that (8).

### 4.2.1 Antenatal Education Classes

* Approximately two-thirds of women (65%) were offered classes or workshops compared to 69% in 2010.
* First-time mothers were more frequently offered (84%) than women who had previously given birth (45%)
* Some women did not want NHS classes - 20% of primiparous mothers and 39% of multiparous women declined.
* Younger women were more likely to have been offered classes (73% of those aged 19 or less, vs 56% of those of 40 or more years of age).
* Asian and Black women were less likely to be offered classes than White women (56% and 47% vs 65%).
* Women in the most and least deprived quintiles being least likely to have been offered classes.
* Significantly fewer women with previous birth experiences attended such education sessions (9% of multiparous women compared with 52% of first-time mothers).
* A minority of women attended non-NHS antenatal classes for which they paid (14%) and this was more common for women who had not given birth previously (23% vs 4%). This compares with 26 vs 12% in 2010.
* Women were significantly less likely to pay for antenatal classes if they were young, from a BME group, less educated and in the most deprived quintile.

### 4.2.3 NHS Parents Website

* Nearly a third of respondents reported being given the information about the NHS Parent website (31%)
* More first-time mothers reported being given information than women who had given birth before (37% vs 25%).
* Women aged 20—29 years were more likely to report being informed about the website. There was no significant difference by ethnicity or IMD.

### 4.2.3 Use of Online Websites

* Women were also asked if they used online websites for information about pregnancy and birth and 76% reported doing so.
* A range of websites were used and nearly three-quarters (73%) of the women in the study reported using a variety of NHS websites for information about pregnancy and birth.
* Many women used other websites for information about pregnancy and birth which provided information, discussion forums and opportunities for signing up for product information and samples
* There were significant effects of parity, age, ethnicity and IMD on the use of such websites. Use was significantly higher for first-time mothers than experienced mothers (85% vs 67%)
* It was also higher among mothers in their 30s compared to younger and older women (79% of women aged 30—34 years, vs 58% in mothers aged 16—19 years and 73% in women aged 45 years and over)
* Use was higher among white women than women from BME groups (78% vs 70%)
* Higher among those women living in less deprived areas (83% in the least deprived quintile vs 64% in the most deprived quintile).

This survey highlights a declining trend in use of face to face antenatal education and an increasing trend in the use of online resources, although some variation in parity, age, deprivation and ethnicity still exists.

## 4.3 Antenatal Education Services in Suffolk

There are around 7000 new births per annum in Suffolk, however data on the proportion of births to nulliparous women is not available.

### 4.3.1. Antenatal Groups in Suffolk

Across Suffolk a range of services are currently being provided from a variety of organisations:

**Bump, Birth and Beyond** is being offered through some Children’s Centres in west Suffolk and is co delivered by children’s centre staff and midwives. This is offered free and universally. The offer differs across teams from a 2-week to 6-week course, lasting approx. 2hrs. Some sessions are offered in the evenings and others are daytime with an average attendance of 8 couples.

**Lowestoft & Waveney Children’s Centres** offer a targeted antenatal course called B4Babe for parents from 20 weeks gestation, which runs over 9 weeks. B4BABE is a Relationship-based programme and aims to promote a positive relationship and secure attachment between the parents and baby– but also promote the development of a positive relationship between the parents and the group leaders. Handouts are provided to parents.

**Suffolk Babies** offer a free 4 hr preparation for birth workshop across many parts of the east for parents registered at Ipswich hospital. These are delivered from a variety of venues including children’s centres with attendance averaging 5-6 couples. In addition, they offer preparation for birth classes called ‘active birth’ which runs over 6 weeks at a cost of £10 a week. There are discounts for parents who are accessing other course with Suffolk Babies.

**Hypnobirthing** is being offered in the east through the midwifery service at Ipswich hospital. This runs for 10hrs over 4 weeks. Parents can purchase the book and disc for £15 and the maximum capacity is 6 couples.

**Infant Feeding (aka Breastfeeding)** workshops are being delivered across the county by midwifery teams. These are being delivered across a variety of venues including children’s centres. They are free and offered universally. Infant Feeding support is available via the Suffolk County Council health visiting website [www.suffolk.gov.uk/healthvisiting](http://www.suffolk.gov.uk/healthvisiting)

**Suffolk Wellbeing** offers 3 free online courses for parents and mums-to-be that offer help and support with building a strong relationship/attachment, coupled with tried and tested strategies, which are based on the cognitive behavioural therapy model. A link to access is available on the Suffolk County Council health visiting website. [www.suffolk.gov.uk/healthvisiting](http://www.suffolk.gov.uk/healthvisiting)

**National Childbirth Trust** offer antenatal classes across Suffolk, a signature course runs between 14 to 22 hrs and range in costs. There are discounts for families on lower incomes.

There are also some private practitioners who are providing private in-home and group support in breastfeeding, these are chargeable.

A number of pilot projects are running across Suffolk from midwifery services these include

* **The Maple Team** – A team of seven midwives and a midwifery support worker aiming to provide Continuity of Carer as part of a Nationwide programme. Currently they are only offering this model of care to a limited geographical area as a part of a pilot scheme. Parents are being informed by their named midwife if they are in the area. They are offering additional care, which includes a mid-pregnancy session, getting ready for your baby as well as postnatal care. In some areas group sessions are being delivered with some support from children’s centre staff. In addition to the extra antenatal offer, the hand over from birth to the health visitor is extended from 10 day to 28.
* **REACH Pregnancy programme** is being piloted in Ipswich South

### 4.3.2. Resources provided for parents to use at home to plan and prepare

Information is provided universally through the Suffolk County Council health visiting webpage [www.suffolk.gov.uk/heathvisitng](http://www.suffolk.gov.uk/heathvisitng) for parents which includes:

* **Tommy’s** – this is a pregnancy and postnatal digital wellbeing tool. The tool was created in partnership with the Institute of Health Visitors (IHV), the National Childbirth Trust (NCT), Netmums, Public Health England (PHE) and the Royal College of Midwives (RCM). [Your Baby’s Mum: A wellbeing plan for pregnancy and post-birth](http://email.tommys.org/c/1cvWNrz7toZx2IN8hEdYC0bu).
* **Suffolk Wellbeing** - offers 3 free online courses for parents and mums-to-be that offer help and support with building a strong relationship/attachment, coupled with tried and tested strategies which are based on the cognitive behavioural therapy model.

### 4.3.3. Strengths and gaps in the current offer

Across Suffolk parents could have attended Bump, Birth & Beyond as well as Active Birth through Suffolk Babies, so topics will be duplicated such as labour.

The pilot projects haven’t been co-delivered with the local health visiting service, which means that some of the health visiting care pathways and processes do not mirror the services being offered.

Apart from the online offer via the health visiting website there is a lack of consistency across the county in the antenatal education offer.

### 4.3.4. Feedback mechanisms

Within the health visiting service (Health & Children’s Centre) feedback forms are collected following completion of the Bump Birth and Beyond, however these are locally collated, so there is no county level data or feedback on the outcome of attendance.

### 4.3.5. Outcomes being measured and performance

It is unclear what outcomes, if any, are being evaluated across the various programmes in Suffolk.

### 4.3.6. Quality and impact of the current service

Similarly, there is limited data available regarding the quality or impact of the antenatal services being offered in Suffolk. However, West Suffolk Maternity Voices published the result of their recent audit into the parents perspective of antenatal education in June 2019. This captured the views of 124 parents who had had a baby in the last 12 months in West Suffolk. The key findings of this survey were that

* The strengths of the current ‘core’ antenatal class provision included courses that facilitate friendships between expectant parents
* The majority of antenatal education information is given verbally
* Demand for hypnobirthing within West Suffolk is high

## 4.4 Outcomes Based Evidence

The Department of Health Resource ‘**Preparation for Birth and Beyond’** published in 2011 made recommendations using the existing evidence base, but it also identified gaps in the evidence, highlighting the need for further high-quality research into antenatal education. This section focuses on the published evidence since ‘**Preparation for Birth and Beyond’**.

The Welsh Government’s ‘**Strategic Vision for Maternity Services in Wales’** (2011) identified that good antenatal education could help women and their partners to support each other during pregnancy and the postnatal period. It re-iterated some of the findings of ‘**Preparing for Birth and Beyond’**, specifically that antenatal education can improve self-esteem and confidence of participants and promote friendship and support within a local community. However, it also identified that improvements were needed

midwives are not adequately prepared for or supported in the delivery of antenatal education(9).

NHS Scotland also published guidance in 2011 aimed at reducing antenatal health inequalities. However, antenatal education did not feature in the guidance other than a commitment to develop a national syllabus, training and resources for antenatal education(2).

A systematic review originally published by Gagnon et al in 2007 which helped to inform the guidance in Preparation for Birth and Beyond was updated in 2011. This review considered the effects of antenatal education (individual, group or both) on a range of outcomes including knowledge acquisition, anxiety, sense of control, pain, labour and birth support, breastfeeding, infant-care abilities, and psychological and social adjustment.

The authors concluded that there was insufficient evidence to make any changes to existing recommendations on antenatal education. Whilst they too highlighted the need for further high quality research they also identified the difficulty in carrying out randomized control trials due to the popularity of antenatal education programmes and parental unwillingness to be randomized and potentially being allocated to a control group(10).

Since 2011, there has been some primary research published on antenatal education, and a number of systematic reviews. The literature review has been categorised by the outcomes which have been reported.

### 4.4.1 Transition to Parenthood Outcomes

Preparing for parenthood for the first time also known as the transition to parenthood is often a key focus of antenatal education, and in some settings antenatal education may be prioritised for or offered exclusively to first time parents. Additionally, there are often specialist antenatal education services provided to first time parents who are teenagers or very young adults which are outside the scope of this report.

A 2016 systematic review and meta synthesis of 14 qualitative studies by Enstieh and Hallstrom, considered the parental needs for antenatal education. This found that first-time expectant and new parents wanted antenatal education to actively include male partners. The provision of early and realistic information about parenting skills, and the opportunity to seek support and help from health professionals when needed, especially during the early postnatal period were also considered important aspects of antenatal education for this group (9).

A systematic review and meta synthesis of qualitative research focusing on the impact of new parenthood on the couple relationship was carried out by Delicate et al in 2018. It highlighted the findings of earlier research, which has shown that without interventions new parents are vulnerable to relationship strain and that attending antenatal classes can mitigate the decline in relationship satisfaction(11).

The review highlighted was the benefit of learning from peers and other new parents who attended ante natal education classes as guest speakers talking about their own experiences. Making parents aware, well in advance about the possible impact on their sexual relationship and the available coping strategies is also valued by first time parents(11).

Although this review concluded that health care professionals working with parents in the transition to parenthood, may be able to provide support through antenatal education that prepares them for relationship changes, and provision of postnatal support to identify and overcome problems, it also highlighted that these findings were based on a limited number of small studies of varying quality(11).

### 4.4.2 Mental Health Outcomes

Guidance published by NICE in 2006 recommended that pregnant women should not be offered antenatal education interventions to reduce perinatal or postnatal depression, as these interventions have not been shown to be effective(12).

A systematic review of interventions to promote mental health of children and parents was carried out in 2010. This included seven trials that involved at-risk populations and although it reported a significantly reduced risk of postnatal depression, it also found that one-to-one interventions were more effective than group based and importantly that there was no advantage to starting interventions in the antenatal period(13).

Similar to other reviews it also identified programmes which needed more research, including antenatal education focusing on the transition to parenthood and emotional and attachment issues and programmes to support parenting of fathers (13).

A further systematic review carried out by Brixval et al (2015) looked at antenatal education in relation to psychosocial outcomes including depression. It reported on three trials which compared a depression-preventive program in small classes with standard care. One examined the effect of a depression prevention antenatal program for women at risk of depression and found no significant effect on depression measured with several different measurement tools, self-efficacy, or locus of control. A further trial examined effects of a psycho-educational antenatal program among women at high risk of depression and reported no effect on depressive symptoms 6 weeks postnatally. The third. reported no effect of a psycho-educational antenatal program among women at high risk of depression - neither in pregnancy nor 6 weeks postnatally(4).

NICE Guidance on antenatal and postnatal mental health published in 2018 provides recommendations for identifying women at risk of mental health problems during pregnancy but this does not include interventions within the antenatal education setting(14).

### 4.4.3 High Risk Group Outcomes

It has been suggested that reaching and managing higher risk groups in the antenatal period will help strengthen NHS capacity to both promote healthier pregnancies and effectively manage the co morbidities which often lead to premature births and poorer maternal and infant health outcomes(2).

Improving access to, and the quality of antenatal healthcare, will strengthen NHS capacity to respond to the needs of women in high risk groups. It will strengthen its contribution to improving maternal and infant nutrition including breast feeding; promotion of smoking cessation, reduced alcohol use and the uptake of welfare support and income maximisation services(2).

A NICE Clinical Guideline entitled ‘Pregnancy and complex social factors: a model for service provision for pregnant women with complex social factors’ was published in 2010. Although women with other complex social factors are referenced in this guidance (specifically those who misuse drugs or alcohol, recent migrants, asylum seekers or refugees, or women who have difficulty in reading or speaking English and those experiencing domestic abuse) there are no specific recommendations about antenatal education for these groups.

Additionally, no recent literature has been identified to support specific interventions in antenatal education provision for these groups of women.

### 4.4.4 Obstetric Outcomes

A systematic review by Brixval et al in 2015 concluded that there was insufficient evidence to determine whether antenatal education in small classes has any effect on obstetric or psycho-social outcomes. They recommended that once emerging evidence from future well- conducted and well-reported trials is available help this may assist with making conclusions about the effectiveness of antenatal education in small classes(4).

The teaching of relaxation techniques and their effect on pain management during labour was the focus of systematic review by Levett et al (2018). They reviewed 15 studies involving 1731 women that contributed data to the analyses. Studies were undertaken across the world, including countries in Europe and Scandinavia, and Iran, Taiwan, Thailand, Turkey and USA. They found that while relaxation techniques, yoga and music may help women manage labour pain, the quality of the evidence varied between low and very low and there were variations in how the techniques were used. Overall there was no clear evidence that such therapies affected assisted vaginal or caesarean birth or influenced the baby’s condition at birth.

A systematic review by Chen et al (2018) found that childbirth training workshops for mothers alone significantly reduce caesarean section and increased spontaneous vaginal birth. Childbirth training workshops for couples were also effective but slightly less so(15). It also identified that nurse‐led applied relaxation training programmes, psychosocial couple‐based prevention programmes may reduce caesarean section while psychoeducation may increase spontaneous vaginal birth. However, the evidence for these three interventions on birthing method was of low certainty and there was insufficient data on the effect of the four interventions on maternal and neonatal mortality or morbidity.

A systematic review into the effect of antenatal education on perineal healing failed to identify any studies which met the inclusion criteria and so there is not robust evidence to suggest that antenatal education has any effect on perineal healing(16).

A 2012 systematic review of public health interventions offered during pregnancy included studies which focussed on educational programmes. Of the four studies included in the review, two were related to smoking cessation (and are outside the scope of this report). with the remaining two related to pelvic floor and perineal exercises. Both studies found that training and education in these areas had a significant reduction on urinary incontinence up to 12 months post-delivery(17).

## 4.5 Theoretical Models and Evaluation of Antenatal Education

There is very limited published research on theoretical models which best support the delivery and effectiveness of antenatal education. Gagnon et al (2004) identified that the limited evidence on antenatal education may be due to a range of factors including the methodological weakness of studies (e.g. small sample size) and limited theoretically based interventional approaches. In a later review Gagnon also highlighted differences in theoretical approaches, as well as significant variation in the provision of antenatal education, with the underlying aims often determining the way classes are delivered(10).

A recent mixed methods study carried out in Spain developed a consensus position on the needs, models and strategies for antenatal education provision and agreed that the main objectives of new programmes, should be to empower women to take their own decisions for

* improving their health and that of their family
* taking responsibility for choosing the type of birth they want and following it through
* using healthcare and non-healthcare resources to promote self-care and preserve and improve their health and that of their families.

A group of experts included in the study concluded that the integrative model proposed by Fishbein was the most suitable theoretical model for delivering antenatal education as it considers the intentions of individuals as a key determinant of behaviour (together with skills and resources)(18).

## 4.6 Cost Effectiveness of Antenatal Education Programmes

The DH resource pack ‘**Preparation for Birth and Beyond’** (2011) recommended that antenatal education delivered in community groups can be a beneficial and cost-effective way of supporting mothers and fathers from disadvantaged groups, and the return on investment with respect to reducing inequalities and improving outcomes for these mothers, fathers and their babies could be substantial(19). However, there is a lack of good evidence of the overall cost-effectiveness of antenatal education programmes in the published literature.

Whilst Brixval et al’s 2015 systematic review suggested that antenatal education in small classes may improve the resources of parents which could result in health care cost savings in the longer term it acknowledged that the initial expenses are also greater for small classes than for auditorium lectures. They recommended that due to the uncertainty in both the effectiveness and costs of small group antenatal education, future trials in this area should initially focus on comparisons with standard care (rather than comparing the relative effects of different educational programs)(20).

# 5. Conclusion

The evidence base for antenatal education has not changed significantly since the publication of national guidance in 2011. Much of the research in this time has focused on antenatal education provision for first time parents in the transition to parenthood.

There continues to be variation in both the availability of antenatal education and the characteristics of those who access it, with those from more deprived areas or from black and minority ethnic groups backgrounds being less likely to be offered and to take up antenatal education classes.

However, this variation is less marked when it comes to accessing online antenatal education resources and the overall use of such resources is increasing against a background of reducing numbers attending face to face provision.

The lack of robust evidence for suitable theoretical models for antenatal education provision or the cost effectiveness of specific interventions also makes it difficult to recommend an evidence-based model for service delivery.

## 5.1 Limitations

The main limitations of this evidence review relates to the lack of high-quality clinical trials in the field of antenatal education. A number of systematic reviews of have been carried out however the included studies have frequently been small in size and of poor quality. This has resulted in difficulties in drawing conclusions and identifying effective interventions. Additionally, there has been a lack of studies which focus on longer term outcomes related to family relationships or child development with the majority of studies focusing on the transition to parenting or obstetric outcomes, with relatively short duration of follow up.

# 6. Recommendations

The key recommendations for an antenatal education provision, which have been identified through this evidence review are that

1. The content of antenatal education should assist women to improve their health and that of their family, make decisions about birthing methods and use of healthcare and non-healthcare resources
2. The transition to parenthood is an important aspect of antenatal education and in addition to supporting new parents with parenting skills antenatal education should include the potential impact of having a baby on sexual relations and the potential for relationship strain
3. Parent bonding, care and nurturing understanding a baby’s cues and encouraging social support and making friends within the group may also be beneficial for new parents
4. Partners should also have access to and be included in antenatal education with content tailored to their needs
5. Interventions to address mental health issues should not be included in antenatal education but through appropriate pathways in antenatal care
6. Consideration should be given to alternative methods of delivering antenatal education such as online resources and use of apps, in addition to traditional face to face antenatal classes
7. While no specific interventions are recommended consideration needs to be given to methods of supporting and engaging with parents

* from minority ethnic groups including asylum seekers and refugees, gypsies and travellers
* who have alcohol and drug-abuse problems
* serious mental health problems
* who are in prison, during pregnancy and the immediate postnatal period

As there is significant variation in the design and delivery of antenatal education programmes, the outcomes will also be variable. When designing a model for delivering services consideration should be given to the aim and objectives of the service and an appropriate framework to evaluate the service against these aims and objectives should be included in the service design.

# Reference List

1. WHO. WHO Recommendations on Antenatal Care for a Positive Pregnancy Experience. Ultrasound in Obstetrics and Gynecology. 2013;41(1):102–13.

2. Scottish Government. Reducing antenatal health inequalities : outcome focused evidence into action guidance. Scottish Government. 2011;(January).

3. Maimburg RD, Væth M, Dürr J, Hvidman L, Olsen J. Randomised trial of structured antenatal training sessions to improve the birth process. BJOG: An International Journal of Obstetrics and Gynaecology. 2010;117(8):921–7.

4. Brixval CS, Axelsen SF, Lauemøller SG, Andersen SK, Due P, Koushede V. The effect of antenatal education in small classes on obstetric and psycho-social outcomes - a systematic review. Systematic Reviews. 2015;4(1):1–9.

5. Ip WY, Tang CSK, Goggins WB. An educational intervention to improve women’s ability to cope with childbirth. Journal of Clinical Nursing. 2009;18(15):2125–35.

6. Burscheidt L, Burscheidt L, Keep A, Service L, Library C, Search E, et al. Evidence Search Service Results of your search request The provision of antenatal education. 2019;1–15.

7. Royal College of Obstetricians and Gynaecologists. Standards for maternity care. 2008.

8. Redshaw M, Henderson. Safely delivered: a national survey of women’s experience of maternity care 2014. 2014.

9. Government W. A Strategic Vision for Maternity Services in Wales. 2011.

10. Gagnon A. J., Sandall J. Individual or group antenatal education for childbirth or parenthood, or both (Review). The Cochrane Collaboration. 2011;(3).

11. Delicate A, Ayers S, McMullen S. A systematic review and meta-synthesis of the impact of becoming parents on the couple relationship. Midwifery. 2018;61(October 2017):88–96.

12. National Institute for Health Care Excellence. Antenatal care for uncomplicated pregnancies NICE GUIDELINES. NICE Guidelines. 2008;1(March 2008):47.

13. Stewart-Brown S, Schrader McMillan A. PROMOTING THE MENTAL HEALTH OF CHILDREN AND PARENTS EVIDENCE OUTCOMES - Home and Community Based Parenting Support Programmes and Interventions. 2010.

14. NICE. Recommendations | Antenatal and postnatal mental health: clinical management and service guidance | Guidance | NICE [Internet]. National Institute for Health and Clinical Excellence. NICE; 2018 [cited 2019 May 17]. p. Available from: https://www.nice.org.uk/guidance/cg192/resources/antenatal-and-postnatal-mental-health-clinical-management-and-service-guidance-pdf-35109869806789

15. Chen I, Opiyo N, Tavender E, Mortazhejri S, Rader T, Petkovic J, et al. Non-clinical interventions for reducing unnecessary caesarean section ( Review ) SUMMARY OF FINDINGS FOR THE MAIN COMPARISON. Cochrane Database of Systematic Reviews. 2018;(9).

16. O’Kelly SM. Antenatal maternal education for improving postnatal perineal healing for women who have birthed in a hospital setting. Cochrane Database of Systematic Reviews. 2016;2016(6):22.

17. Mcneill J, Lynn F, Alderdice F. Public health interventions in midwifery: A systematic review of systematic reviews. BMC Public Health. 2012;12(1).

18. Artieta-Pinedo I, Paz-Pascual C, Grandes G, Espinosa M. Framework for the establishment of a feasible, tailored and effective perinatal education programme. BMC Pregnancy and Childbirth. 2017;17(1).

19. Department of Health. Preparation for birth and beyond. Department of Health. 2011;

20. Brixval CS, Thygesen LC, Axelsen SF, Gluud C, Winkel P, Lindschou J, et al. Effect of antenatal education in small classes versus standard auditorium-based lectures on use of pain relief during labour and of obstetric interventions: Results from the randomised NEWBORN trial. BMJ Open. 2016;6(6).