NICE National Institute for Health and Care Excellence

Antenatal care

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Contents

Introduction

This guidance partially updates and replaces antenatal care: routine care for healthy pregnant women NICE guideline CG6 (published October 2003).

Changes in this update

In this update, the recommendations on antenatal information, gestational age assessment, vitamin D supplementation, alcohol consumption, screening for haemoglobinopathies, screening for structural anomalies, screening for Down's syndrome, screening for chlamydia, gestational diabetes, pre-eclampsia, asymptomatic bacteriuria, placenta praevia, preterm birth, and fetal growth and well-being, as well as the schedule of antenatal appointments, have changed. In addition, some recommendations on smoking cessation have changed because NICE has produced public health guidance on smoking cessation (NICE guideline PH10). Following NICE protocol, we have incorporated the relevant recommendations verbatim into this guideline and have marked them clearly.

The new and updated recommendations are marked '**New**'.

The original antenatal care guideline was published by NICE in 2003. Since then several important pieces of evidence have become available, particularly concerning gestational diabetes, haemoglobinopathy and ultrasound, so that the update has been initiated earlier than planned. This early update has also provided an opportunity to look at a number of aspects of antenatal care, including:

- the development of a method of assessing pregnant women to identify those for whom additional care is necessary (the 'Antenatal assessment tool')
- giving information to pregnant women
- lifestyle considerations:
    - vitamin D supplementation
    - alcohol consumption
- screening for the baby:
    - use of ultrasound to assess gestational age and screen for fetal abnormalities
    - methods of assessing normal fetal growth

  - haemoglobinopathy screening
- screening for the pregnant woman:
  - gestational diabetes
  - pre-eclampsia and preterm labour
  - placenta praevia
  - asymptomatic bacteriuria
- chlamydia.

Aim

The ethos of this guideline is that pregnancy is a normal physiological process and that, as such, any interventions offered should have known benefits and be acceptable to pregnant women. The guideline has been developed with the following aims: to offer information on best practice for baseline clinical care of all pregnancies and comprehensive information on the antenatal care of the healthy woman with an uncomplicated singleton pregnancy. It provides evidence-based information for use by clinicians and pregnant women to make decisions about appropriate treatment in specific circumstances.

The guideline will complement the Children's national service framework (England and Wales) (2004), which provides standards for service configuration, with emphasis on how care is delivered and by whom, including issues of ensuring equity of access to care for disadvantaged women and women's views about service provision. The guideline has also drawn on the evidence-based recommendations of the UK National Screening Committee.

The 'Changing childbirth' report (Department of Health 1993) and 'Maternity matters' (Department of Health 2007) explicitly confirmed that women should be the focus of maternity care, with an emphasis on providing choice, easy access and continuity of care. Care during pregnancy should enable a woman to make informed decisions, based on her needs, having discussed matters fully with the healthcare professionals involved.

Woman-centred care

This guideline offers best practice advice on the care of healthy pregnant women.

Women, their partners and their families should always be treated with kindness, respect and dignity. The views, beliefs and values of the woman, her partner and her family in relation to her care and that of her baby should be sought and respected at all times.

Women should have the opportunity to make informed decisions about their care and treatment, in partnership with their healthcare professionals. If women do not have the capacity to make decisions, healthcare professionals should follow the Department of Health's advice on consent and the code of practice that accompanies the Mental Capacity Act. In Wales, healthcare professionals should follow advice on consent from the Welsh Government.

Good communication between healthcare professionals and women is essential. It should be supported by evidence-based, written information tailored to the woman's needs. Care and information should be culturally appropriate. All information should also be accessible to women with additional needs such as physical, sensory or learning disabilities, and to women who do not speak or read English.

Every opportunity should be taken to provide the woman and her partner or other relevant family members with the information and support they need.

Key priorities for implementation

Antenatal information

- **New** Pregnant women should be offered information based on the current available evidence together with support to enable them to make informed decisions about their care. This information should include where they will be seen and who will undertake their care.

Lifestyle considerations

- **New** All women should be informed at the booking appointment about the importance for their own and their baby's health of maintaining adequate vitamin D stores during pregnancy and whilst breastfeeding. In order to achieve this, women should be advised to take a vitamin D supplement (10 micrograms of vitamin D per day), as found in the Healthy Start multivitamin supplement. Women who are not eligible for the Healthy Start benefit should be advised where they can buy the supplement. Particular care should be taken to enquire as to whether women at greatest risk are following advice to take this daily supplement. These include:
    - women with darker skin (such as those of African, African–Caribbean or South Asian family origin).
    - women who have limited exposure to sunlight, such as women who are housebound or confined indoors for long periods, or who cover their skin for cultural reasons.

    (See also NICE's guideline on vitamin D: increasing supplement use among at-risk groups.)

Screening for haematological conditions

- **New** Screening for sickle cell diseases and thalassaemias should be offered to all women as early as possible in pregnancy (ideally by 10 weeks). The type of screening depends upon the prevalence and can be carried out in either primary or secondary care.

Screening for fetal anomalies

- **New** Participation in regional congenital anomaly registers and/or UK National Screening Committee-approved audit systems is strongly recommended to facilitate the audit of detection rates.
- **New** The 'combined test' (nuchal translucency, beta-human chorionic gonadotrophin, pregnancy-associated plasma protein-A) should be offered to screen for Down's syndrome between 11 weeks 0 days and 13 weeks 6 days. For women who book later in pregnancy the most clinically and cost-effective serum screening test (triple or quadruple test) should be offered between 15 weeks 0 days and 20 weeks 0 days.

Screening for clinical conditions

- **New** Screening for gestational diabetes using risk factors is recommended in a healthy population. At the booking appointment, the following risk factors for gestational diabetes should be determined:
  - body mass index above 30 kg/m^2
  - previous macrosomic baby weighing 4.5 kg or above
  - previous gestational diabetes (refer to diabetes in pregnancy NICE guideline CG63)
  - family history of diabetes (first-degree relative with diabetes)
  - family origin with a high prevalence of diabetes:
    - South Asian (specifically women whose country of family origin is India, Pakistan or Bangladesh)
    - black Caribbean
    - Middle Eastern (specifically women whose country of family origin is Saudi Arabia, United Arab Emirates, Iraq, Jordan, Syria, Oman, Qatar, Kuwait, Lebanon or Egypt).

    Women with any one of these risk factors should be offered testing for gestational diabetes (refer to diabetes in pregnancy NICE guideline CG63).

1 Guidance

The following guidance is based on the best available evidence. The full guideline gives details of the methods and the evidence used to develop the guidance (see section 5 for details).

The new and updated recommendations are marked '**New**'.

1.1 Woman-centred care and informed decision-making

The principles outlined in this section apply to all aspects of the Antenatal care guideline.

1.1.1 Antenatal information

1.1.1.1 **New** Antenatal information should be given to pregnant women according to the following schedule.

- At the first contact with a healthcare professional:
  - folic acid supplementation
  - food hygiene, including how to reduce the risk of a food-acquired infection
  - lifestyle advice, including smoking cessation, and the implications of recreational drug use and alcohol consumption in pregnancy
  - all antenatal screening, including screening for haemoglobinopathies, the anomaly scan and screening for Down's syndrome, as well as risks and benefits of the screening tests.
- At booking (ideally by 10 weeks):
  - how the baby develops during pregnancy
  - nutrition and diet, including vitamin D supplementation for women at risk of vitamin D deficiency, and details of the Healthy Start programme
  - exercise, including pelvic floor exercises
  - place of birth (refer to intrapartum care NICE guideline CG55)

- pregnancy care pathway
- breastfeeding, including workshops
- participant-led antenatal classes
- further discussion of all antenatal screening
- discussion of mental health issues (refer to antenatal and postnatal mental health NICE guideline CG45)

- Before or at 36 weeks:
  - breastfeeding information, including technique and good management practices that would help a woman succeed, such as detailed in the UNICEF Baby Friendly Initiative
  - preparation for labour and birth, including information about coping with pain in labour and the birth plan
  - recognition of active labour
  - care of the new baby
  - vitamin K prophylaxis
  - newborn screening tests
  - postnatal self-care
  - awareness of 'baby blues' and postnatal depression.
- At 38 weeks:
  - options for management of prolonged pregnancy.

    This can be supported by information such as 'The pregnancy book' (Department of Health 2007) and the use of other relevant resources such as UK National Screening Committee publications and the Midwives Information and Resource Service (MIDIRS) information leaflets.

1.1.1.2 **New** Information should be given in a form that is easy to understand and accessible to pregnant women with additional needs, such as physical, sensory or learning disabilities, and to pregnant women who do not speak or read English.

1.1.1.3 **New** Information can also be given in other forms such as audiovisual or touch-screen technology; this should be supported by written information.

1.1.1.4 **New** Pregnant women should be offered information based on the current available evidence together with support to enable them to make informed decisions about their care. This information should include where they will be seen and who will undertake their care.

1.1.1.5 **New** At each antenatal appointment, healthcare professionals should offer consistent information and clear explanations, and should provide pregnant women with an opportunity to discuss issues and ask questions.

1.1.1.6 **New** Pregnant women should be offered opportunities to attend participant-led antenatal classes, including breastfeeding workshops**.**

1.1.1.7 **New** Women's decisions should be respected, even when this is contrary to the views of the healthcare professional.

1.1.1.8 **New** Pregnant women should be informed about the purpose of any test before it is performed. The healthcare professional should ensure the woman has understood this information and has sufficient time to make an informed decision. The right of a woman to accept or decline a test should be made clear.

1.1.1.9 **New** Information about antenatal screening should be provided in a setting where discussion can take place; this may be in a group setting or on a one-to-one basis. This should be done before the booking appointment.

1.1.1.10 **New** Information about antenatal screening should include balanced and accurate information about the condition being screened for.

1.2 Provision and organisation of care

1.2.1 Who provides care?

1.2.1.1 Midwife- and GP-led models of care should be offered to women with an uncomplicated pregnancy. Routine involvement of obstetricians in the care of women with an uncomplicated pregnancy at scheduled times does not appear to improve perinatal outcomes compared with involving obstetricians when complications arise.

1.2.2 Continuity of care

1.2.2.1 Antenatal care should be provided by a small group of healthcare professionals with whom the woman feels comfortable. There should be continuity of care throughout the antenatal period.

1.2.2.2 A system of clear referral paths should be established so that pregnant women who require additional care are managed and treated by the appropriate specialist teams when problems are identified.

1.2.3 Where should antenatal appointments take place?

1.2.3.1 Antenatal care should be readily and easily accessible to all pregnant women and should be sensitive to the needs of individual women and the local community.

1.2.3.2 The environment in which antenatal appointments take place should enable women to discuss sensitive issues such as domestic violence, sexual abuse, psychiatric illness and recreational drug use.

1.2.4 Documentation of care

1.2.4.1 Structured maternity records should be used for antenatal care.

1.2.4.2 Maternity services should have a system in place whereby women carry their own case notes.

1.2.4.3 A standardised, national maternity record with an agreed minimum data set should be developed and used. This will help healthcare professionals to provide the recommended evidence-based care to pregnant women.

1.2.5 Frequency of antenatal appointments

1.2.5.1 A schedule of antenatal appointments should be determined by the function of the appointments. For a woman who is nulliparous with an uncomplicated pregnancy, a schedule of 10 appointments should be adequate. For a woman who is parous with an uncomplicated pregnancy, a schedule of 7 appointments should be adequate.

1.2.5.2 Early in pregnancy, all women should receive appropriate written information about the likely number, timing and content of antenatal appointments associated with different options of care and be given an opportunity to discuss this schedule with their midwife or doctor.

1.2.5.3 Each antenatal appointment should be structured and have focused content. Longer appointments are needed early in pregnancy to allow comprehensive assessment and discussion. Wherever possible, appointments should incorporate routine tests and investigations to minimise inconvenience to women.

1.2.6 Gestational age assessment

1.2.6.1 **New** Pregnant women should be offered an early ultrasound scan between 10 weeks 0 days and 13 weeks 6 days to determine gestational age and to detect multiple pregnancies. This will ensure consistency of gestational age assessment and reduce the incidence of induction of labour for prolonged pregnancy.

1.2.6.2 **New** Crown–rump length measurement should be used to determine gestational age. If the crown–rump length is above 84 mm, the gestational age should be estimated using head circumference.

1.3 Lifestyle considerations

1.3.1 Working during pregnancy

1.3.1.1 Pregnant women should be informed of their maternity rights and benefits.

1.3.1.2 The majority of women can be reassured that it is safe to continue working during pregnancy. Further information about possible occupational hazards during pregnancy is available from the Health and Safety Executive.

1.3.1.3 A woman's occupation during pregnancy should be ascertained to identify those who are at increased risk through occupational exposure.

1.3.2 Nutritional supplements

1.3.2.1 Pregnant women (and those intending to become pregnant) should be informed that dietary supplementation with folic acid, before conception and throughout the first 12 weeks, reduces the risk of having a baby with a neural tube defect (for example, anencephaly or spina bifida). The recommended dose is 400 micrograms per day.

1.3.2.2 Iron supplementation should not be offered routinely to all pregnant women. It does not benefit the mother's or the baby's health and may have unpleasant maternal side effects.

1.3.2.3 Pregnant women should be informed that vitamin A supplementation (intake above 700 micrograms) might be teratogenic and should therefore be avoided. Pregnant women should be informed that liver and liver products may also contain high levels of vitamin A, and therefore consumption of these products should also be avoided.

1.3.2.4 **New** All women should be informed at the booking appointment about the importance for their own and their baby's health of maintaining adequate vitamin D stores during pregnancy and whilst breastfeeding. In order to achieve this, women should be advised to take a vitamin D supplement (10 micrograms of vitamin D per day), as found in the Healthy Start multivitamin supplement. Women who are not eligible for the Healthy Start

benefit should be advised where they can buy the supplement. Particular care should be taken to enquire as to whether women at greatest risk are following advice to take this daily supplement. These include:

- women with darker skin (such as those of African, African–Caribbean or South Asian family origin
- women who have limited exposure to sunlight, such as women who are housebound or confined indoors for long periods, or who cover their skin for cultural reasons.

(See also NICE's guideline on vitamin D: increasing supplement use among at-risk groups.)

1.3.3 Food-acquired infections

1.3.3.1 Pregnant women should be offered information on how to reduce the risk of listeriosis by:

- drinking only pasteurised or UHT milk
- not eating ripened soft cheese such as Camembert, Brie and blue-veined cheese (there is no risk with hard cheeses, such as Cheddar, or cottage cheese and processed cheese)
- not eating pâté (of any sort, including vegetable)
- not eating uncooked or undercooked ready-prepared meals.

1.3.3.2 Pregnant women should be offered information on how to reduce the risk of salmonella infection by:

- avoiding raw or partially cooked eggs or food that may contain them (such as mayonnaise)
- avoiding raw or partially cooked meat, especially poultry.

1.3.4 Prescribed medicines

1.3.4.1 Few medicines have been established as safe to use in pregnancy. Prescription medicines should be used as little as possible during pregnancy and should be limited to circumstances in which the benefit outweighs the risk.

1.3.5 Over-the-counter medicines

1.3.5.1 Pregnant women should be informed that few over-the-counter medicines have been established as being safe to take in pregnancy. Over-the-counter medicines should be used as little as possible during pregnancy.

1.3.6 Complementary therapies

1.3.6.1 Pregnant women should be informed that few complementary therapies have been established as being safe and effective during pregnancy. Women should not assume that such therapies are safe and they should be used as little as possible during pregnancy.

1.3.7 Exercise in pregnancy

1.3.7.1 Pregnant women should be informed that beginning or continuing a moderate course of exercise during pregnancy is not associated with adverse outcomes.

1.3.7.2 Pregnant women should be informed of the potential dangers of certain activities during pregnancy, for example, contact sports, high-impact sports and vigorous racquet sports that may involve the risk of abdominal trauma, falls or excessive joint stress, and scuba diving, which may result in fetal birth defects and fetal decompression disease.

1.3.8 Sexual intercourse in pregnancy

1.3.8.1 Pregnant woman should be informed that sexual intercourse in pregnancy is not known to be associated with any adverse outcomes.

1.3.9 Alcohol consumption in pregnancy

1.3.9.1 **New** Pregnant women and women planning a pregnancy should be advised to avoid drinking alcohol in the first 3 months of pregnancy if possible because it may be associated with an increased risk of miscarriage.

1.3.9.2 **New** If women choose to drink alcohol during pregnancy they should be advised to drink no more than 1 to 2 UK units once or twice a week (1 unit equals half a pint of ordinary strength lager or beer, or one shot [25 ml] of spirits. One small [125 ml] glass of wine is equal to 1.5 UK units). Although there is uncertainty regarding a safe level of alcohol consumption in pregnancy, at this low level there is no evidence of harm to the unborn baby.

1.3.9.3 **New** Women should be informed that getting drunk or binge drinking during pregnancy (defined as more than 5 standard drinks or 7.5 UK units on a single occasion) may be harmful to the unborn baby.

1.3.10 Smoking in pregnancy[1]

1.3.10.1 **New** At the first contact with the woman, discuss her smoking status, provide information about the risks of smoking to the unborn child and the hazards of exposure to secondhand smoke. Address any concerns she and her partner or family may have about stopping smoking. **[NICE PH 2008]**

1.3.10.2 Pregnant women should be informed about the specific risks of smoking during pregnancy (such as the risk of having a baby with low birthweight and preterm birth). The benefits of quitting at any stage should be emphasised.

1.3.10.3 **New** Offer personalised information, advice and support on how to stop smoking. Encourage pregnant women to use local NHS Stop Smoking Services and the NHS pregnancy smoking helpline, by providing details on when, where and how to access them. Consider visiting pregnant women at home if it is difficult for them to attend specialist services. **[NICE PH 2008]**

1.3.10.4 **New** Monitor smoking status and offer smoking cessation advice, encouragement and support throughout the pregnancy and beyond. **[NICE PH 2008]**

1.3.10.5 **New** Discuss the risks and benefits of nicotine replacement therapy (NRT) with pregnant women who smoke, particularly those who do not wish to accept the offer of help from the NHS Stop Smoking Service. If a woman expresses a clear wish to receive NRT, use professional judgement when deciding whether to offer a prescription. **[NICE PH 2008]**

1.3.10.6 **New** Advise women using nicotine patches to remove them before going to bed. **[NICE PH 2008]**

This supersedes NICE technology appraisal guidance 39 on NRT and bupropion. **[NICE PH 2008]**

1.3.10.7 **This recommendation has been withdrawn. See** how to stop smoking in pregnancy and after childbirth **NICE guideline PH26**

1.3.11 Cannabis use in pregnancy

1.3.11.1 The direct effects of cannabis on the fetus are uncertain but may be harmful. Cannabis use is associated with smoking, which is known to be harmful; therefore women should be discouraged from using cannabis during pregnancy.

1.3.12 Air travel during pregnancy

1.3.12.1 Pregnant women should be informed that long-haul air travel is associated with an increased risk of venous thrombosis, although whether or not there is additional risk during pregnancy is unclear. In the general population, wearing correctly fitted compression stockings is effective at reducing the risk.

1.3.13 Car travel during pregnancy

1.3.13.1 Pregnant women should be informed about the correct use of seatbelts (that is, three-point seatbelts 'above and below the bump, not over it').

1.3.14 Travelling abroad during pregnancy

1.3.14.1 Pregnant women should be informed that, if they are planning to travel abroad, they should discuss considerations such as flying, vaccinations and travel insurance with their midwife or doctor.

1.4 Management of common symptoms of pregnancy

1.4.1 Nausea and vomiting in early pregnancy

1.4.1.1 Women should be informed that most cases of nausea and vomiting in pregnancy will resolve spontaneously within 16 to 20 weeks and that nausea and vomiting are not usually associated with a poor pregnancy outcome. If a woman requests or would like to consider treatment, the following interventions appear to be effective in reducing symptoms:

- non-pharmacological:
  - ginger
  - P6 (wrist) acupressure
- pharmacological:
  - antihistamines.

1.4.1.2 Information about all forms of self-help and non-pharmacological treatments should be made available for pregnant women who have nausea and vomiting.

1.4.2 Heartburn

1.4.2.1 Women who present with symptoms of heartburn in pregnancy should be offered information regarding lifestyle and diet modification.

1.4.2.2 Antacids may be offered to women whose heartburn remains troublesome despite lifestyle and diet modification.

1.4.3 Constipation

1.4.3.1 Women who present with constipation in pregnancy should be offered information regarding diet modification, such as bran or wheat fibre supplementation.

1.4.4 Haemorrhoids

1.4.4.1 In the absence of evidence of the effectiveness of treatments for haemorrhoids in pregnancy, women should be offered information concerning diet modification. If clinical symptoms remain troublesome, standard haemorrhoid creams should be considered.

1.4.5 Varicose veins

1.4.5.1 Women should be informed that varicose veins are a common symptom of pregnancy that will not cause harm and that compression stockings can improve the symptoms but will not prevent varicose veins from emerging.

1.4.6 Vaginal discharge

1.4.6.1 Women should be informed that an increase in vaginal discharge is a common physiological change that occurs during pregnancy. If it is associated with itch, soreness, offensive smell or pain on passing urine there may be an infective cause and investigation should be considered.

1.4.6.2 A 1-week course of a topical imidazole is an effective treatment and should be considered for vaginal candidiasis infections in pregnant women.

1.4.6.3 The effectiveness and safety of oral treatments for vaginal candidiasis in pregnancy are uncertain and these treatments should not be offered.

1.4.7 Backache

1.4.7.1 Women should be informed that exercising in water, massage therapy and group or individual back care classes might help to ease backache during pregnancy.

1.5 Clinical examination of pregnant women

1.5.1 Measurement of weight and body mass index

1.5.1.1 Maternal weight and height should be measured at the booking appointment, and the woman's body mass index should be calculated (weight [kg]/height[m]^2).

1.5.1.2 Repeated weighing during pregnancy should be confined to circumstances in which clinical management is likely to be influenced.

1.5.2 Breast examination

1.5.2.1 Routine breast examination during antenatal care is not recommended for the promotion of postnatal breastfeeding.

1.5.3 Pelvic examination

1.5.3.1 Routine antenatal pelvic examination does not accurately assess gestational age, nor does it accurately predict preterm birth or cephalopelvic disproportion. It is not recommended.

1.5.4 Female genital mutilation

1.5.4.1 Pregnant women who have had female genital mutilation should be identified early in antenatal care through sensitive enquiry. Antenatal examination will then allow planning of intrapartum care.

1.5.5 Domestic violence

1.5.5.1 Healthcare professionals need to be alert to the symptoms or signs of domestic violence and women should be given the opportunity to disclose domestic violence in an environment in which they feel secure.

1.5.6 Prediction, detection and initial management of mental disorders

1.5.6.1 This recommendation has been replaced by recommendation 1.5.2 in the NICE guideline on antenatal and postnatal mental health.

1.5.6.2 This recommendation has been replaced by recommendation 1.5.9 in the NICE guideline on antenatal and postnatal mental health.

1.5.6.3 This recommendation has been replaced by recommendation 1.5.4 in the NICE guideline on antenatal and postnatal mental health.

1.5.6.4 This recommendation has been replaced by recommendations 1.5.5, 1.5.6, 1.5.7 and 1.5.10 in the NICE guideline on antenatal and postnatal mental health.

1.6 Screening for haematological conditions

1.6.1 Anaemia

1.6.1.1 Pregnant women should be offered screening for anaemia. Screening should take place early in pregnancy (at the booking appointment) and at 28 weeks when other blood screening tests are being performed. This allows enough time for treatment if anaemia is detected.

1.6.1.2 Haemoglobin levels outside the normal UK range for pregnancy (that is, 11 g/100 ml at first contact and 10.5 g/100 ml at 28 weeks) should be investigated and iron supplementation considered if indicated.

1.6.2 Blood grouping and red-cell alloantibodies

1.6.2.1 Women should be offered testing for blood group and rhesus D status in early pregnancy.

1.6.2.2 It is recommended that routine antenatal anti-D prophylaxis is offered to all non-sensitised pregnant women who are rhesus D-negative.

1.6.2.3 Women should be screened for atypical red-cell alloantibodies in early pregnancy and again at 28 weeks, regardless of their rhesus D status.

1.6.2.4 Pregnant women with clinically significant atypical red-cell alloantibodies should be offered referral to a specialist centre for further investigation and advice on subsequent antenatal management.

1.6.2.5 If a pregnant woman is rhesus D-negative, consideration should be given to offering partner testing to determine whether the administration of anti-D prophylaxis is necessary.

1.6.3 Screening for haemoglobinopathies

1.6.3.1 **New** Pre-conception counselling (supportive listening, advice-giving and information) and carrier testing should be available to all women who are identified as being at higher risk of haemoglobinopathies, using the Family Origin Questionnaire from the NHS Antenatal and Newborn Screening Programme.

1.6.3.2 **New** Information about screening for sickle cell diseases and thalassaemias, including carrier status and the implications of these, should be given to pregnant women at the first contact with a healthcare professional. Refer to 1.1.1 for more information about giving antenatal information.

1.6.3.3 **New** Screening for sickle cell diseases and thalassaemias should be offered to all women as early as possible in pregnancy (ideally by 10 weeks). The type of screening depends upon the prevalence and can be carried out in either primary or secondary care.

1.6.3.4 **New** Where prevalence of sickle cell disease is high (fetal prevalence above 1.5 cases per 10,000 pregnancies), laboratory screening (preferably high-performance liquid chromatography) should be offered to all pregnant women to identify carriers of sickle cell disease and/or thalassaemia.

1.6.3.5 **New** Where prevalence of sickle cell disease is low (fetal prevalence 1.5 cases per 10,000 pregnancies or below), all pregnant women should be offered screening for haemoglobinopathies using the Family Origin Questionnaire.

- If the Family Origin Questionnaire indicates a high risk of sickle cell disorders, laboratory screening (preferably high-performance liquid chromatography) should be offered.

- If the mean corpuscular haemoglobin is below 27 picograms, laboratory screening (preferably high-performance liquid chromatography) should be offered.

1.6.3.6 **New** If the woman is identified as a carrier of a clinically significant haemoglobinopathy then the father of the baby should be offered counselling and appropriate screening without delay.

For more details about haemoglobinopathy variants refer to the NHS Antenatal and Newborn Screening Programme.

1.7 Screening for fetal anomalies

1.7.1 Screening for structural anomalies

1.7.1.1 **New** Ultrasound screening for fetal anomalies should be routinely offered, normally between 18 weeks 0 days and 20 weeks 6 days.

1.7.1.2 **New** At the first contact with a healthcare professional, women should be given information about the purpose and implications of the anomaly scan to enable them to make an informed choice as to whether or not to have the scan. The purpose of the scan is to identify fetal anomalies and allow:

- reproductive choice (termination of pregnancy)
- parents to prepare (for any treatment/disability/palliative care/termination of pregnancy)
- managed birth in a specialist centre
- intrauterine therapy.

1.7.1.3 **New** Women should be informed of the limitations of routine ultrasound screening and that detection rates vary by the type of fetal anomaly, the woman's body mass index and the position of the unborn baby at the time of the scan.

1.7.1.4 **New** If an anomaly is detected during the anomaly scan pregnant women should be informed of the findings to enable them to make an informed choice

as to whether they wish to continue with the pregnancy or have a termination of pregnancy.

1.7.1.5 **New** Fetal echocardiography involving the four-chamber view of the fetal heart and outflow tracts is recommended as part of the routine anomaly scan.

1.7.1.6 **New** Routine screening for cardiac anomalies using nuchal translucency is not recommended.

1.7.1.7 **New** When routine ultrasound screening is performed to detect neural tube defects, alpha-fetoprotein testing is not required.

1.7.1.8 **New** Participation in regional congenital anomaly registers and/or UK National Screening Committee-approved audit systems is strongly recommended to facilitate the audit of detection rates.

1.7.2 Screening for Down's syndrome

1.7.2.1 **New** All pregnant women should be offered screening for Down's syndrome. Women should understand that it is their choice to embark on screening for Down's syndrome.

1.7.2.2 **New** Screening for Down's syndrome should be performed by the end of the first trimester (13 weeks 6 days), but provision should be made to allow later screening (which could be as late as 20 weeks 0 days) for women booking later in pregnancy.

1.7.2.3 **New** The 'combined test' (nuchal translucency, beta-human chorionic gonadotrophin, pregnancy-associated plasma protein-A) should be offered to screen for Down's syndrome between 11 weeks 0 days and 13 weeks 6 days. For women who book later in pregnancy the most clinically and cost-effective serum screening test (triple or quadruple test) should be offered between 15 weeks 0 days and 20 weeks 0 days.

1.7.2.4 **New** When it is not possible to measure nuchal translucency, owing to fetal position or raised body mass index, women should be offered serum screening (triple or quadruple test) between 15 weeks 0 days and 20 weeks 0 days.

1.7.2.5 **New** Information about screening for Down's syndrome should be given to pregnant women at the first contact with a healthcare professional. This will provide the opportunity for further discussion before embarking on screening. Refer to 1.1.1 for more information about giving antenatal information. Specific information should include:

- the screening pathway for both screen-positive and screen-negative results
- the decisions that need to be made at each point along the pathway and their consequences
- the fact that screening does not provide a definitive diagnosis and a full explanation of the risk score obtained following testing
- information about chorionic villus sampling and amniocentesis
- balanced and accurate information about Down's syndrome.

1.7.2.6 **New** If a pregnant woman receives a screen-positive result for Down's syndrome, she should have rapid access to appropriate counselling by trained staff.

1.7.2.7 **New** The routine anomaly scan (at 18 weeks 0 days to 20 weeks 6 days) should not be routinely used for Down's syndrome screening using soft markers.

1.7.2.8 **New** The presence of an isolated soft marker, with the exception of increased nuchal fold, on the routine anomaly scan, should not be used to adjust the a priori risk for Down's syndrome.

1.7.2.9 **New** The presence of an increased nuchal fold (6 millimetres or above) or two or more soft markers on the routine anomaly scan should prompt the offer of a referral to a fetal medicine specialist or an appropriate healthcare professional with a special interest in fetal medicine.

1.8 Screening for infections

1.8.1 Asymptomatic bacteriuria

1.8.1.1 **New** Women should be offered routine screening for asymptomatic bacteriuria by midstream urine culture early in pregnancy. Identification and treatment of asymptomatic bacteriuria reduces the risk of pyelonephritis.

1.8.2 Asymptomatic bacterial vaginosis

1.8.2.1 Pregnant women should not be offered routine screening for bacterial vaginosis because the evidence suggests that the identification and treatment of asymptomatic bacterial vaginosis does not lower the risk of preterm birth and other adverse reproductive outcomes.

1.8.3 Chlamydia trachomatis

1.8.3.1 **New** At the booking appointment, healthcare professionals should inform pregnant women younger than 25 years about the high prevalence of chlamydia infection in their age group, and give details of their local National Chlamydia Screening Programme.

1.8.3.2 **New** Chlamydia screening should not be offered as part of routine antenatal care.

1.8.4 Cytomegalovirus

1.8.4.1 The available evidence does not support routine cytomegalovirus screening in pregnant women and it should not be offered.

1.8.5 Hepatitis B virus

1.8.5.1 Serological screening for hepatitis B virus should be offered to pregnant women so that effective postnatal interventions can be offered to infected women to decrease the risk of mother-to-child transmission.

1.8.6 Hepatitis C virus

1.8.6.1 Pregnant women should not be offered routine screening for hepatitis C virus because there is insufficient evidence to support its clinical and cost effectiveness.

1.8.7 HIV

1.8.7.1 Pregnant women should be offered screening for HIV infection early in antenatal care because appropriate antenatal interventions can reduce mother-to-child transmission of HIV infection.

1.8.7.2 A system of clear referral paths should be established in each unit or department so that pregnant women who are diagnosed with an HIV infection are managed and treated by the appropriate specialist teams.

1.8.8 Rubella

1.8.8.1 Rubella susceptibility screening should be offered early in antenatal care to identify women at risk of contracting rubella infection and to enable vaccination in the postnatal period for the protection of future pregnancies.

1.8.9 Group B streptococcus

1.8.9.1 Pregnant women should not be offered routine antenatal screening for group B streptococcus because evidence of its clinical and cost effectiveness remains uncertain.

1.8.10 Syphilis

1.8.10.1 Screening for syphilis should be offered to all pregnant women at an early stage in antenatal care because treatment of syphilis is beneficial to the mother and baby.

1.8.10.2 Because syphilis is a rare condition in the UK and a positive result does not necessarily mean that a woman has syphilis, clear paths of referral for the management of pregnant women testing positive for syphilis should be established.

1.8.11 Toxoplasmosis

1.8.11.1 Routine antenatal serological screening for toxoplasmosis should not be offered because the risks of screening may outweigh the potential benefits.

1.8.11.2 Pregnant women should be informed of primary prevention measures to avoid toxoplasmosis infection, such as:

- washing hands before handling food
- thoroughly washing all fruit and vegetables, including ready-prepared salads, before eating
- thoroughly cooking raw meats and ready-prepared chilled meals
- wearing gloves and thoroughly washing hands after handling soil and gardening
- avoiding cat faeces in cat litter or in soil.

1.9 Screening for clinical conditions

1.9.1 Gestational diabetes

1.9.1.1 **New** Screening for gestational diabetes using risk factors is recommended in a healthy population. At the booking appointment, the following risk factors for gestational diabetes should be determined:

- body mass index above 30 kg/m^2
- previous macrosomic baby weighing 4.5 kg or above
- previous gestational diabetes (refer to diabetes in pregnancy NICE guideline CG63)
- family history of diabetes (first-degree relative with diabetes)
- family origin with a high prevalence of diabetes:
  - South Asian (specifically women whose country of family origin is India, Pakistan or Bangladesh)

- black Caribbean

- Middle Eastern (specifically women whose country of family origin is Saudi Arabia, United Arab Emirates, Iraq, Jordan, Syria, Oman, Qatar, Kuwait, Lebanon or Egypt).

Women with any one of these risk factors should be offered testing for gestational diabetes (refer to Diabetes in pregnancy NICE guideline CG63).

1.9.1.2 **New** In order to make an informed decision about screening and testing for gestational diabetes, women should be informed that:

- in most women, gestational diabetes will respond to changes in diet and exercise
- some women (between 10% and 20%) will need oral hypoglycaemic agents or insulin therapy if diet and exercise are not effective in controlling gestational diabetes
- if gestational diabetes is not detected and controlled there is a small risk of birth complications such as shoulder dystocia
- a diagnosis of gestational diabetes may lead to increased monitoring and interventions during both pregnancy and labour.

1.9.1.3 **New** Screening for gestational diabetes using fasting plasma glucose, random blood glucose, glucose challenge test and urinalysis for glucose should not be undertaken.

1.9.2 Pre-eclampsia

1.9.2.1 **New** Blood pressure measurement and urinalysis for protein should be carried out at each antenatal visit to screen for pre-eclampsia.

1.9.2.2 **New** At the booking appointment, the following risk factors for pre-eclampsia should be determined:

- age 40 years or older
- nulliparity

- pregnancy interval of more than 10 years
- family history of pre-eclampsia
- previous history of pre-eclampsia
- body mass index 30 kg/m^2 or above
- pre-existing vascular disease such as hypertension
- pre-existing renal disease
- multiple pregnancy.

More frequent blood pressure measurements should be considered for pregnant women who have any of the above risk factors.

1.9.2.3 **New** The presence of significant hypertension and/or proteinuria should alert the healthcare professional to the need for increased surveillance.

1.9.2.4 **New** Blood pressure should be measured as outlined below:

- remove tight clothing, ensure arm is relaxed and supported at heart level
- use cuff of appropriate size
- inflate cuff to 20–30 mmHg above palpated systolic blood pressure
- lower column slowly, by 2 mmHg per second or per beat
- read blood pressure to the nearest 2 mmHg
- measure diastolic blood pressure as disappearance of sounds (phase V).

1.9.2.5 **New** Hypertension in which there is a single diastolic blood pressure of 110 mmHg or two consecutive readings of 90 mmHg at least 4 hours apart and/or significant proteinuria (1+) should prompt increased surveillance.

1.9.2.6 **New** If the systolic blood pressure is above 160 mmHg on two consecutive readings at least 4 hours apart, treatment should be considered.

1.9.2.7 **New** All pregnant women should be made aware of the need to seek immediate advice from a healthcare professional if they experience symptoms of pre-eclampsia. Symptoms include:

- severe headache
- problems with vision, such as blurring or flashing before the eyes
- severe pain just below the ribs
- vomiting
- sudden swelling of the face, hands or feet.

1.9.2.8 **New** Although there is a great deal of material published on alternative screening methods for pre-eclampsia, none of these has satisfactory sensitivity and specificity, and therefore they are not recommended.

1.9.3 Preterm birth

1.9.3.1 **New** Routine screening for preterm labour should not be offered.

1.9.4 Placenta praevia

1.9.4.1 **New** Because most low-lying placentas detected at the routine anomaly scan will have resolved by the time the baby is born, only a woman whose placenta extends over the internal cervical os should be offered another transabdominal scan at 32 weeks. If the transabdominal scan is unclear, a transvaginal scan should be offered.

1.10 Fetal growth and well-being

1.10.1 **New** Symphysis–fundal height should be measured and recorded at each antenatal appointment from 24 weeks.

1.10.2 **New** Ultrasound estimation of fetal size for suspected large-for-gestational-age unborn babies should not be undertaken in a low-risk population.

1.10.3 **New** Routine Doppler ultrasound should not be used in low-risk pregnancies.

1.10.4 Fetal presentation should be assessed by abdominal palpation at 36 weeks or later, when presentation is likely to influence the plans for the birth. Routine assessment of presentation by abdominal palpation should not be offered before 36 weeks because it is not always accurate and may be uncomfortable.

1.10.5 Suspected fetal malpresentation should be confirmed by an ultrasound assessment.

1.10.6 Routine formal fetal-movement counting should not be offered.

1.10.7 Auscultation of the fetal heart may confirm that the fetus is alive but is unlikely to have any predictive value and routine listening is therefore not recommended. However, when requested by the mother, auscultation of the fetal heart may provide reassurance.

1.10.8 The evidence does not support the routine use of antenatal electronic fetal heart rate monitoring (cardiotocography) for fetal assessment in women with an uncomplicated pregnancy and therefore it should not be offered.

1.10.9 The evidence does not support the routine use of ultrasound scanning after 24 weeks of gestation and therefore it should not be offered.

1.11 Management of specific clinical conditions

1.11.1 Pregnancy after 41 weeks

1.11.1.1 Prior to formal induction of labour, women should be offered a vaginal examination for membrane sweeping.

1.11.1.2 Women with uncomplicated pregnancies should be offered induction of labour beyond 41 weeks.

1.11.1.3 From 42 weeks, women who decline induction of labour should be offered increased antenatal monitoring consisting of at least twice-weekly cardiotocography and ultrasound estimation of maximum amniotic pool depth.

1.11.2 Breech presentation at term

1.11.2.1 All women who have an uncomplicated singleton breech pregnancy at 36 weeks should be offered external cephalic version. Exceptions include women in labour and women with a uterine scar or abnormality, fetal compromise, ruptured membranes, vaginal bleeding and medical conditions.

1.11.2.2 Where it is not possible to schedule an appointment for external cephalic version at 37 weeks, it should be scheduled at 36 weeks.

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[1] The recommendations 1.3.10.1, 1.3.10.3, 1.3.10.4, 1.3.10.5 and 1.3.10.6 are from the NICE public health guidance on smoking cessation. They replace the recommendation 1.3.9.3 from the original Antenatal care clinical guideline (2003). Following NICE protocol, the recommendations have been incorporated verbatim into this guideline. Where one of these recommendations appears, it is indicated as **[NICE PH 2008]**.

2 Notes on the scope of the guidance

NICE guidelines are developed in accordance with a scope that defines what the guideline will and will not cover. The scope of this guideline is available.

How this guideline was developed

NICE commissioned the National Collaborating Centre for Women's and Children's Health to develop this guideline. The Centre established a Guideline Development Group (see appendix A), which reviewed the evidence and developed the recommendations. An independent Guideline Review Panel oversaw the development of the guideline (see appendix B).

There is more information about how NICE clinical guidelines are developed on the NICE website. A booklet, 'How NICE clinical guidelines are developed: an overview for stakeholders, the public and the NHS' is available.

3 Implementation

The Healthcare Commission assesses the performance of NHS organisations in meeting core and developmental standards set by the Department of Health in 'Standards for better health'. Implementation of clinical guidelines forms part of the developmental standard D2. Core standard C5 says that national agreed guidance should be taken into account when NHS organisations are planning and delivering care.

NICE has developed tools to help organisations implement this guidance (listed below). These are available on our website.

- Slides highlighting key messages for local discussion.
- Costing tools:
    - costing report to estimate the national savings and costs associated with implementation
    - costing template to estimate the local costs and savings involved.
- Implementation advice on how to put the guidance into practice and national initiatives which support this locally.
- Audit support for monitoring local practice.

4 Research recommendations

The Guideline Development Group has made the following recommendations for research, based on its review of evidence, to improve NICE guidance and patient care in the future. The Guideline Development Group's full set of research recommendations is detailed in the full guideline (see section 5).

4.1 Information for pregnant women

Alternative ways of helping healthcare professionals to support pregnant women in making informed decisions should be investigated.

Why this is important

Giving pregnant women relevant information to allow them to make an informed decision remains a challenge to all healthcare professionals. The use of media other than leaflets needs to be systematically studied, and the current available evidence is limited.

4.2 Chlamydia screening

Further research needs to be undertaken to assess the effectiveness, practicality and acceptability of chlamydia screening in an antenatal setting.

Why this is important

Chlamydia is a significant healthcare issue, especially among the young, but the current level of evidence provides an insufficient basis for a recommendation. Of particular importance is the possibility that treatment might reduce the incidence of preterm birth and neonatal complications, and studies should be directed to these areas.

4.3 Fetal growth and well-being

Further prospective research is required to evaluate the diagnostic value and effectiveness (both clinical and cost-effectiveness) of predicting small-for-gestational-age babies using:

- customised fetal growth charts to plot symphysis–fundal height measurement
- routine ultrasound in the third trimester.

Why this is important

Poor fetal growth is undoubtedly a cause of serious perinatal mortality and morbidity. Unfortunately, the methods by which the condition can be identified antenatally are poorly developed or not tested by rigorous methodology. However, existing evidence suggests that there may be ways in which babies at risk can be identified and appropriately managed to improve outcome, and this should form the basis of the study.

4.4 The 'Antenatal assessment tool'

Multicentred validation studies are required in the UK to evaluate the use of the 'Antenatal assessment tool'. Using structured questions, the tool aims to support the routine antenatal care of all women by identifying women who may require additional care. The tool identifies women who:

- can remain within or return to the routine antenatal pathway of care
- may need additional obstetric care for medical reasons
- may need social support and/or medical care for a variety of socially complex reasons.

Why this is important

The idea of some form of assessment tool to help group pregnant women into low-risk (midwifery-only care) and increased-risk (midwifery and obstetric care) categories is not new. The 'Antenatal assessment tool' has been developed using a consensus approach. Once developed, it will be essential to subject the tool to a multicentred validation study. The validated tool should have the potential to identify a third group of women who are particularly vulnerable and at increased risk of maternal and perinatal death.

4.5 Vitamin D

There is a need for research into the effectiveness of routine vitamin D supplementation for pregnant and breastfeeding women.

Why this is important

Although there is some evidence of benefit from vitamin D supplementation for pregnant women at risk of vitamin D deficiency, there is less evidence in the case of pregnant women currently regarded as being at low risk of deficiency. It is possible that there will be health gains resulting from vitamin D supplementation, but further evidence is required.

5 Other versions of this guideline

5.1 Full guideline

The full guideline, antenatal care: routine care for the healthy pregnant woman (2008 update) contains details of the methods and evidence used to develop the guideline. It is published by the National Collaborating Centre for Women's and Children's Health.

5.2 Information for the public

A version of this guideline for healthy pregnant women, their partners and the public is available.

We encourage NHS and voluntary sector organisations to use text from this booklet in their own information about antenatal care.

6 Related NICE guidance

- Diabetes in pregnancy: management of diabetes and its complications from pre-conception to the postnatal period (2008) NICE guideline CG63
- Intrapartum care: care of healthy women and their babies during childbirth (2007) NICE guideline CG55
- Antenatal and postnatal mental health: clinical management and service guidance (2007) NICE guideline CG45
- Postnatal care: routine postnatal care of women and their babies (2006) NICE guideline CG37
- Caesarean section (2004) NICE guideline CG13 [replaced by NICE guideline CG132]
- Improving the nutrition of pregnant and breastfeeding mothers and children in low-income households (2008) NICE guideline PH11
- Smoking cessation services in primary care, pharmacies, local authorities and workplaces, particularly for manual working groups, pregnant women and hard to reach communities (2008) NICE guideline PH10
- Brief interventions and referral for smoking cessation in primary care and other settings (2006) NICE guideline PH1
- Induction of labour (2008) NICE guideline CG70
- Routine antenatal anti-D prophylaxis for women who are rhesus D negative (2008) NICE technology appraisal guidance 156

7 Updating the guideline

NICE clinical guidelines are updated as needed so that recommendations take into account important new information. We check for new evidence 2 and 4 years after publication, to decide whether all or part of the guideline should be updated. If important new evidence is published at other times, we may decide to do a more rapid update of some recommendations.

Appendix A: The Guideline Development Group

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Appendix B: The Guideline Review Panel

The Guideline Review Panel is an independent panel that oversees the development of the guideline and takes responsibility for monitoring adherence to NICE guideline development processes. In particular, the panel ensures that stakeholder comments have been adequately considered and responded to. The panel includes members from the following perspectives: primary care, secondary care, lay, public health and industry.

Professor Mike Drummond – Chair
Director, Centre for Health Economics, University of York

Dr Graham Archard
General Practitioner, Dorset

Ms Karen Cowley
Practice Development Nurse, York

Mr Barry Stables
Lay member

Dr David Gillen
Medical Director, Wyeth Pharmaceutical

Ms Catherine Arkley
Lay member

Appendix C: Women requiring additional care

The guideline covers recommendations on baseline clinical care for all pregnant women. It does not offer information on the additional care that some women will require. Pregnant women with the following conditions usually require care that is additional to that detailed in this guideline:

- cardiac disease, including hypertension
- renal disease
- endocrine disorders or diabetes requiring insulin
- psychiatric disorders (being treated with medication)
- haematological disorders
- autoimmune disorders
- epilepsy requiring anticonvulsant drugs
- malignant disease
- severe asthma
- use of recreational drugs such as heroin, cocaine (including crack cocaine) and ecstasy
- HIV or HBV infection
- obesity (body mass index 30 kg/m^2 or above at first contact) or underweight (body mass index below 18 kg/m^2 at first contact)
- higher risk of developing complications, for example, women aged 40 and older, women who smoke
- women who are particularly vulnerable (such as teenagers) or who lack social support.

Women who have experienced any of the following in previous pregnancies:

- recurrent miscarriage (three or more consecutive pregnancy losses or a mid-trimester loss)
- preterm birth

- severe pre-eclampsia, (H) hemolytic anaemia, (EL) elevated liver enzymes, and (LP) low platelet count (HELLP syndrome) or eclampsia
- rhesus isoimmunisation or other significant blood group antibodies
- uterine surgery including caesarean section, myomectomy or cone biopsy
- antenatal or postpartum haemorrhage on two occasions
- puerperal psychosis
- grand multiparity (more than six pregnancies)
- a stillbirth or neonatal death
- a small-for-gestational-age infant (below 5th centile)
- a large-for-gestational-age infant (above 95th centile)
- a baby weighing below 2.5 kg or above 4.5 kg
- a baby with a congenital abnormality (structural or chromosomal).

Appendix D: Antenatal appointments (schedule and content)

New The schedule below, which has been determined by the purpose of each appointment, presents the recommended number of antenatal care appointments for women who are healthy and whose pregnancies remain uncomplicated in the antenatal period: 10 appointments for nulliparous women and 7 for parous women. These appointments follow the woman's initial contact with a healthcare professional when she first presents with the pregnancy and from where she is referred into the maternity care system. This initial contact should be used as an opportunity to provide women with much of the information they need for pregnancy (see section 1.1.1 for recommendations on information giving).

First contact with a healthcare professional

Give information (supported by written information and antenatal classes), with an opportunity to discuss issues and ask questions. Refer to section 1.1.1 for more about giving antenatal information. Topics covered should include:

- folic acid supplementation
- food hygiene, including how to reduce the risk of a food-acquired infection
- lifestyle advice, including smoking cessation, recreational drug use and alcohol consumption
- all antenatal screening, including risks and benefits of the screening tests.

Booking appointment (ideally by 10 weeks)

At the booking appointment, give the following information (supported by written information and antenatal classes), with an opportunity to discuss issues and ask questions. Refer to section 1.1.1 for more about giving antenatal information. Topics covered should include:

- how the baby develops during pregnancy
- nutrition and diet, including vitamin D supplementation
- exercise, including pelvic floor exercises

- antenatal screening, including risks and benefits of the screening tests
- pregnancy care pathway
- place of birth (refer to 'Intrapartum care' [NICE clinical guideline 55])
- breastfeeding, including workshops
- participant-led antenatal classes
- maternity benefits.

At this appointment:

- identify women who may need additional care (see appendix C) and plan pattern of care for the pregnancy
- check blood group and rhesus D status
- offer screening for haemoglobinopathies, anaemia, red-cell alloantibodies, hepatitis B virus, HIV, rubella susceptibility and syphilis
- offer screening for asymptomatic bacteriuria
- inform pregnant women younger than 25 years about the high prevalence of chlamydia infection in their age group, and give details of their local National Chlamydia Screening Programme
- offering screening for Down's syndrome
- offer early ultrasound scan for gestational age assessment
- offer ultrasound screening for structural anomalies
- measure height, weight and calculate body mass index
- measure blood pressure and test urine for proteinuria
- offer screening for gestational diabetes and pre-eclampsia using risk factors
- identify women who have had genital mutilation

- ask about any past or present severe mental illness or psychiatric treatment
- ask about mood to identify possible depression
- ask about the woman's occupation to identify potential risks.

At the booking appointment, for women who choose to have screening, the following tests should be arranged:

- blood tests (for checking blood group and rhesus D status and screening for haemoglobinopathies, anaemia, red-cell alloantibodies, hepatitis B virus, HIV, rubella susceptibility and syphilis), ideally before 10 weeks
- urine tests (to check for proteinuria and screen for asymptomatic bacteriuria)
- ultrasound scan to determine gestational age using:
    - crown–rump measurement between 10 weeks 0 days and 13 weeks 6 days
    - head circumference if crown–rump length is above 84 millimetres
- Down's syndrome screening using:
    - 'combined test' at 11 weeks 0 days to 13 weeks 6 days
    - serum screening test (triple or quadruple) at 15 weeks 0 days to 20 weeks 0 days.
- ultrasound screening for structural anomalies, normally between 18 weeks 0 days and 20 weeks 6 days.

16 weeks

The next appointment should be scheduled at 16 weeks to:

- review, discuss and record the results of all screening tests undertaken; reassess planned pattern of care for the pregnancy and identify women who need additional care
- investigate a haemoglobin level below 11 g/100 ml and consider iron supplementation if indicated
- measure blood pressure and test urine for proteinuria

- give information, with an opportunity to discuss issues and ask questions, including discussion of the routine anomaly scan; offer verbal information supported by antenatal classes and written information.

18 to 20 weeks

At 18 to 20 weeks, if the woman chooses, an ultrasound scan should be performed for the detection of structural anomalies. For a woman whose placenta is found to extend across the internal cervical os at this time, another scan at 32 weeks should be offered.

25 weeks

At 25 weeks, another appointment should be scheduled for nulliparous women. At this appointment:

- measure and plot symphysis–fundal height
- measure blood pressure and test urine for proteinuria
- give information, with an opportunity to discuss issues and ask questions; offer verbal information supported by antenatal classes and written information.

28 weeks

The next appointment for all pregnant women should occur at 28 weeks. At this appointment:

- offer a second screening for anaemia and atypical red-cell alloantibodies
- investigate a haemoglobin level below 10.5 g/100 ml and consider iron supplementation, if indicated
- offer anti-D prophylaxis to rhesus-negative women
- measure blood pressure and test urine for proteinuria
- measure and plot symphysis–fundal height
- give information, with an opportunity to discuss issues and ask questions; offer verbal information supported by antenatal classes and written information.

31 weeks

Nulliparous women should have an appointment scheduled at 31 weeks to:

- measure blood pressure and test urine for proteinuria
- measure and plot symphysis–fundal height
- give information, with an opportunity to discuss issues and ask questions; offer verbal information supported by antenatal classes and written information
- review, discuss and record the results of screening tests undertaken at 28 weeks; reassess planned pattern of care for the pregnancy and identify women who need additional care.

34 weeks

At 34 weeks, all pregnant women should be seen again. Give information (supported by written information and antenatal classes), with an opportunity to discuss issues and ask questions. Refer to section 1.1.1 for more about giving antenatal information. Topics covered should include:

- preparation for labour and birth, including information about coping with pain in labour and the birth plan
- recognition of active labour.

At this appointment:

- offer a second dose of anti-D to rhesus-negative women
- measure blood pressure and test urine for proteinuria
- measure and plot symphysis–fundal height
- give information, with an opportunity to discuss issues and ask questions; offer verbal information supported by antenatal classes and written information
- review, discuss and record the results of screening tests undertaken at 28 weeks; reassess planned pattern of care for the pregnancy and identify women who need additional care.

36 weeks

At the 36-week appointment, all pregnant women should be seen again. Give the following information (supported by written information and antenatal classes), with an opportunity to discuss issues and ask questions. Refer to section 1.1.1 for more about giving antenatal information. Topics covered should include:

- breastfeeding information, including technique and good management practices that would help a woman succeed, such as detailed in the UNICEF Baby Friendly Initiative
- care of the new baby
- vitamin K prophylaxis and newborn screening tests
- postnatal self-care
- awareness of 'baby blues' and postnatal depression.

At this appointment:

- measure blood pressure and test urine for proteinuria
- measure and plot symphysis–fundal height
- check position of baby
- for women whose babies are in the breech presentation, offer external cephalic version (ECV)

38 weeks

Another appointment at 38 weeks will allow for:

- measurement of blood pressure and urine testing for proteinuria
- measurement and plotting of symphysis–fundal height
- information giving, including options for management of prolonged pregnancy, with an opportunity to discuss issues and ask questions; verbal information supported by antenatal classes and written information.

40 weeks

For nulliparous women, an appointment at 40 weeks should be scheduled to:

- measure blood pressure and test urine for proteinuria
- measure and plot symphysis–fundal height
- give information, including further discussion about the options for prolonged pregnancy, with an opportunity to discuss issues and ask questions; offer verbal information supported by antenatal classes and written information.

41 weeks

For women who have not given birth by 41 weeks:

- a membrane sweep should be offered
- induction of labour should be offered
- blood pressure should be measured and urine tested for proteinuria
- symphysis–fundal height should be measured and plotted
- information should be given, with an opportunity to discuss issues and ask questions; verbal information supported by written information.

General

Throughout the entire antenatal period, healthcare providers should remain alert to risk factors, signs or symptoms of conditions that may affect the health of the mother and baby, such as domestic violence, pre-eclampsia and diabetes (refer to diabetes in pregnancy NICE guideline CG63).

Changes after publication

December 2014: recommendations 1.5.6.1 to 1.5.6.4 were replaced by recommendations in the NICE guideline on antenatal and postnatal mental health.

November 2014: recommendation 1.3.2.4 was updated to take into account NICE's guideline on vitamin D: increasing supplement use among at-risk groups

October 2012: minor maintenance

January 2012: minor maintenance

June 2010

The recommendations about smoking in pregnancy in section 1.3.10 of this guideline have been further developed in how to stop smoking in pregnancy and following childbirth NICE guideline PH26. We have removed the following recommendation from the antenatal care guideline, as well as the quick reference guide and information for the public:

1.3.10.7 Women who are unable to quit smoking during pregnancy should be encouraged to reduce smoking.

About this guideline

NICE clinical guidelines are recommendations about the treatment and care of people with specific diseases and conditions in the NHS in England and Wales.

The guideline was developed by the National Collaborating Centre for Women's and Children's Health. The Collaborating Centre worked with a group of healthcare professionals (including consultants, GPs and nurses), patients and carers, and technical staff, who reviewed the evidence and drafted the recommendations. The recommendations were finalised after public consultation.

The methods and processes for developing NICE clinical guidelines are described in the guidelines manual.

The recommendations from this guideline have been incorporated into a NICE Pathway. We have produced information for the public explaining this guideline. Tools to help you put the guideline into practice and information about the evidence it is based on are also available.

Your responsibility

This guidance represents the view of NICE, which was arrived at after careful consideration of the evidence available. Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. However, the guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer, and informed by the summary of product characteristics of any drugs they are considering.

Implementation of this guidance is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guidance, in their local context, in light of their duties to avoid unlawful discrimination and to have regard to promoting equality of opportunity. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties.

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