Intrapartum care: care for healthy women and babies

NICE guideline: short version

Draft for consultation, October 2016

This guideline covers the care of healthy women and their babies during labour and immediately after the birth. It helps women to make an informed choice about where to have their baby. It also aims to reduce variation in areas of care such as fetal monitoring during labour and management of the third stage of labour.

Who is it for?

- Healthcare professionals
- Commissioners and providers
- Healthy women who have had a straightforward pregnancy and give birth between 37 and 42 weeks of pregnancy

This guideline will update NICE guideline CG190 (published December 2014).

We have updated or added new recommendations on measuring fetal heart rate as part of the initial assessment and fetal monitoring during labour.

You are invited to comment on the new and updated recommendations in this guideline. These are marked as:

- **[new 2017]** if the evidence has been reviewed and the recommendation has been added or updated **or**
- **[2017]** if the evidence has been reviewed but no change has been made to the recommended action.

You are also invited to comment on recommendations that NICE proposes to delete from the 2014 guideline.

We have not updated recommendations shaded in grey, and cannot accept

comments on them.

See Update information for a full explanation of what is being updated.

This version of the guideline contains the draft recommendations, context and recommendations for research. Information about how the guideline was developed is on the guideline's page on the NICE website. This includes the guideline committee's discussion and the evidence reviews, and details of the committee and any declarations of interest.

Evidence for the 2014 and 2007 recommendations is in the full version of the 2014 guideline. The supporting information and evidence for the 2017 recommendations is contained in the addendum.

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Contents

Recommendations

People have the right to be involved in discussions and make informed decisions about their care, as described in your care.

Making decisions using NICE guidelines explains how we use words to show the strength (or certainty) of our recommendations, and has information about prescribing medicines (including off-label use), professional guidelines, standards and laws (including on consent and mental capacity), and safeguarding.

1.1 Place of birth

Choosing planned place of birth

Women at low risk of complications

1.1.1 Explain to both multiparous and nulliparous women who are at low risk of complications that giving birth is generally very safe for both the woman and her baby. **[2014]**

1.1.2 Explain to both multiparous and nulliparous women that they may choose any birth setting (home, freestanding midwifery unit, alongside midwifery unit or obstetric unit), and support them in their choice of setting wherever they choose to give birth:

- Advise low-risk multiparous women that planning to give birth at home or in a midwifery-led unit (freestanding or alongside) is particularly suitable for them because the rate of interventions is lower and the outcome for the baby is no different compared with an obstetric unit.
- Advise low-risk nulliparous women that planning to give birth in a midwifery-led unit (freestanding or alongside) is particularly suitable for them because the rate of interventions is lower and the outcome for the baby is no different compared with an obstetric unit. Explain that if they plan birth at home there is a

small increase in the risk of an adverse outcome for the baby. **[2014]**

1.1.3 Using tables 1 and 2, explain to low-risk multiparous women that:

- planning birth at home or in a freestanding midwifery unit is associated with a higher rate of spontaneous vaginal birth than planning birth in an alongside midwifery unit, and these 3 settings are associated with higher rates of spontaneous vaginal birth than planning birth in an obstetric unit
- planning birth in an obstetric unit is associated with a higher rate of interventions, such as instrumental vaginal birth, caesarean section and episiotomy, compared with planning birth in other settings
- there are no differences in outcomes for the baby associated with planning birth in any setting. **[2014]**

Table 1 Rates of spontaneous vaginal birth, transfer to an obstetric unit and obstetric interventions for each planned place of birth: low-risk multiparous women (sources: Birthplace 2011; Blix et al. 2012)

	Number of incidences per 1000 multiparous women giving birth			
	Home	**Freestanding midwifery unit**	**Alongside midwifery unit**	**Obstetric unit**
Spontaneous vaginal birth	984*	980	967	927*
Transfer to an obstetric unit	115*	94	125	10**
Regional analgesia (epidural and/or spinal)***	28*	40	60	121*
Episiotomy	15*	23	35	56*
Caesarean birth	7*	8	10	35*
Instrumental birth (forceps or ventouse)	9*	12	23	38*
Blood transfusion	4	4	5	8

* Figures from Birthplace 2011 and Blix et al. 2012 (all other figures from Birthplace 2011).

** Estimated transfer rate from an obstetric unit to a different obstetric unit owing to lack of capacity or expertise.

*** Blix reported epidural analgesia and Birthplace reported spinal or epidural analgesia.

Table 2 Outcomes for the baby for each planned place of birth: low-risk multiparous women (source: Birthplace 2011)

	Number of babies per 1000 births			
	Home	**Freestanding midwifery unit**	**Alongside midwifery unit**	**Obstetric unit**
Babies without serious medical problems	997	997	998	997
Babies with serious medical problems*	3	3	2	3

* Serious medical problems were combined in the study: neonatal encephalopathy and meconium aspiration syndrome were the most common adverse events, together accounting for 75% of the total. Stillbirths after the start of care in labour and death of the baby in the first week of life accounted for 13% of the events. Fractured humerus and clavicle were uncommon outcomes (less than 4% of adverse events). For the frequency of these events (how often any of them actually occurred), see appendix A.

1.1.4 Using tables 3 and 4, explain to low-risk nulliparous women that:

- planning birth at home or in a freestanding midwifery unit is associated with a higher rate of spontaneous vaginal birth than planning birth in an alongside midwifery unit, and these 3 settings are associated with higher rates of spontaneous vaginal birth than planning birth in an obstetric unit
- planning birth in an obstetric unit is associated with a higher rate of interventions, such as instrumental vaginal birth, caesarean section and episiotomy, compared with planning birth in other settings
- there are no differences in outcomes for the baby associated with planning birth in an alongside midwifery unit, a freestanding midwifery unit or an obstetric unit

- planning birth at home is associated with an overall small increase (about 4 more per 1000 births) in the risk of a baby having a serious medical problem compared with planning birth in other settings. **[2014]**

Table 3 Rates of spontaneous vaginal birth, transfer to an obstetric unit and obstetric interventions for each planned place of birth: low-risk nulliparous women (sources: Birthplace 2011; Blix et al. 2012)

	Number of incidences per 1000 nulliparous women giving birth			
	Home	**Freestanding midwifery unit**	**Alongside midwifery unit**	**Obstetric unit**
Spontaneous vaginal birth	794*	813	765	688*
Transfer to an obstetric unit	450*	363	402	10**
Regional analgesia (epidural and/or spinal)***	218*	200	240	349*
Episiotomy	165*	165	216	242*
Caesarean birth	80*	69	76	121*
Instrumental birth (forceps or ventouse)	126*	118	159	191*
Blood transfusion	12	8	11	16

* Figures from Birthplace 2011 and Blix et al. 2012 (all other figures from Birthplace 2011).

** Estimated transfer rate from an obstetric unit to a different obstetric unit owing to lack of capacity or expertise.

*** Blix reported epidural analgesia and Birthplace reported spinal or epidural analgesia.

Table 4 Outcomes for the baby for each planned place of birth: low-risk nulliparous women (source: Birthplace 2011)

	Number of babies per 1000 births			
	Home	**Freestanding midwifery unit**	**Alongside midwifery unit**	**Obstetric unit**
Babies without serious medical problems	991	995	995	995
Babies with serious medical problems*	9	5	5	5
* Serious medical problems were combined in the study: neonatal encephalopathy and meconium aspiration syndrome were the most common adverse events, together accounting for 75% of the total. Stillbirths after the start of care in labour and death of the baby in the first week of life accounted for 13% of the events. Fractured humerus and clavicle were uncommon outcomes – less than 4% of adverse events. For the frequency of these events (how often any of them actually occurred), see appendix A.				

1.1.5 Ensure that all healthcare professionals involved in the care of pregnant women are familiar with the types and frequencies of serious medical problems that can affect babies (see appendix A), in order to be able to provide this information to women if they request it. **[2014]**

1.1.6 Commissioners and providers[1] should ensure that all 4 birth settings are available to all women (in the local area or in a neighbouring area). **[2014]**

1.1.7 Give the woman the following information, including local statistics, about all local birth settings:

- Access to midwives, including:
  - the likelihood of being cared for in labour by a familiar midwife
  - the likelihood of receiving one-to-one care throughout labour (not necessarily being cared for by the same midwife for the whole of labour).
- Access to medical staff (obstetric, anaesthetic and neonatal).

[1] This can also include networks of providers

- Access to pain relief, including birthing pools, Entonox, other drugs and regional analgesia.
- The likelihood of being transferred to an obstetric unit (if this is not the woman's chosen place of birth), the reasons why this might happen and the time it may take. Refer to table 5 if no local data are available. **[2014]**

Table 5 Primary reasons for transfer to an obstetric unit (source: Birthplace 2011)

Primary reason for transfer to an obstetric unit*	Number of women transferred (% of total transferred from each setting)		
	From home (n=3529)	From a freestanding midwifery unit (n=2457)	From an alongside midwifery unit (n=4401)
Delay during first or second stage of labour	1144 (32.4%)	912 (37.1%)	1548 (35.2%)
Abnormal fetal heart rate	246 (7.0%)	259 (10.5%)	477 (10.8%)
Request for regional analgesia	180 (5.1%)	163 (6.6%)	585 (13.3%)
Meconium staining	432 (12.2%)	301 (12.2%)	538 (12.2%)
Retained placenta	250 (7.0%)	179 (7.3%)	203 (4.6%)
Repair of perineal trauma	386 (10.9%)	184 (7.5%)	369 (8.4%)
Neonatal concerns (postpartum)	180 (5.1%)	63 (2.6%)	5 (0.0%)
Other	711 (20.1%)	396 (16.2%)	676 (16.3%)
* Main reason for transfer to an obstetric unit for each woman (there may be more than 1 reason).			

1.1.8 If further discussion is wanted by either the midwife or the woman about the choice of planned place of birth, arrange this with a consultant midwife or supervisor of midwives, and/or a consultant obstetrician if there are obstetric issues. **[2014]**

1.1.9 When discussing the woman's choice of place of birth with her, do not disclose personal views or judgements about her choices. **[2014]**

Medical conditions and other factors that may affect planned place of birth

1.1.10 Use tables 6, 7, 8 and 9 as part of an assessment for a woman choosing her planned place of birth:

- Tables 6 and 7 show medical conditions or situations in which there is increased risk for the woman or baby during or shortly after labour, where care in an obstetric unit would be expected to reduce this risk.
- The factors listed in tables 8 and 9 are not reasons in themselves for advising birth within an obstetric unit, but indicate that further consideration of birth setting may be required.
- Discuss these risks and the additional care that can be provided in the obstetric unit with the woman so that she can make an informed choice about planned place of birth. **[2007, amended 2014]**

Table 6 Medical conditions indicating increased risk suggesting planned birth at an obstetric unit

Disease area	Medical condition
Cardiovascular	Confirmed cardiac disease Hypertensive disorders
Respiratory	Asthma requiring an increase in treatment or hospital treatment Cystic fibrosis
Haematological	Haemoglobinopathies – sickle-cell disease, beta-thalassaemia major History of thromboembolic disorders Immune thrombocytopenia purpura or other platelet disorder or platelet count below 100×10^9/litre Von Willebrand's disease Bleeding disorder in the woman or unborn baby Atypical antibodies which carry a risk of haemolytic disease of the newborn
Endocrine	Hyperthyroidism Diabetes
Infective	Risk factors associated with group B streptococcus whereby antibiotics in labour would be recommended Hepatitis B/C with abnormal liver function tests Carrier of/infected with HIV

	Toxoplasmosis – women receiving treatment Current active infection of chicken pox/rubella/genital herpes in the woman or baby Tuberculosis under treatment
Immune	Systemic lupus erythematosus Scleroderma
Renal	Abnormal renal function Renal disease requiring supervision by a renal specialist
Neurological	Epilepsy Myasthenia gravis Previous cerebrovascular accident
Gastrointestinal	Liver disease associated with current abnormal liver function tests
Psychiatric	Psychiatric disorder requiring current inpatient care

Table 7 Other factors indicating increased risk suggesting planned birth at an obstetric unit

Factor	Additional information
Previous complications	Unexplained stillbirth/neonatal death or previous death related to intrapartum difficulty Previous baby with neonatal encephalopathy Pre-eclampsia requiring preterm birth Placental abruption with adverse outcome Eclampsia Uterine rupture Primary postpartum haemorrhage requiring additional treatment or blood transfusion Retained placenta requiring manual removal in theatre Caesarean section Shoulder dystocia

Current pregnancy	Multiple birth Placenta praevia Pre-eclampsia or pregnancy-induced hypertension Preterm labour or preterm prelabour rupture of membranes Placental abruption Anaemia – haemoglobin less than 85 g/litre at onset of labour Confirmed intrauterine death Induction of labour Substance misuse Alcohol dependency requiring assessment or treatment Onset of gestational diabetes Malpresentation – breech or transverse lie BMI at booking of greater than 35 kg/m^2 Recurrent antepartum haemorrhage Small for gestational age in this pregnancy (less than fifth centile or reduced growth velocity on ultrasound) Abnormal fetal heart rate/Doppler studies Ultrasound diagnosis of oligo-/polyhydramnios
Previous gynaecological history	Myomectomy Hysterotomy

Table 8 Medical conditions indicating individual assessment when planning place of birth

Disease area	Medical condition
Cardiovascular	Cardiac disease without intrapartum implications
Haematological	Atypical antibodies not putting the baby at risk of haemolytic disease Sickle-cell trait Thalassaemia trait Anaemia – haemoglobin 85–105 g/litre at onset of labour
Infective	Hepatitis B/C with normal liver function tests
Immune	Non-specific connective tissue disorders
Endocrine	Unstable hypothyroidism such that a change in treatment is required
Skeletal/neurological	Spinal abnormalities Previous fractured pelvis Neurological deficits
Gastrointestinal	Liver disease without current abnormal liver function Crohn's disease Ulcerative colitis

Table 9 Other factors indicating individual assessment when planning place of birth

Factor	Additional information
Previous complications	Stillbirth/neonatal death with a known non-recurrent cause Pre-eclampsia developing at term Placental abruption with good outcome History of previous baby more than 4.5 kg Extensive vaginal, cervical, or third- or fourth-degree perineal trauma Previous term baby with jaundice requiring exchange transfusion
Current pregnancy	Antepartum bleeding of unknown origin (single episode after 24 weeks of gestation) BMI at booking of 30–35 kg/m^2 Blood pressure of 140 mmHg systolic or 90 mmHg diastolic or more on two occasions Clinical or ultrasound suspicion of macrosomia Para 4 or more Recreational drug use Under current outpatient psychiatric care Age over 35 at booking
Fetal indications	Fetal abnormality
Previous gynaecological history	Major gynaecological surgery Cone biopsy or large loop excision of the transformation zone Fibroids

Women's experience in all birth settings

1.1.11 For all women giving birth in all birth settings, follow the principles in the NICE guideline on patient experience in adult NHS services. **[2014]**

1.1.12 Providers, senior staff and all healthcare professionals should ensure that in all birth settings there is a culture of respect for each woman as an individual undergoing a significant and emotionally intense life experience, so that the woman is in control, is listened to and is cared for with compassion, and that appropriate informed consent is sought. **[2014]**

1.1.13 Senior staff should demonstrate, through their own words and behaviour, appropriate ways of relating to and talking about women and their birth companion(s), and of talking about birth and the choices to be made when giving birth. **[2014]**

One-to-one care in all birth settings

1.1.14 Maternity services should:

- provide a model of care that supports one-to-one care in labour for all women **and**
- benchmark services and identify overstaffing or understaffing by using workforce planning models and/or woman-to-midwife ratios. **[2014]**

Service organisation and clinical governance

1.1.15 Ensure that all women giving birth have timely access to an obstetric unit if they need transfer of care for medical reasons or because they request regional analgesia. **[2014]**

1.1.16 Commissioners and providers[2] should ensure that there are:

- robust protocols in place for transfer of care between settings (see also section 1.6)
- clear local pathways for the continued care of women who are transferred from one setting to another, including:
  - when crossing provider boundaries
  - if the nearest obstetric or neonatal unit is closed to admissions or the local midwifery-led unit is full. **[2014]**

1.1.17 Commissioners and providers[3] should ensure that there are multidisciplinary clinical governance structures in place to enable the oversight of all birth settings. These structures should include, as a minimum, midwifery (including a supervisor of midwives),

[2] This can also include networks of providers.
[3] This can also include networks of providers.

obstetric, anaesthetic and neonatal expertise, and adequately supported user representation. **[2014]**

1.2 Care throughout labour

Communication

1.2.1 Treat all women in labour with respect. Ensure that the woman is in control of and involved in what is happening to her, and recognise that the way in which care is given is key to this. To facilitate this, establish a rapport with the woman, ask her about her wants and expectations for labour, and be aware of the importance of tone and demeanour, and of the actual words used. Use this information to support and guide her through her labour. **[2007]**

1.2.2 To establish communication with the woman:

- Greet the woman with a smile and a personal welcome, establish her language needs, introduce yourself and explain your role in her care.
- Maintain a calm and confident approach so that your demeanour reassures the woman that all is going well.
- Knock and wait before entering the woman's room, respecting it as her personal space, and ask others to do the same.
- Ask how the woman is feeling and whether there is anything in particular she is worried about.
- If the woman has a written birth plan, read and discuss it with her.
- Assess the woman's knowledge of strategies for coping with pain and provide balanced information to find out which available approaches are acceptable to her.
- Encourage the woman to adapt the environment to meet her individual needs.
- Ask her permission before all procedures and observations, focusing on the woman rather than the technology or the documentation.

- Show the woman and her birth companion(s) how to summon help and reassure her that she may do so whenever and as often as she needs to. When leaving the room, let her know when you will return.
- Involve the woman in any handover of care to another professional, either when additional expertise has been brought in or at the end of a shift. **[2007]**

Mobilisation

1.2.3 Encourage and help the woman to move and adopt whatever positions she finds most comfortable throughout labour. **[2007]**

Support

1.2.4 Encourage the woman to have support from birth companion(s) of her choice. **[2007]**

Hygiene measures

1.2.5 Tap water may be used if cleansing is required before vaginal examination. **[2007]**

1.2.6 Routine hygiene measures taken by staff caring for women in labour, including standard hand hygiene and single-use non-sterile gloves, are appropriate to reduce cross-contamination between women, babies and healthcare professionals. **[2007]**

1.2.7 Selection of protective equipment must[4] be based on an assessment of the risk of transmission of microorganisms to the woman, and the risk of contamination of the healthcare worker's clothing and skin by women's blood, body fluids, secretions or excretions[5]. **[2007, amended 2014]**

[4] In accordance with current health and safety legislation (at the time of publication of NICE guideline CG139 [March 2012]): Health and Safety at Work Act 1974, Management of Health and Safety at Work Regulations 1999, Health and Safety Regulations 2002, Control of Substances Hazardous to Health Regulations 2002, Personal Protective Equipment Regulations 2002 and Health and Social Care Act 2008

[5] This recommendation is adapted from Infection: prevention and control of healthcare-associated infections in primary and community care (2012) NICE guideline CG139.

1.3 Latent first stage of labour

Definitions of the latent and established first stages of labour

1.3.1 For the purposes of this guideline, use the following definitions of labour:

- Latent first stage of labour – a period of time, not necessarily continuous, when:
  - there are painful contractions **and**
  - there is some cervical change, including cervical effacement and dilatation up to 4 cm.
- Established first stage of labour – when:
  - there are regular painful contractions **and**
  - there is progressive cervical dilatation from 4 cm. **[2007]**

Education and early assessment

1.3.2 Give all nulliparous women information antenatally about:

- what to expect in the latent first stage of labour
- how to work with any pain they experience
- how to contact their midwifery care team and what to do in an emergency. **[2014]**

1.3.3 Offer all nulliparous women antenatal education about the signs of labour, consisting of:

- how to differentiate between Braxton Hicks contractions and active labour contractions
- the expected frequency of contractions and how long they last
- recognition of amniotic fluid (‘waters breaking’)
- description of normal vaginal loss. **[2014]**

1.3.4 Consider an early assessment of labour by telephone triage provided by a dedicated triage midwife for all women. **[2014]**

1.3.5 Consider a face-to-face early assessment of labour for all low-risk nulliparous women, either:

- at home (regardless of planned place of birth) **or**
- in an assessment facility in her planned place of birth (midwifery-led unit or obstetric unit), comprising one-to-one midwifery care for at least 1 hour. **[2014]**

1.3.6 Include the following in any early or triage assessment of labour:

- ask the woman how she is, and about her wishes, expectations and any concerns she has
- ask the woman about the baby's movements, including any changes
- give information about what the woman can expect in the latent first stage of labour and how to work with any pain she experiences
- give information about what to expect when she accesses care
- agree a plan of care with the woman, including guidance about who she should contact next and when
- provide guidance and support to the woman's birth companion(s). **[2014]**

1.3.7 The triage midwife should document the guidance that she gives to the woman. **[2014]**

1.3.8 If a woman seeks advice or attends a midwifery-led unit or obstetric unit with painful contractions, but is not in established labour:

- recognise that a woman may experience painful contractions without cervical change, and although she is described as not being in labour, she may well think of herself as being 'in labour' by her own definition
- offer her individualised support, and analgesia if needed

- encourage her to remain at or return home, unless doing so leads to a significant risk that she could give birth without a midwife present or become distressed. **[2014]**

Pain relief

1.3.9 Advise the woman and her birth companion(s) that breathing exercises, immersion in water and massage may reduce pain during the latent first stage of labour. (See also recommendation 1.9.3) **[2014]**

1.3.10 Do not offer or advise aromatherapy, yoga or acupressure for pain relief during the latent first stage of labour. If a woman wants to use any of these techniques, respect her wishes. **[2014]**

1.4 Initial assessment

1.4.1 When performing an initial assessment of a woman in labour, listen to her story and take into account her preferences and her emotional and psychological needs. **[2014]**

1.4.2 Carry out an initial assessment to determine if midwifery-led care in any setting is suitable for the woman, irrespective of any previous plan. The assessment should comprise the following:

- Observations of the woman:
  - Review the antenatal notes (including all antenatal screening results) and discuss these with the woman.
  - Ask her about the length, strength and frequency of her contractions.
  - Ask her about any pain she is experiencing and discuss her options for pain relief.
  - Record her pulse, blood pressure and temperature, and carry out urinalysis.
  - Record if she has had any vaginal loss.
- Observations of the unborn baby:

- Ask the woman about the baby's movements in the last 24 hours.
- Palpate the woman's abdomen to determine the fundal height, the baby's lie, presentation, position, engagement of the presenting part, and frequency and duration of contractions.

- Auscultate the fetal heart rate for a minimum of 1 minute immediately after a contraction. Palpate the woman's pulse to differentiate between the heart rates of the woman and the baby.

In addition (see also recommendation 1.4.5):

- If there is uncertainty about whether the woman is in established labour, a vaginal examination may be helpful after a period of assessment, but is not always necessary.
- If the woman appears to be in established labour, offer a vaginal examination. **[2014]**

1.4.3 Transfer the woman to obstetric-led care, following the general principles for transfer of care described in section 1.6, if any of the following are observed on initial assessment:

- Observations of the woman:
  - pulse over 120 beats/minute on 2 occasions 30 minutes apart
  - a single reading of either raised diastolic blood pressure of 110 mmHg or more or raised systolic blood pressure of 160 mmHg or more
  - either raised diastolic blood pressure of 90 mmHg or more or raised systolic blood pressure of 140 mmHg or more on 2 consecutive readings taken 30 minutes apart
  - a reading of 2+ of protein on urinalysis and a single reading of either raised diastolic blood pressure (90 mmHg or more) or raised systolic blood pressure (140 mmHg or more)
  - temperature of 38°C or above on a single reading, or 37.5°C or above on 2 consecutive readings 1 hour apart
  - any vaginal blood loss other than a show

- rupture of membranes more than 24 hours before the onset of established labour (see recommendation 1.15.25)
- the presence of significant meconium (see recommendation 1.5.2)
- pain reported by the woman that differs from the pain normally associated with contractions
- any risk factors recorded in the woman's notes that indicate the need for obstetric led care.

- Observations of the unborn baby:
  - any abnormal presentation, including cord presentation
  - transverse or oblique lie
  - high (4/5–5/5 palpable) or free-floating head in a nulliparous woman
  - suspected fetal growth restriction or macrosomia
  - suspected anhydramnios or polyhydramnios
  - fetal heart rate below 110 or above 160 beats/minute
  - a deceleration in fetal heart rate heard on intermittent auscultation
  - reduced fetal movements in the last 24 hours reported by the woman.

  If none of these are observed, continue with midwifery led care unless the woman requests transfer (see also recommendation 1.4.6). **[2014]**

1.4.4 If any of the factors in recommendation 1.4.3 are observed but birth is imminent, assess whether birth in the current location is preferable to transferring the woman to an obstetric unit and discuss this with the coordinating midwife. **[2014]**

1.4.5 When conducting a vaginal examination:

- be sure that the examination is necessary and will add important information to the decision-making process

- recognise that a vaginal examination can be very distressing for a woman, especially if she is already in pain, highly anxious and in an unfamiliar environment
- explain the reason for the examination and what will be involved
- ensure the woman's informed consent, privacy, dignity and comfort
- explain sensitively the findings of the examination and any impact on the birth plan to the woman and her birth companion(s). **[2014]**

Measuring fetal heart rate as part of initial assessment

1.4.6 Do not routinely offer cardiotocography on admission to low-risk women in suspected or established labour as part of the initial assessment. **[new 2017]**

1.4.7 If a low-risk woman requests cardiotocography as part of the initial assessment:

- discuss the risks and benefits and support her in her choice
- if she is in a setting where cardiotocography is not available, explain that she will need to be transferred to obstetric-led care. **[new 2017]**

1.4.8 Offer continuous cardiotocography if any of the risk factors listed in recommendation 1.4.3 are identified on initial assessment, and explain to the woman why this is being offered. (See also section 1.10 on fetal monitoring.) **[new 2017]**

1.4.9 Auscultate the fetal heart rate at first contact with the woman in suspected or established labour, and at each further assessment.

- Auscultate the fetal heart rate for a minimum of 1 minute immediately after a contraction and record it as a single rate.
- Palpate the maternal pulse to differentiate between maternal heart rate and fetal heart rate.
- Record accelerations and decelerations if heard. **[2017]**

1.4.10 Offer cardiotocography if intermittent auscultation indicates possible fetal heart rate abnormalities, and explain to the woman why this is being offered. Return to intermittent auscultation after 20 minutes if the trace indicates a low risk of fetal acidosis (see table 11). (See also section 1.10 on fetal monitoring.) **[new 2017]**

1.4.11 If fetal death is suspected despite the presence of an apparently recorded fetal heart rate, offer real-time ultrasound assessment to check fetal viability. **[2017]**

1.5 Ongoing assessment

1.5.1 Transfer the woman to obstetric-led care (following the general principles for transfer of care described in section 1.6) if any of the following are observed at any point, unless the risks of transfer outweigh the benefits:

- Observations of the woman:
  - pulse over 120 beats/minute on 2 occasions 30 minutes apart
  - a single reading of either raised diastolic blood pressure of 110 mmHg or more or raised systolic blood pressure of 160 mmHg or more
  - either raised diastolic blood pressure of 90 mmHg or more or raised systolic blood pressure of 140 mmHg or more on 2 consecutive readings taken 30 minutes apart
  - a reading of 2+ of protein on urinalysis and a single reading of either raised diastolic blood pressure (90 mmHg or more) or raised systolic blood pressure (140 mmHg or more)
  - temperature of 38°C or above on a single reading, or 37.5°C or above on 2 consecutive occasions 1 hour apart
  - any vaginal blood loss other than a show
  - the presence of significant meconium (see recommendation 1.5.2)
  - pain reported by the woman that differs from the pain normally associated with contractions

- confirmed delay in the first or second stage of labour
- request by the woman for additional pain relief using regional analgesia
- obstetric emergency – including antepartum haemorrhage, cord prolapse, postpartum haemorrhage, maternal seizure or collapse, or a need for advanced neonatal resuscitation
- retained placenta
- third-degree or fourth-degree tear or other complicated perineal trauma that needs suturing.

• Observations of the unborn baby:

- any abnormal presentation, including cord presentation
- transverse or oblique lie
- high (4/5–5/5 palpable) or free-floating head in a nulliparous woman
- suspected fetal growth restriction or macrosomia
- suspected anhydramnios or polyhydramnios
- fetal heart rate below 110 or above 160 beats/minute
- a deceleration in fetal heart rate heard on intermittent auscultation.

If none of these are observed, continue with midwifery led care unless the woman requests transfer (see also recommendation 1.4.6). **[2014]**

Presence of meconium

1.5.2 As part of ongoing assessment, document the presence or absence of significant meconium. This is defined as dark green or black amniotic fluid that is thick or tenacious, or any meconium-stained amniotic fluid containing lumps of meconium. **[2014]**

1.5.3 If significant meconium is present, ensure that:

- healthcare professionals trained in fetal blood sampling are available during labour **and**
- healthcare professionals trained in advanced neonatal life support are readily available for the birth. **[2014]**

1.5.4 If significant meconium is present, transfer the woman to obstetric-led care provided that it is safe to do so and the birth is unlikely to occur before transfer is completed. Follow the general principles for transfer of care described in section 1.6. **[2014]**

1.6 General principles for transfer of care

Transfer of care refers to the transfer between midwifery-led care and obstetric-led care. This may or may not involve transport from one location to another. Women who are receiving midwifery-led care in an obstetric unit can have their care transferred to obstetric-led care without being moved.

1.6.1 Base any decisions about transfer of care on clinical findings, and discuss the options with the woman and her birth companion(s). **[2014]**

1.6.2 If contemplating transfer of care:

- talk with the woman and her birth companion(s) about the reasons for this and what they can expect, including the time needed for transfer
- address any concerns she has and try to allay her anxiety
- ensure that her wishes are respected and her informed consent is obtained. **[2014]**

1.6.3 When arranging transfer of care, the midwife attending the labour should contact the ambulance service (if appropriate) and the coordinating midwife in the obstetric unit. The coordinating midwife should then alert the relevant healthcare professionals (obstetric, anaesthetic and neonatal). **[2014]**

1.6.4 When arranging transfer from one location to another, ensure the following:

- Before transfer, the woman is dressed, wrapped in a blanket or otherwise covered in a way that she feels is comfortable and appropriate.
- The woman is made to feel as comfortable as possible before and during transfer.
- Any ambulance staff or other personnel involved are aware that some positions may make the woman uncomfortable or afraid and could affect her labour, so she should be encouraged to choose how to move and what position to adopt if possible, in accordance with ambulance service protocols.
- Communication and companionship are maintained. Explain the arrangements for transfer to the woman and her birth companion(s). A midwife who has been involved in her care up to that point should travel with her and carry out a handover of care that involves the woman.
- Arrangements are in place to enable the woman's birth companion(s) to travel with her in the ambulance if that is what she wants. If this is not possible or not wanted, check that the birth companion(s) have or can arrange their own transport. **[2014]**

1.6.5 If a woman is transferred to an obstetric unit after the birth (see section 1.16), ensure that her baby goes with her. **[2014]**

1.7 Care in established labour

Support in labour

1.7.1 Provide a woman in established labour with supportive one-to-one care. **[2007]**

1.7.2 Do not leave a woman in established labour on her own except for short periods or at the woman's request. **[2007]**

1.7.3 Team midwifery (defined as a group of midwives providing care and taking shared responsibility for a group of women from the antenatal, through intrapartum to the postnatal period) is not recommended.[6] **[2007]**

Controlling gastric acidity

1.7.4 Do not offer either H_2-receptor antagonists or antacids routinely to low-risk women. **[2007]**

1.7.5 Either H_2-receptor antagonists or antacids should be considered for women who receive opioids or who have or develop risk factors that make a general anaesthetic more likely. **[2007]**

1.7.6 Inform the woman that she may drink during established labour and that isotonic drinks may be more beneficial than water. **[2007]**

1.7.7 Inform the woman that she may eat a light diet in established labour unless she has received opioids or she develops risk factors that make a general anaesthetic more likely. **[2007]**

1.8 Pain relief in labour: non-regional

Attitudes to pain and pain relief in childbirth

1.8.1 Healthcare professionals should think about how their own values and beliefs inform their attitude to coping with pain in labour and ensure their care supports the woman's choice. **[2007]**

Pain-relieving strategies

1.8.2 If a woman chooses to use breathing and relaxation techniques in labour, support her in this choice. **[2007]**

1.8.3 If a woman chooses to use massage techniques in labour that have been taught to birth companions, support her in this choice. **[2007]**

[6] Please note that the NICE standing committee is reviewing evidence on the effectiveness of midwife-led continuity models compared with other models of care (publication expected 16 November 2016; see the guideline's page on the NICE website).

1.8.4 Offer the woman the opportunity to labour in water for pain relief. **[2007]**

1.8.5 For women labouring in water, monitor the temperature of the woman and the water hourly to ensure that the woman is comfortable and not becoming pyrexial. The temperature of the water should not be above 37.5°C. **[2007]**

1.8.6 Keep baths and birthing pools clean using a protocol agreed with the microbiology department and, in the case of birthing pools, in accordance with the manufacturer's guidelines. **[2007]**

1.8.7 Do not use injected water papules. **[2007]**

1.8.8 Do not offer acupuncture, acupressure or hypnosis, but do not prevent women who wish to use these techniques from doing so. **[2007]**

1.8.9 Support the playing of music of the woman's choice in labour. **[2007]**

Non-pharmacological analgesia

1.8.10 Do not offer transcutaneous electrical nerve stimulation (TENS) to women in established labour. **[2007]**

Inhalational analgesia

1.8.11 Ensure that Entonox (a 50:50 mixture of oxygen and nitrous oxide) is available in all birth settings as it may reduce pain in labour, but inform the woman that it may make her feel nauseous and light-headed. **[2007]**

Intravenous and intramuscular opioids

1.8.12 Ensure that pethidine, diamorphine or other opioids are available in all birth settings. Inform the woman that these will provide limited pain relief during labour and may have significant side effects for both her (drowsiness, nausea and vomiting) and her baby

(short-term respiratory depression and drowsiness which may last several days). **[2007]**

1.8.13 Inform the woman that pethidine, diamorphine or other opioids may interfere with breastfeeding. **[2007]**

1.8.14 If an intravenous or intramuscular opioid is used, also administer an antiemetic. **[2007]**

1.8.15 Women should not enter water (a birthing pool or bath) within 2 hours of opioid administration or if they feel drowsy. **[2007]**

1.9 Pain relief in labour: regional analgesia

Information about regional analgesia

1.9.1 If a woman is contemplating regional analgesia, talk with her about the risks and benefits and the implications for her labour, including the arrangements and time involved for transfer of care to an obstetric unit if she is at home or in a midwifery unit (follow the general principles for transfer of care described in section 1.6). **[2007, amended 2014]**

1.9.2 Provide information about epidural analgesia, including the following:

- It is available only in obstetric units.
- It provides more effective pain relief than opioids.
- It is not associated with long-term backache.
- It is not associated with a longer first stage of labour or an increased chance of a caesarean birth.
- It is associated with a longer second stage of labour and an increased chance of vaginal instrumental birth.
- It will be accompanied by a more intensive level of monitoring and intravenous access, and so mobility may be reduced. **[2007, amended 2014]**

Timing of regional analgesia

1.9.3 If a woman in labour asks for regional analgesia, comply with her request. This includes women in severe pain in the latent first stage of labour. **[2007]**

Care and observations for women with regional analgesia

1.9.4 Always secure intravenous access before starting regional analgesia. **[2007]**

1.9.5 Preloading and maintenance fluid infusion need not be administered routinely before establishing low-dose epidural analgesia and combined spinal–epidural analgesia. **[2007]**

1.9.6 Undertake the following additional observations for women with regional analgesia:

- During establishment of regional analgesia or after further boluses (10 ml or more of low-dose solutions), measure blood pressure every 5 minutes for 15 minutes.
- If the woman is not pain-free 30 minutes after each administration of local anaesthetic/opioid solution, recall the anaesthetist.
- Assess the level of the sensory block hourly. **[2007]**

1.9.7 Encourage women with regional analgesia to move and adopt whatever upright positions they find comfortable throughout labour. **[2007]**

1.9.8 Once established, continue regional analgesia until after completion of the third stage of labour and any necessary perineal repair. **[2007]**

1.9.9 Upon confirmation of full cervical dilatation in a woman with regional analgesia, unless the woman has an urge to push or the baby’s head is visible, pushing should be delayed for at least

1 hour and longer if the woman wishes, after which actively encourage her to push during contractions. **[2007]**

1.9.10 After diagnosis of full dilatation in a woman with regional analgesia, agree a plan with the woman in order to ensure that birth will have occurred within 4 hours regardless of parity. **[2007]**

1.9.11 Do not routinely use oxytocin in the second stage of labour for women with regional analgesia. **[2007]**

1.9.12 Perform continuous cardiotocography for at least 30 minutes during establishment of regional analgesia and after administration of each further bolus of 10 ml or more. **[2007, amended 2014]**

Establishing and maintaining regional analgesia

1.9.13 Use either epidural or combined spinal–epidural analgesia for establishing regional analgesia in labour. **[2007]**

1.9.14 If rapid analgesia is required, use combined spinal–epidural analgesia. **[2007]**

1.9.15 Establish combined spinal–epidural analgesia with bupivacaine and fentanyl. **[2007]**

1.9.16 Establish epidural analgesia with a low-concentration local anaesthetic and opioid solution with, for example, 10–15 ml of 0.0625–0.1% bupivacaine with 1–2 micrograms per ml fentanyl. The initial dose of local anaesthetic plus opioid is essentially a test dose, so administer cautiously to ensure that inadvertent intrathecal injection has not occurred. **[2007]**

1.9.17 Use low-concentration local anaesthetic and opioid solutions (0.0625–0.1% bupivacaine or equivalent combined with 2.0 micrograms per ml fentanyl) for maintaining epidural analgesia in labour. **[2007]**

1.9.18 Do not use high concentrations of local anaesthetic solutions (0.25% or above of bupivacaine or equivalent) routinely for either establishing or maintaining epidural analgesia. **[2007]**

1.9.19 Either patient-controlled epidural analgesia or intermittent bolus given by healthcare professionals are the preferred modes of administration for maintenance of epidural analgesia. **[2007]**

1.10 Monitoring during labour

Measuring fetal heart rate

1.10.1 Do not offer cardiotocography to low-risk women in established labour. **[new 2017]**

1.10.2 Offer intermittent auscultation of the fetal heart rate to low-risk women in established first stage of labour in all birth settings:

- Use either a Pinard stethoscope or Doppler ultrasound.
- Carry out intermittent auscultation immediately after a contraction for at least 1 minute, at least every 15 minutes, and record it as a single rate.
- Record accelerations and decelerations if heard.
- Palpate the maternal pulse to differentiate between the two heart rates. **[new 2017]**

1.10.3 If there is a rising baseline fetal heart rate or decelerations are heard, actions should include:

- carrying out intermittent auscultation more frequently, for example for 3 consecutive contractions initially
- thinking about the whole clinical picture, including the woman's position and hydration, the strength and frequency of contractions and maternal observations.

If a rising baseline or decelerations are confirmed, further actions should include:

- summoning help
- transferring the woman to obstetric-led care if needed, provided that it is safe and appropriate to do so (follow the general principles for transfer of care described in section 1.6)
- offering continuous cardiotocography, and explaining to the woman and her birth companion(s) why it is being offered. **[new 2017]**

1.10.4 Offer continuous cardiotocography if any of the following risk factors are present at initial assessment or arise during labour:

- maternal pulse over 120 beats/minute on 2 occasions 30 minutes apart
- temperature of 38°C or above on a single reading, or 37.5°C or above on 2 consecutive occasions 1 hour apart
- suspected chorioamnionitis or sepsis
- pain reported by the woman that differs from the pain normally associated with contractions
- the presence of significant meconium (as defined in recommendation 1.5.2)
- fresh vaginal bleeding that develops in labour
- severe hypertension: a single reading of either diastolic blood pressure of 110 mmHg or more or systolic blood pressure of 160 mmHg or more, measured between contractions (see the NICE guideline on hypertension in pregnancy)
- hypertension: either diastolic blood pressure of 90 mmHg or more or systolic blood pressure of 140 mmHg or more on 2 consecutive readings taken 30 minutes apart, measured between contractions
- a reading of 2+ of protein on urinalysis and a single reading of either raised diastolic blood pressure (90 mmHg or more) or raised systolic blood pressure (140 mmHg or more)
- confirmed delay in the first or second stage of labour (see recommendations 1.12.14, 1.13.3 and 1.13.4)

- oxytocin use. **[new 2017]**

1.10.5 Do not offer continuous cardiotocography to women who have non-significant meconium if there are no other risk factors. **[new 2017]**

1.10.6 Do not regard amniotomy alone for suspected delay in the established first stage of labour as an indication to start continuous cardiotocography. **[2007, amended 2014]**

1.10.7 Address any concerns that the woman has about continuous cardiotocography, and give her and her birth companion(s) the following information:

- Explain that continuous cardiotocography is used to monitor the baby's heartbeat and the labour contractions.
- Explain that it may restrict her mobility, particularly if conventional monitoring is used.
- Give details of the types of findings that may occur. Explain that a trace with normal features is reassuring and indicates that the baby is coping well with labour.
- Explain that changes to the baby’s heart rate pattern during labour are common and do not necessarily cause concern.
- If the trace is not normal (that is, it suggests a medium or high risk of fetal acidosis), explain that there is less certainty about the condition of the baby and that continuous monitoring will be advised.
- Explain that decisions about her care during labour and birth will be based on an assessment of several factors, including her preferences, her condition and that of her baby, as well as the findings from cardiotocography. **[new 2017]**

1.10.8 If continuous cardiotocography has been used because of concerns arising from intermittent auscultation but there are no non-reassuring or abnormal features (see table 10) on the trace after 20 minutes, return to intermittent auscultation. **[2017]**

Telemetry

1.10.9 Offer telemetry to any woman who needs continuous cardiotocography during labour. **[2014]**

Interpretation of cardiotocograph traces

1.10.10 Use tables 10 and 11 to define and interpret cardiotocograph traces and to guide the management of labour for women who are having continuous cardiotocography. These tables include and summarise individual recommendations about fetal monitoring (1.10.1 to 1.10.35), fetal stimulation (1.10.38 to 1.10.39), fetal blood sampling (1.10.40 to 1.10.56) and intrauterine resuscitation (1.10.36 to 1.10.37) in this guideline. **[new 2017]**

Table 10 Description of cardiotocograph trace features

Overall care

- Do not make any decision about a woman's care in labour on the basis of cardiotocography (CTG) findings alone.
- Take into account any antenatal and intrapartum risk factors, the current wellbeing of the woman and unborn baby and the progress of labour when interpreting the CTG trace.
- Ensure that the focus of care remains on the woman rather than the CTG trace.
- Remain with the woman in order to continue providing one-to-one support.
- Keep the woman and her birth companion(s) informed about what is happening.
- Make a documented systematic assessment of the condition of the woman and the unborn baby (including CTG findings) hourly, or more frequently if there are concerns.

Principles for intrapartum CTG trace interpretation

- When reviewing the CTG trace, assess and document contractions and all 4 features of fetal heart rate: baseline; baseline variability; presence or absence of decelerations, and characteristics if present; presence of accelerations.
- If it is difficult to categorise or interpret a CTG trace, obtain senior midwifery or senior obstetric input.

Accelerations

- The presence of fetal heart rate accelerations, even with reduced baseline variability, is generally a sign that the baby is healthy.

Description	**Feature**		
	Baseline (beats/ minute)	**Baseline variability (beats/ minute)**	**Deceleration**
Normal/ reassuring	110 to 160*	5–25	None or early Variable decelerations without any concerning characteristics (see below) for less than 90 minutes
Non-reassuring	100 to 109* OR 161 to 180	Less than 5 for 30–50 minutes OR More than 25 for up to 30 minutes	Variable decelerations without any concerning characteristics for 90 minutes or more
Abnormal	Above 180 OR Below 100	Less than 5 for more than 50 minutes OR More than 25 for more than 30 minutes	Variable decelerations for 30 minutes (or less if any concerning maternal or fetal clinical features) in over 50% of contractions, that have any of the following concerning characteristics: • lasting longer than 60 seconds • reduced variability within the deceleration • gradual return to baseline after

		OR Sinusoidal	contraction • failure to return to baseline • biphasic (W) shape • no shouldering. OR Late decelerations for 30 minutes (or less if any concerning maternal or fetal clinical features) in over 50% of contractions OR Bradycardia or a single prolonged deceleration (below 100 beats/minute) lasting 3 minutes or more.
Abbreviation: CTG, cardiotocography. * Although a baseline fetal heart rate between 100 and 109 beats/minute is a non-reassuring feature, if it is associated with normal baseline variability and no variable or late decelerations regard it as normal and do not take further action.			

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1 **Table 11 Management based on interpretation of cardiotocograph traces**

Category	Definition	Management
CTG suggests a low risk of fetal acidosis	All features are normal/ reassuring	• Continue CTG (unless it was started because of concerns arising from intermittent auscultation and there are no ongoing risk factors; see recommendation 1.4.10) and usual care • Keep the woman and her birth companion(s) informed about what is happening
CTG suggests a medium risk of fetal acidosis	1 non-reassuring feature AND 2 normal/ reassuring features	• Be aware of possible underlying causes, such as hypotension and uterine hyperstimulation • Perform a full set of maternal observations • Start one or more conservative measures (see recommendation 1.10.34) • Inform the senior midwife or an obstetrician • Document a plan for reviewing the whole clinical picture and the cardiotocography findings • Keep the woman and her birth companion(s) informed about what is happening
CTG suggests a high risk of fetal acidosis	1 abnormal feature OR 2 non-reassuring features	• Inform the senior midwife and an obstetrician • Exclude acute events (for example, placental abruption, cord prolapse or uterine rupture) • Be aware of possible underlying causes, such as hypotension and uterine hyperstimulation • Start one or more conservative measures (see recommendation 1.10.34) • Keep the woman and her birth companion(s) informed about what is happening • If the cardiotocograph trace still suggests a high risk of fetal acidosis 15 minutes after starting conservative measures, consider fetal blood sampling or expedite the birth, in discussion with the woman
CTG indicates need for urgent intervention	Bradycardia or a single prolonged deceleration with baseline below 100 beats/minute, persisting for 3 minutes or more	• Urgently seek obstetric help • If there has been an acute event (for example, placental abruption, cord prolapse or uterine rupture), expedite the birth • Correct any hypotension or uterine hyperstimulation • Start 1 or more conservative measures (see recommendation 1.10.34) • Make preparations for an urgent birth • Keep the woman and her birth companion(s) informed about what is happening • Expedite the birth if the bradycardia persists for 9 minutes. • If the fetal heart rate recovers before 9 minutes, reassess any decision to expedite the birth, in

		discussion with the woman
Abbreviation: CTG, cardiotocography.		

Overall care

1.10.11 If continuous cardiotocography is needed:

- ensure that the focus of care remains on the woman rather than the cardiotocograph trace
- remain with the woman in order to continue providing one-to-one support
- encourage and help the woman to be as mobile as possible and to change position as often as she wishes
- monitor the condition of the woman and the baby, and take prompt action if required
- differentiate between the maternal and fetal heart rates using a Pinard stethoscope or Doppler ultrasound while palpating the maternal pulse
- ensure that the cardiotocograph trace is of high quality, and think about other options if this is not the case
- if it is difficult to categorise or interpret a cardiotocograph trace, obtain senior midwifery or senior obstetric input. **[new 2017]**

1.10.12 When reviewing the cardiotocograph trace, assess and document contractions and all 4 features of fetal heart rate:

- baseline rate
- baseline variability
- presence or absence of decelerations, and concerning characteristics if present (see recommendation 1.10.24)
- presence of accelerations. **[new 2017]**

1.10.13 Do not make any decision about a woman's care in labour on the basis of cardiotocography findings alone. **[2017]**

1.10.14 Any decision about changes to a woman's care in labour when she is on a cardiotocograph monitor should also take into account the following:

- her preferences
- her report of how she is feeling
- her report of the baby's movements
- assessment of her wellbeing and behaviour
- maternal observations, including temperature, blood pressure and pulse
- whether there is meconium or blood in the amniotic fluid
- any signs of vaginal bleeding
- any medication she is taking
- the frequency of contractions
- the stage and progress of labour
- her parity
- the fetal response to scalp stimulation if performed (see recommendations 1.10.38 to 1.10.39)
- the results of fetal blood sampling if undertaken (see recommendation 1.10.47). **[new 2017]**

1.10.15 Supplement ongoing care with a documented systematic assessment of the condition of the woman and unborn baby (including any cardiotocography findings) every hour. If there are concerns about cardiotocography findings, undertake this assessment more frequently. **[2017]**

Baseline fetal heart rate

1.10.16 Use the following categorisations for baseline fetal heart rate:

- normal/reassuring:
  - 110–160 beats/minute
- non-reassuring:
  - 100–109 beats/minute (but see recommendation 1.10.17)

  - 161–180 beats/minute
- abnormal:
  - below 100 beats/minute (but see recommendation 1.10.17)
- above 180 beats/minute. **[new 2017]**

1.10.17 Take the following into account when assessing baseline fetal heart rate:

- differentiate between fetal and maternal heart rates
- baseline fetal heart rate will usually be between 110 and 160 beats/minute
- although a baseline fetal heart rate between 100 and 109 beats/minute is a non-reassuring feature, if it is associated with normal baseline variability and no variable or late decelerations regard it as normal and do not take further action
- a stable baseline fetal heart rate between 90 and 99 beats/minute with normal baseline variability and no variable or late decelerations may be a normal variation; obtain a senior midwifery or senior obstetric opinion. **[new 2017]**

Baseline variability

1.10.18 Use the following categorisations for fetal heart rate baseline variability:

- normal/reassuring:
  - 5–25 beats/minute
- non-reassuring:
  - less than 5 beats/minute for 30–50 minutes
  - more than 25 beats/minute for up to 30 minutes
- abnormal:
  - less than 5 beats/minute for more than 50 minutes
  - more than 25 beats/minute for more than 30 minutes
  - sinusoidal. **[new 2017]**

1.10.19 Take the following into account when assessing fetal heart rate baseline variability:

- baseline variability will usually be between 5 and 25 beats/minute
- intermittent periods of reduced baseline variability are normal, especially during periods of quiescence ('sleep'). **[new 2017]**

Decelerations

1.10.20 When describing decelerations in fetal heart rate, specify:

- their timing in relation to the peaks of the contractions
- the duration of the individual decelerations
- whether or not the fetal heart rate returns to baseline
- how long they have been present
- whether they occur with over 50% of contractions.
- the presence or absence of a biphasic (W) shape
- the presence or absence of shouldering
- the presence or absence of reduced variability within the deceleration. **[new 2017]**

1.10.21 Describe decelerations as 'early', 'variable' or 'late'. Do not use the terms 'typical' and 'atypical' because they can cause confusion. **[2017]**

1.10.22 Use the following categorisations for decelerations in fetal heart rate:

- normal/reassuring:
  - no decelerations
  - early decelerations
  - variable decelerations without any concerning characteristics (see recommendation 1.10.24) for less than 90 minutes
- non-reassuring:

  - variable decelerations without any concerning characteristics for 90 minutes or more
- abnormal:
  - variable decelerations with any concerning characteristics for 30 minutes (or less if there are any concerning maternal or fetal clinical risk factors, such as vaginal bleeding or significant meconium) in over 50% of contractions
  - late decelerations for 30 minutes (or less if there are any concerning maternal or fetal risk factors, such as vaginal bleeding or significant meconium) in over 50% of contractions
  - bradycardia or a single prolonged deceleration (below 100 beats/minute) lasting 3 minutes or more. **[new 2017]**

1.10.23 Take the following into account when assessing decelerations in fetal heart rate:

- early decelerations are uncommon, benign and usually associated with head compression
- early decelerations with no non-reassuring or abnormal features on the cardiotocograph trace should not prompt further action. **[2017]**

1.10.24 Regard the following as concerning characteristics of variable decelerations:

- lasting more than 60 seconds
- reduced baseline variability within the deceleration
- gradual return to baseline after a contraction
- failure to return to baseline
- biphasic (W) shape
- no shouldering. **[new 2017]**

1.10.25 If variable decelerations with no concerning characteristics (see recommendation 1.10.24) are observed:

- be aware that these are very common, can be a normal feature in an otherwise uncomplicated labour and birth, and are usually a result of cord compression
- ask the woman to change position or mobilise. **[new 2017]**

1.10.26 Take into account that the longer and later the individual decelerations, the higher the risk of fetal acidosis (particularly if the decelerations are accompanied by tachycardia and/or reduced baseline variability). **[new 2017]**

Accelerations

1.10.27 Take the following into account when assessing accelerations in fetal heart rate:

- the presence of fetal heart rate accelerations, even with reduced baseline variability, is generally a sign that the baby is healthy
- the absence of accelerations on a cardiotocograph trace with no non-reassuring or abnormal features (see table 10) does not indicate fetal acidosis. **[new 2017]**

Categorisation of traces

1.10.28 Categorise cardiotocography traces as follows:

- low risk of fetal acidosis: all features are normal/reassuring (see table 10)
- medium risk of fetal acidosis: 1 non-reassuring feature and 2 normal/reassuring features (but note that if accelerations are present, acidosis is unlikely)
- high risk of fetal acidosis:
  - 1 abnormal feature **or**
  - 2 non-reassuring features. **[new 2017]**

Management

1.10.29 If there is a bradycardia or a single prolonged deceleration with the fetal heart rate below 100 beats/minute for 3 minutes or more:

- urgently seek obstetric help
- if there has been an acute event (for example, placental abruption, cord prolapse or uterine rupture), expedite the birth
- correct any hypotension or uterine hyperstimulation
- start one or more conservative measures (see recommendation 1.10.34)
- make preparations for an urgent birth
- keep the woman and her birth companion(s) informed about what is happening
- expedite the birth (see recommendations 1.13.34 to 1.13.37) if the bradycardia persists for 9 minutes.

If the fetal heart rate recovers at any time up to 9 minutes, reassess any decision to expedite the birth, in discussion with the woman. **[new 2017]**

1.10.30 If the cardiotocograph trace suggests a high risk of fetal acidosis:

- inform the senior midwife and an obstetrician
- exclude acute events (for example, placental abruption, cord prolapse or uterine rupture)
- be aware of possible underlying causes, such as hypotension and uterine hyperstimulation
- start one or more conservative measures (see recommendation 1.10.34).
- keep the woman and her birth companion(s) informed about what is happening. **[new 2017]**

1.10.31 If the cardiotocograph trace still suggests a high risk of fetal acidosis 15 minutes after starting conservative measures:

- consider fetal blood sampling **or**
- expedite the birth.

Take the woman’s preferences into account. **[new 2017]**

1.10.32 If the cardiotocograph trace suggests a medium risk of fetal acidosis:

- be aware of possible underlying causes, such as hypotension and uterine hyperstimulation
- perform a full set of maternal observations
- start one or more conservative measures (see recommendation 1.10.34)
- inform the senior midwife or an obstetrician
- document a plan for reviewing the whole clinical picture and the cardiotocography findings
- keep the woman and her birth companion(s) informed about what is happening. **[new 2017]**

1.10.33 If the cardiotocograph trace suggests a low risk of fetal acidosis:

- continue cardiotocography (unless it was started because of concerns arising from intermittent auscultation and there are no ongoing risk factors; see recommendation 1.4.10) and usual care
- keep the woman and her birth companion(s) informed about what is happening. **[new 2017]**

Conservative measures

1.10.34 If there are any concerns about the baby's wellbeing, be aware of the possible underlying causes and start one or more of the following conservative measures based on an assessment of the most likely cause(s):

- encourage the woman to mobilise or adopt an alternative position (and to avoid being supine)
- offer oral or intravenous fluids
- reduce contraction frequency by:
  - reducing or stopping oxytocin if it is being used and/or

- offering a tocolytic drug (a suggested regimen is subcutaneous terbutaline 0.25 mg). **[new 2017]**

1.10.35 Inform the senior midwife or an obstetrician whenever conservative measures are implemented. **[new 2017]**

1.10.36 Do not use maternal facial oxygen therapy for intrauterine fetal resuscitation, because it may harm the baby (but it can be used where it is administered for maternal indications such as hypoxia or as part of preoxygenation before a potential anaesthetic). **[2014]**

Intrauterine resuscitation

1.10.37 Do not offer amnioinfusion for intrauterine fetal resuscitation. **[2014]**

Fetal stimulation

1.10.38 If the cardiotocograph trace suggests a high risk of fetal acidosis, offer digital fetal scalp stimulation. If this leads to an acceleration in fetal heart rate, only continue with fetal blood sampling if the risk of fetal acidosis remains high (see recommendation 1.10.28). **[new 2017]**

1.10.39 If digital fetal scalp stimulation (during vaginal examination) leads to an acceleration in fetal heart rate, regard this as a reassuring feature. Take this into account when reviewing the whole clinical picture (see recommendation 1.10.28). **[new 2017]**

Fetal blood sampling

1.10.40 Do not carry out fetal blood sampling if:

- there is an acute event (for example, placental abruption, cord prolapse or uterine rupture) or
- the whole clinical picture indicates that the birth needs to be expedited or contraindications are present, including risk of maternal-to-fetal transmission of infection or risk of fetal bleeding disorders. **[new 2017]**

1.10.41 Before carrying out or repeating fetal blood sampling, start conservative measures and carry out digital fetal scalp stimulation (see recommendations 1.10.34, 1.10.38 and 1.10.39). Only continue with fetal blood sampling if the risk of fetal acidosis remains high (see recommendation 1.10.28). **[new 2017]**

1.10.42 When considering fetal blood sampling, take into account the whole clinical picture and the woman's preferences. **[new 2017]**

1.10.43 When considering fetal blood sampling, explain the following to the woman and her birth companion(s):

- Why the test is being considered and other options.
- The blood sample will be used to measure the level of acid in the baby's blood, to see how well the baby is coping with labour.
- The procedure will require her to have a vaginal examination using a device similar to a speculum.
- A sample of blood will be taken from the baby's head by making a small scratch on the baby's scalp. This will heal quickly after birth, but there is a small risk of infection.
- What the different outcomes of the test may be (normal, borderline and abnormal) and the actions that will follow each result.
- If a fetal blood sample cannot be obtained but there are fetal heart accelerations in response to the procedure, this is reassuring and in these circumstances urgent birth may not be needed.
- If a fetal blood sample cannot be obtained and the cardiotocograph trace has not improved, birth should be expedited.
- A caesarean section or instrumental birth (forceps or ventouse) may be needed, depending on the results of the procedure. **[new 2017]**

1.10.44 Do not take a fetal blood sample immediately after a prolonged deceleration. **[new 2017]**

1.10.45 Take fetal blood samples with the woman in the left-lateral position. **[2017]**

1.10.46 Measure either pH or lactate when performing fetal blood sampling. **[new 2017]**

1.10.47 Use the classification of fetal blood sample results shown in table 12. **[2017]**

Table 12. Classification of fetal blood sample results

pH	Lactate (mmol/l)	Interpretation
≥ 7.25	≤ 4.1	Normal
7.21–7.24	4.2–4.8	Borderline
≤ 7.20	≥ 4.9	Abnormal

1.10.48 Interpret fetal blood sample results taking into account:

- any previous pH or lactate measurement and
- the clinical features of the woman and baby, such as rate of progress in labour. **[new 2017]**

1.10.49 If the fetal blood sample result is abnormal:

- inform a senior obstetrician and the neonatal team and
- expedite the birth. **[new 2017]**

1.10.50 If the fetal blood sample result is borderline and there are no accelerations in response to scalp stimulation, consider taking a second fetal blood sample no more than 30 minutes later if this is still indicated by the cardiotocograph trace. **[new 2017]**

1.10.51 If the fetal blood sample result is normal and there are no accelerations in response to scalp stimulation, consider taking a second fetal blood sample no more than 1 hour later if this is still indicated by the cardiotocograph trace. **[new 2017]**

1.10.52 Be aware that urgent birth may still be indicated for women who have sepsis or significant meconium even if they have a normal fetal blood sample result. **[new 2017]**

1.10.53 Discuss with the consultant obstetrician if a third fetal blood sample is thought to be needed. **[2017]**

When a fetal blood sample cannot be obtained

1.10.54 If fetal blood sampling is attempted and a sample cannot be obtained, but the associated scalp stimulation results in a fetal heart rate acceleration, decide whether to continue the labour or expedite the birth in light of the clinical circumstances and in discussion with a senior obstetrician and the woman. **[new 2017]**

1.10.55 Discuss with the consultant obstetrician if a fetal blood sample cannot be obtained and there are no accelerations in response to scalp stimulation. **[new 2017]**

1.10.56 If fetal blood sampling is attempted but a sample cannot be obtained and there has been no improvement in the cardiotocograph trace, expedite the birth (see recommendations 1.13.34 to 1.13.37). **[new 2017]**

Record keeping

1.10.57 To ensure accurate record keeping for cardiotocography:

- make sure that date and time clocks on the cardiotocograph monitor are set correctly
- label traces with the woman's name, date of birth and hospital number or NHS number, the date and the woman's pulse at the start of monitoring. **[2014]**

1.10.58 Individual units should develop a system for recording relevant intrapartum events (for example, vaginal examination, fetal blood sampling and siting of an epidural) in standard notes and/or on the cardiotocograph trace. **[2014]**

1.10.59 Keep cardiotocograph traces for 25 years and, if possible, store them electronically. **[2007, amended 2014]**

1.10.60 In cases where there is concern that the baby may experience developmental delay, photocopy cardiotocograph traces and store them indefinitely in case of possible adverse outcomes. **[2007, amended 2014]**

1.10.61 Ensure that tracer systems are available for all cardiotocograph traces if stored separately from the woman's records. **[2007, amended 2014]**

1.10.62 Develop tracer systems to ensure that cardiotocograph traces removed for any purpose (such as risk management or for teaching purposes) can always be located. **[2007, amended 2014]**

1.11 Prelabour rupture of membranes at term

1.11.1 Do not carry out a speculum examination if it is certain that the membranes have ruptured. **[2007]**

1.11.2 If it is uncertain whether prelabour rupture of the membranes has occurred, offer the woman a speculum examination to determine whether the membranes have ruptured. Avoid digital vaginal examination in the absence of contractions. **[2007]**

1.11.3 Advise women presenting with prelabour rupture of the membranes at term that:

- the risk of serious neonatal infection is 1%, rather than 0.5% for women with intact membranes
- 60% of women with prelabour rupture of the membranes will go into labour within 24 hours

- induction of labour[7] is appropriate approximately 24 hours after rupture of the membranes. **[2007]**

1.11.4 Until the induction is started or if expectant management beyond 24 hours is chosen by the woman:

- do not offer lower vaginal swabs and measurement of maternal C-reactive protein
- to detect any infection that may be developing, advise the woman to record her temperature every 4 hours during waking hours and to report immediately any change in the colour or smell of her vaginal loss
- inform the woman that bathing or showering is not associated with an increase in infection, but that having sexual intercourse may be. **[2007]**

1.11.5 Assess fetal movement and heart rate at initial contact and then every 24 hours after rupture of the membranes while the woman is not in labour, and advise the woman to report immediately any decrease in fetal movements. **[2007]**

1.11.6 If labour has not started 24 hours after rupture of the membranes, advise the woman to give birth where there is access to neonatal services and to stay in hospital for at least 12 hours after the birth. **[2007]**

1.12 First stage of labour

See recommendation 1.3.1 for the definition of the first stage of labour.

1.12.1 Do not offer or advise clinical intervention if labour is progressing normally and the woman and baby are well. **[2007]**

[7] The care of women who have their labour induced is covered by the NICE guideline on induction of labour.

1.12.2 In all stages of labour, women who have left the normal care pathway because of the development of complications can return to it if/when the complication is resolved. **[2007]**

Duration of the first stage

1.12.3 Inform women that, while the length of established first stage of labour varies between women:

- first labours last on average 8 hours and are unlikely to last over 18 hours
- second and subsequent labours last on average 5 hours and are unlikely to last over 12 hours. **[2007]**

Observations during the established first stage

1.12.4 Do not routinely use verbal assessment using a numerical pain score. **[2007]**

1.12.5 Use a pictorial record of labour (partogram) once labour is established. **[2007]**

1.12.6 Where the partogram includes an action line, use the World Health Organization recommendation of a 4-hour action line[8]. **[2007]**

1.12.7 Record the following observations during the first stage of labour:

- half-hourly documentation of frequency of contractions
- hourly pulse
- 4-hourly temperature and blood pressure
- frequency of passing urine
- offer a vaginal examination (see recommendation 1.4.5) 4-hourly or if there is concern about progress or in response to the woman's wishes (after abdominal palpation and assessment of vaginal loss). **[2007]**

[8] Anonymous (1994) World Health Organization partograph in management of labour. World Health Organization Maternal Health and Safe Motherhood Programme. Lancet 343: 1399–404. See also the WHO Multicountry Survey on Maternal and Newborn Health

If any of the indications for transfer are met (see recommendation 1.5.1), transfer the woman to obstetric-led care. Follow the general principles for transfer of care described in section 1.6. **[2014]**

1.12.8 Give ongoing consideration to the woman's emotional and psychological needs, including her desire for pain relief. **[2007]**

1.12.9 Encourage the woman to communicate her need for analgesia at any point during labour. **[2007]**

Possible routine interventions in the first stage

1.12.10 Do not routinely offer the package known as active management of labour (one-to-one continuous support; strict definition of established labour; early routine amniotomy; routine 2-hourly vaginal examination; oxytocin if labour becomes slow). **[2007]**

1.12.11 In normally progressing labour, do not perform amniotomy routinely. **[2007]**

1.12.12 Do not use combined early amniotomy with use of oxytocin routinely. **[2007]**

Delay in the first stage

1.12.13 If delay in the established first stage is suspected, take the following into account:

- parity
- cervical dilatation and rate of change
- uterine contractions
- station and position of presenting part
- the woman's emotional state
- referral to the appropriate healthcare professional.

Offer the woman support, hydration, and appropriate and effective pain relief. **[2007]**

1.12.14 If delay in the established first stage is suspected, assess all aspects of progress in labour when diagnosing delay, including:

- cervical dilatation of less than 2 cm in 4 hours for first labours
- cervical dilatation of less than 2 cm in 4 hours or a slowing in the progress of labour for second or subsequent labours
- descent and rotation of the baby's head
- changes in the strength, duration and frequency of uterine contractions. **[2007]**

If delay is diagnosed, transfer the woman to obstetric-led care. Follow the general principles for transfer of care described in section 1.6. **[2014]**

1.12.15 If delay in the established first stage of labour is suspected, amniotomy should be considered for all women with intact membranes, after explanation of the procedure and advice that it will shorten her labour by about an hour and may increase the strength and pain of her contractions. **[2007]**

1.12.16 Whether or not a woman has agreed to an amniotomy, advise all women with suspected delay in the established first stage of labour to have a vaginal examination 2 hours later, and diagnose delay if progress is less than 1 cm. **[2007]**

1.12.17 For women with intact membranes in whom delay in the established first stage of labour is confirmed, advise the woman to have an amniotomy, and to have a repeat vaginal examination 2 hours later whether her membranes are ruptured or intact. **[2007]**

1.12.18 For all women with confirmed delay in the established first stage of labour:

- transfer the woman to obstetric-led care for an obstetric review and a decision about management options, including the use of

oxytocin (follow the general principles for transfer of care described in section 1.6) **[2014]**

- explain to her that using oxytocin after spontaneous or artificial rupture of the membranes will bring forward the time of birth but will not influence the mode of birth or other outcomes. **[2007]**

1.12.19 For a multiparous woman with confirmed delay in the established first stage of labour, an obstetrician should perform a full assessment, including abdominal palpation and vaginal examination, before a decision is made about using oxytocin. **[2007]**

1.12.20 Offer all women with delay in the established first stage of labour support and effective pain relief. **[2007]**

1.12.21 Inform the woman that oxytocin will increase the frequency and strength of her contractions and that its use will mean that her baby should be monitored continuously. Offer the woman an epidural before oxytocin is started. **[2007]**

1.12.22 If oxytocin is used, ensure that the time between increments of the dose is no more frequent than every 30 minutes. Increase oxytocin until there are 4–5 contractions in 10 minutes. (See also recommendation 1.10.4.) **[2007]**

1.12.23 Advise the woman to have a vaginal examination 4 hours after starting oxytocin in established labour:

- If cervical dilatation has increased by less than 2 cm after 4 hours of oxytocin, further obstetric review is required to assess the need for caesarean section.
- If cervical dilatation has increased by 2 cm or more, advise 4-hourly vaginal examinations. **[2007]**

1.13 Second stage of labour

Definition of the second stage

1.13.1 For the purposes of this guideline, use the following definitions of labour:

- Passive second stage of labour:
  - the finding of full dilatation of the cervix before or in the absence of involuntary expulsive contractions.
- Onset of the active second stage of labour:
  - the baby is visible
  - expulsive contractions with a finding of full dilatation of the cervix or other signs of full dilatation of the cervix
  - active maternal effort following confirmation of full dilatation of the cervix in the absence of expulsive contractions. **[2007]**

Observations during the second stage

1.13.2 Carry out the following observations in the second stage of labour, record all observations on the partogram and assess whether transfer of care may be needed (see recommendation 1.5.1) **[2007, amended 2014]**:

- half-hourly documentation of the frequency of contractions **[2007]**
- hourly blood pressure **[2007]**
- continued 4-hourly temperature **[2007]**
- frequency of passing urine **[2007]**
- offer a vaginal examination (see recommendation 1.4.5) hourly in the active second stage, or in response to the woman's wishes (after abdominal palpation and assessment of vaginal loss). **[2007]**

In addition:

- Continue to take the woman's emotional and psychological needs into account. **[2007]**
- Assess progress, which should include the woman's behaviour, the effectiveness of pushing and the baby's wellbeing, taking into account the baby's position and station at the onset of the second stage. These factors will assist in deciding the timing of further vaginal examination and any need for transfer to obstetric led care. **[2007, amended 2014]**
- Perform intermittent auscultation of the fetal heart rate immediately after a contraction for at least 1 minute, at least every 5 minutes. Palpate the woman's pulse every 15 minutes to differentiate between the two heart rates. **[2007, amended 2014]**
- Ongoing consideration should be given to the woman's position, hydration, coping strategies and pain relief throughout the second stage. **[2007]**

Duration of the second stage and definition of delay

1.13.3 For a nulliparous woman:

- birth would be expected to take place within 3 hours of the start of the active second stage in most women
- diagnose delay in the active second stage when it has lasted 2 hours and refer the woman to a healthcare professional trained to undertake an operative vaginal birth if birth is not imminent. **[2007]**

1.13.4 For a multiparous woman:

- birth would be expected to take place within 2 hours of the start of the active second stage in most women
- diagnose delay in the active second stage when it has lasted 1 hour and refer the woman to a healthcare professional trained to undertake an operative vaginal birth if birth is not imminent. **[2007]**

1.13.5 For a nulliparous woman, suspect delay if progress (in terms of rotation and/or descent of the presenting part) is inadequate after 1 hour of active second stage. Offer vaginal examination and then offer amniotomy if the membranes are intact. **[2007, amended 2014]**

1.13.6 For a multiparous woman, suspect delay if progress (in terms of rotation and/or descent of the presenting part) is inadequate after 30 minutes of active second stage. Offer vaginal examination and then offer amniotomy if the membranes are intact. **[2014]**

1.13.7 If full dilatation of the cervix has been confirmed in a woman without regional analgesia, but she does not get an urge to push, carry out further assessment after 1 hour. **[2007]**

Oxytocin in the second stage

1.13.8 Consideration should be given to the use of oxytocin, with the offer of regional analgesia, for nulliparous women if contractions are inadequate at the onset of the second stage. **[2007]**

The woman's position and pushing in the second stage

1.13.9 Discourage the woman from lying supine or semi-supine in the second stage of labour and encourage her to adopt any other position that she finds most comfortable. **[2007]**

1.13.10 Inform the woman that in the second stage she should be guided by her own urge to push. **[2007]**

1.13.11 If pushing is ineffective or if requested by the woman, offer strategies to assist birth, such as support, change of position, emptying of the bladder and encouragement. **[2007]**

Intrapartum interventions to reduce perineal trauma

1.13.12 Do not perform perineal massage in the second stage of labour. **[2007]**

1.13.13 Either the ‘hands on’ (guarding the perineum and flexing the baby’s head) or the ‘hands poised’ (with hands off the perineum and baby’s head but in readiness) technique can be used to facilitate spontaneous birth. **[2007]**

1.13.14 Do not offer lidocaine spray to reduce pain in the second stage of labour. **[2007]**

1.13.15 Do not carry out a routine episiotomy during spontaneous vaginal birth. **[2007]**

1.13.16 Inform any woman with a history of severe perineal trauma that her risk of repeat severe perineal trauma is not increased in a subsequent birth, compared with women having their first baby. **[2007]**

1.13.17 Do not offer episiotomy routinely at vaginal birth after previous third- or fourth-degree trauma. **[2007]**

1.13.18 In order for a woman who has had previous third- or fourth-degree trauma to make an informed choice, talk with her about the future mode of birth, encompassing:

- current urgency or incontinence symptoms
- the degree of previous trauma
- risk of recurrence
- the success of the repair undertaken
- the psychological effect of the previous trauma
- management of her labour. **[2007]**

1.13.19 Inform any woman with infibulated genital mutilation of the risks of difficulty with vaginal examination, catheterisation and application of fetal scalp electrodes. Inform her of the risks of delay in the second stage and spontaneous laceration together with the need for an anterior episiotomy and the possible need for defibulation in labour. **[2007]**

1.13.20 If an episiotomy is performed, the recommended technique is a mediolateral episiotomy originating at the vaginal fourchette and usually directed to the right side. The angle to the vertical axis should be between 45 and 60 degrees at the time of the episiotomy. **[2007]**

1.13.21 Perform an episiotomy if there is a clinical need, such as instrumental birth or suspected fetal compromise. **[2007]**

1.13.22 Provide tested effective analgesia before carrying out an episiotomy, except in an emergency because of acute fetal compromise. **[2007]**

Water birth

1.13.23 Inform women that there is insufficient high-quality evidence to either support or discourage giving birth in water. **[2007]**

Delay in the second stage

1.13.24 If there is delay in the second stage of labour, or if the woman is excessively distressed, support and sensitive encouragement and the woman's need for analgesia/anaesthesia are particularly important. **[2007]**

1.13.25 An obstetrician should assess a woman with confirmed delay in the second stage (after transfer to obstetric-led care, following the general principles for transfer of care described in section 1.6) before contemplating the use of oxytocin. **[2014]**

1.13.26 After initial obstetric assessment of a woman with delay in the second stage, maintain ongoing obstetric review every 15–30 minutes. **[2007]**

Instrumental birth and delayed second stage

1.13.27 Think about offering instrumental birth if there is concern about the baby's wellbeing or there is a prolonged second stage. **[2007]**

1.13.28 Recognise that, on rare occasions, the woman's need for help in the second stage may be an indication to assist by offering instrumental birth when supportive care has not helped. **[2007]**

1.13.29 The choice of instrument depends on a balance of clinical circumstance and practitioner experience. **[2007]**

1.13.30 Because instrumental birth is an operative procedure, advise the woman to have tested effective anaesthesia. **[2007]**

1.13.31 If a woman declines anaesthesia, offer a pudendal block combined with local anaesthetic to the perineum during instrumental birth. **[2007]**

1.13.32 If there is concern about fetal compromise, offer either tested effective anaesthesia or, if time does not allow this, a pudendal block combined with local anaesthetic to the perineum during instrumental birth. **[2007]**

1.13.33 Advise the woman to have a caesarean section if vaginal birth is not possible[9]. **[2007]**

Expediting birth

1.13.34 If the birth needs to be expedited for maternal or fetal reasons, assess both the risk to the baby and the safety of the woman. Assessments should include:

- the degree of urgency
- clinical findings on abdominal and vaginal examination
- choice of mode of birth (and whether to use forceps or ventouse if an instrumental birth is indicated)
- anticipated degree of difficulty, including the likelihood of success if instrumental birth is attempted
- location
- any time that may be needed for transfer to obstetric-led care

[9] See the NICE guideline on caesarean section

- the need for additional analgesia or anaesthesia
- the woman's preferences. **[2014]**

1.13.35 Talk with the woman and her birth companion(s) about why the birth needs to be expedited and what the options are. **[2014]**

1.13.36 Inform the team about the degree of urgency. **[2014]**

1.13.37 Record the time at which the decision to expedite the birth is made. **[2014]**

1.14 Third stage of labour

1.14.1 Recognise that the time immediately after the birth is when the woman and her birth companion(s) are meeting and getting to know the baby. Ensure that any care or interventions are sensitive to this and minimise separation or disruption of the mother and baby. **[2014]**

Definition of the third stage

1.14.2 For the purposes of this guideline, use the following definitions:

- The third stage of labour is the time from the birth of the baby to the expulsion of the placenta and membranes.
- Active management of the third stage involves a package of care comprising the following components:
  - routine use of uterotonic drugs
  - deferred clamping and cutting of the cord
  - controlled cord traction after signs of separation of the placenta.
- Physiological management of the third stage involves a package of care that includes the following components:
  - no routine use of uterotonic drugs
  - no clamping of the cord until pulsation has stopped
  - delivery of the placenta by maternal effort. **[2014]**

Prolonged third stage

1.14.3 Diagnose a prolonged third stage of labour if it is not completed within 30 minutes of the birth with active management or within 60 minutes of the birth with physiological management. Follow recommendations 1.14.21 to 1.14.28 on managing a retained placenta. **[2014]**

Observations in the third stage

1.14.4 Record the following observations for a woman in the third stage of labour:

- her general physical condition, as shown by her colour, respiration and her own report of how she feels
- vaginal blood loss. **[2014]**

1.14.5 If there is postpartum haemorrhage, a retained placenta or maternal collapse, or any other concerns about the woman's wellbeing:

- transfer her to obstetric-led care (following the general principles for transfer of care described in section 1.6)
- carry out frequent observations to assess whether resuscitation is needed. **[2014]**

Active and physiological management of the third stage

1.14.6 Explain to the woman antenatally about what to expect with each package of care for managing the third stage of labour and the benefits and risks associated with each. **[2014]**

1.14.7 Explain to the woman that active management:

- shortens the third stage compared with physiological management
- is associated with nausea and vomiting in about 100 in 1000 women

- is associated with an approximate risk of 13 in 1000 of a haemorrhage of more than 1 litre
- is associated with an approximate risk of 14 in 1000 of a blood transfusion. **[2014]**

1.14.8 Explain to the woman that physiological management:

- is associated with nausea and vomiting in about 50 in 1000 women
- is associated with an approximate risk of 29 in 1000 of a haemorrhage of more than 1 litre
- is associated with an approximate risk of 40 in 1000 of a blood transfusion. **[2014]**

1.14.9 Discuss again with the woman at the initial assessment in labour (see section 1.4) about the different options for managing the third stage and ways of supporting her during delivery of the placenta, and ask if she has any preferences. **[2014]**

1.14.10 Advise the woman to have active management of the third stage, because it is associated with a lower risk of a postpartum haemorrhage and/or blood transfusion. **[2014]**

1.14.11 If a woman at low risk of postpartum haemorrhage requests physiological management of the third stage, support her in her choice. **[2014]**

1.14.12 Document in the records the decision that is agreed with the woman about management of the third stage. **[2014]**

1.14.13 For active management, administer 10 IU of oxytocin by intramuscular injection with the birth of the anterior shoulder or immediately after the birth of the baby and before the cord is clamped and cut. Use oxytocin as it is associated with fewer side effects than oxytocin plus ergometrine. **[2014]**

1.14.14 After administering oxytocin, clamp and cut the cord.

- Do not clamp the cord earlier than 1 minute from the birth of the baby unless there is concern about the integrity of the cord or the baby has a heartbeat below 60 beats/minute that is not getting faster.
- Clamp the cord before 5 minutes in order to perform controlled cord traction as part of active management.
- If the woman requests that the cord is clamped and cut later than 5 minutes, support her in her choice. **[2014]**

1.14.15 After cutting the cord, use controlled cord traction. **[2014]**

1.14.16 Perform controlled cord traction as part of active management only after administration of oxytocin and signs of separation of the placenta. **[2014]**

1.14.17 Record the timing of cord clamping in both active and physiological management. **[2014]**

1.14.18 Advise a change from physiological management to active management if either of the following occur:

- haemorrhage
- the placenta is not delivered within 1 hour of the birth of the baby. **[2014]**

1.14.19 Offer a change from physiological management to active management if the woman wants to shorten the third stage. **[2014]**

1.14.20 Do not use either umbilical oxytocin infusion or prostaglandin routinely in the third stage of labour. **[2014]**

Retained placenta

1.14.21 Secure intravenous access if the placenta is retained, and explain to the woman why this is needed. **[2014]**

1.14.22 Do not use umbilical vein agents if the placenta is retained. **[2014]**

1.14.23 Do not use intravenous oxytocic agents routinely to deliver a retained placenta. **[2014]**

1.14.24 Give intravenous oxytocic agents if the placenta is retained and the woman is bleeding excessively. **[2014]**

1.14.25 If the placenta is retained and there is concern about the woman's condition:

- offer a vaginal examination to assess the need to undertake manual removal of the placenta
- explain that this assessment can be painful and advise her to have analgesia. **[2014]**

1.14.26 If the woman reports inadequate analgesia during the assessment, stop the examination and address this immediately. **[2014]**

1.14.27 If uterine exploration is necessary and the woman is not already in an obstetric unit, arrange urgent transfer (following the general principles for transfer of care described in section 1.6). **[2014]**

1.14.28 Do not carry out uterine exploration or manual removal of the placenta without an anaesthetic. **[2014]**

Postpartum haemorrhage

Risk factors

1.14.29 Advise women with risk factors for postpartum haemorrhage to give birth in an obstetric unit, where more emergency treatment options are available.

- Antenatal risk factors:
  - previous retained placenta or postpartum haemorrhage
  - maternal haemoglobin level below 85 g/litre at onset of labour
  - BMI greater than 35 kg/m^2
  - grand multiparity (parity 4 or more)
  - antepartum haemorrhage

  - overdistention of the uterus (for example, multiple pregnancy, polyhydramnios or macrosomia)
  - existing uterine abnormalities
  - low-lying placenta
  - maternal age of 35 years or older.
- Risk factors in labour:
  - induction
  - prolonged first, second or third stage of labour
  - oxytocin use
  - precipitate labour
  - operative birth or caesarean section. **[2007]**

1.14.30 If a woman has risk factors for postpartum haemorrhage, highlight these in her notes, and make and discuss with her a care plan covering the third stage of labour. **[2007]**

Management

1.14.31 If a woman has a postpartum haemorrhage:

- call for help
- give immediate clinical treatment:
  - emptying of the bladder **and**
  - uterine massage **and**
  - uterotonic drugs **and**
  - intravenous fluids **and**
  - controlled cord traction if the placenta has not yet been delivered
- continuously assess blood loss and the woman's condition, and identify the source of the bleeding
- give supplementary oxygen
- arrange for transfer of the woman to obstetric-led care (following the general principles for transfer of care described in section 1.6). **[2014]**

1.14.32 Administer a bolus of one of the following as first-line treatment for postpartum haemorrhage:

- oxytocin (10 IU intravenous) **or**
- ergometrine (0.5 mg intramuscular) **or**
- combined oxytocin and ergometrine (5 IU/0.5 mg intramuscular). **[2014]**

1.14.33 Offer second-line treatment for postpartum haemorrhage if needed. No particular uterotonic drug can be recommended over any other; options include:

- repeat bolus of:
  - oxytocin (intravenous)
  - ergometrine (intramuscular, or cautiously intravenously)
  - combined oxytocin and ergometrine (intramuscular)
- misoprostol
- oxytocin infusion
- carboprost (intramuscular). **[2014]**

1.14.34 Assess the need for adjuvant options for managing significant continuing postpartum haemorrhage, including:

- tranexamic acid (intravenous)
- rarely, in the presence of otherwise normal clotting factors, rFactor VIIa, in consultation with a haematologist. **[2014]**

1.14.35 Allocate a member of the healthcare team to stay with the woman and her birth companion(s), explain what is happening, answer any questions and offer support throughout the emergency situation. **[2014]**

1.14.36 If the haemorrhage continues:

- perform examination under anaesthetic
- ensure that the uterus is empty and repair any trauma

- consider balloon tamponade before surgical options. **[2014]**

1.14.37 Be aware that no particular surgical procedure can be recommended over any other for treating postpartum haemorrhage. **[2014]**

1.14.38 The maternity service and ambulance service should have strategies in place in order to respond quickly and appropriately if a woman has a postpartum haemorrhage in any setting. **[2014]**

1.15 Care of the newborn baby

Initial assessment of the newborn baby and mother–baby bonding

1.15.1 Record the Apgar score routinely at 1 and 5 minutes for all births. **[2007]**

1.15.2 Record the time from birth to the onset of regular respirations. **[2014]**

1.15.3 If the baby is born in poor condition (on the basis of abnormal breathing, heart rate or tone):

- follow recommendations 1.15.13 to 1.15.18 on neonatal resuscitation **and**
- take paired cord-blood samples for blood gas analysis, after clamping the cord using 2 clamps.

  Continue to evaluate and record the baby's condition until it is improved and stable. **[2014]**

1.15.4 Do not take paired cord blood samples (for blood gas analysis) routinely. **[2014]**

1.15.5 Ensure that a second clamp to allow double-clamping of the cord is available in all birth settings. **[2014]**

1.15.6 Encourage women to have skin-to-skin contact with their babies as soon as possible after the birth[10]. **[2007]**

1.15.7 In order to keep the baby warm, dry and cover him or her with a warm, dry blanket or towel while maintaining skin-to-skin contact with the woman. **[2007]**

1.15.8 Avoid separation of a woman and her baby within the first hour of the birth for routine postnatal procedures, for example, weighing, measuring and bathing, unless these measures are requested by the woman, or are necessary for the immediate care of the baby[11]. **[2007]**

1.15.9 Encourage initiation of breastfeeding as soon as possible after the birth, ideally within 1 hour[12]. **[2007]**

1.15.10 Record head circumference, body temperature and birth weight soon after the first hour following birth. **[2007]**

1.15.11 Undertake an initial examination to detect any major physical abnormality and to identify any problems that require referral. **[2007]**

1.15.12 Ensure that any examination or treatment of the baby is undertaken with the consent of the parents and either in their presence or, if this is not possible, with their knowledge. **[2007]**

Neonatal resuscitation

1.15.13 In the first minutes after birth, evaluate the condition of the baby – specifically respiration, heart rate and tone – in order to determine

[10] Recommendations relating to immediate postnatal care (within 2 hours of birth) have been adapted from the NICE guideline on routine postnatal care of women and their babies; please refer to this for further guidance on care after birth.

[11] Recommendations relating to immediate postnatal care (within 2 hours of birth) have been adapted from the NICE guideline on routine postnatal care of women and their babies; please refer to this for further guidance on care after birth.

[12] Recommendations relating to immediate postnatal care (within 2 hours of birth) have been adapted from the NICE guideline on routine postnatal care of women and their babies; please refer to this for further guidance on care after birth.

whether resuscitation is needed according to nationally accredited guidelines on neonatal resuscitation. **[2014]**

1.15.14 All relevant healthcare professionals caring for women during birth should attend annually a course in neonatal resuscitation that is consistent with nationally accredited guidelines on neonatal resuscitation. **[2014]**

1.15.15 In all birth settings:

- bear in mind that it will be necessary to call for help if the baby needs resuscitation, and plan accordingly
- ensure that there are facilities for resuscitation, and for transferring the baby to another location if necessary
- develop emergency referral pathways for both the woman and the baby, and implement these if necessary. **[2014]**

1.15.16 If a newborn baby needs basic resuscitation, start with air. **[2014]**

1.15.17 Minimise separation of the baby and mother, taking into account the clinical circumstances. **[2014]**

1.15.18 Throughout an emergency situation in which the baby needs resuscitation, allocate a member of the healthcare team to talk with, and offer support to, the woman and any birth companion(s). **[2014]**

Care of babies in the presence of meconium

1.15.19 In the presence of any degree of meconium:

- do not suction the baby's upper airways (nasopharynx and oropharynx) before birth of the shoulders and trunk
- do not suction the baby's upper airways (nasopharynx and oropharynx) if the baby has normal respiration, heart rate and tone
- do not intubate if the baby has normal respiration, heart rate and tone. **[2014]**

1.15.20 If there has been significant meconium (see recommendation 1.5.2) and the baby does not have normal respiration, heart rate and tone, follow nationally accredited guidelines on neonatal resuscitation, including early laryngoscopy and suction under direct vision. **[2014]**

1.15.21 If there has been significant meconium and the baby is healthy, closely observe the baby within a unit with immediate access to a neonatologist. Perform these observations at 1 and 2 hours of age and then 2-hourly until 12 hours of age. **[2014]**

1.15.22 If there has been non-significant meconium, observe the baby at 1 and 2 hours of age in all birth settings. **[2014]**

1.15.23 If any of the following are observed after any degree of meconium, ask a neonatologist to assess the baby (transfer both the woman and baby if they are at home or in a freestanding midwifery unit, following the general principles for transfer of care described in section 1.6):

- respiratory rate above 60 per minute
- the presence of grunting
- heart rate below 100 or above 160 beats/minute
- capillary refill time above 3 seconds
- body temperature of 38°C or above, or 37.5°C on 2 occasions 30 minutes apart
- oxygen saturation below 95% (measuring oxygen saturation is optional after non-significant meconium)
- presence of central cyanosis, confirmed by pulse oximetry if available. **[2014]**

1.15.24 Explain the findings to the woman, and inform her about what to look out for and who to talk to if she has any concerns. **[2014]**

Babies born to women with prelabour rupture of the membranes at term

1.15.25 Closely observe any baby born to a woman with prelabour rupture of the membranes (more than 24 hours before the onset of

established labour) at term for the first 12 hours of life (at 1 hour, 2 hours, 6 hours and 12 hours) in all settings. Include assessment of:

- temperature
- heart rate
- respiratory rate
- presence of respiratory grunting
- significant subcostal recession
- presence of nasal flare
- presence of central cyanosis, confirmed by pulse oximetry if available
- skin perfusion assessed by capillary refill
- floppiness, general wellbeing and feeding.

If any of these are observed, ask a neonatologist to assess the baby (transfer both the woman and baby if they are at home or in a freestanding midwifery unit, following the general principles for transfer of care described in section 1.6). **[2014]**

1.15.26 If there are no signs of infection in the woman, do not give antibiotics to either the woman or the baby, even if the membranes have been ruptured for over 24 hours. **[2007]**

1.15.27 If there is evidence of infection in the woman, prescribe a full course of broad-spectrum intravenous antibiotics. **[2007]**

1.15.28 Advise women with prelabour rupture of the membranes to inform their healthcare professionals immediately of any concerns they have about their baby's wellbeing in the first 5 days after birth, particularly in the first 12 hours when the risk of infection is greatest. **[2007]**

1.15.29 Do not perform blood, cerebrospinal fluid and/or surface culture tests in an asymptomatic baby. **[2007]**

1.15.30 Refer a baby with any symptom of possible sepsis, or born to a woman who has evidence of chorioamnionitis, to a neonatal care specialist immediately. **[2007]**

1.16 Care of the woman after birth

Initial assessment

1.16.1 Carry out the following observations of the woman after birth:

- Record her temperature, pulse and blood pressure. Transfer the woman (with her baby) to obstetric-led care if any of the relevant indications listed in recommendation 1.5.1 are met.
- Uterine contraction and lochia.
- Examine the placenta and membranes: assess their condition, structure, cord vessels and completeness. Transfer the woman (with her baby) to obstetric-led care if the placenta is incomplete.
- Early assessment of the woman's emotional and psychological condition in response to labour and birth.
- Successful voiding of the bladder. Assess whether to transfer the woman (with her baby) to obstetric-led care after 6 hours if her bladder is palpable and she is unable to pass urine.

If transferring the woman to obstetric-led care, follow the general principles for transfer of care described in section 1.6. **[2014]**

Perineal care

1.16.2 Define perineal or genital trauma caused by either tearing or episiotomy as follows:

- first degree – injury to skin only
- second degree – injury to the perineal muscles but not the anal sphincter
- third degree – injury to the perineum involving the anal sphincter complex:
  - 3a – less than 50% of external anal sphincter thickness torn

  - 3b – more than 50% of external anal sphincter thickness torn
  - 3c – internal anal sphincter torn.
- fourth degree – injury to the perineum involving the anal sphincter complex (external and internal anal sphincter) and anal epithelium. **[2007]**

1.16.3 Before assessing for genital trauma:

- explain to the woman what is planned and why
- offer inhalational analgesia
- ensure good lighting
- position the woman so that she is comfortable and so that the genital structures can be seen clearly. **[2007]**

1.16.4 Perform the initial examination gently and with sensitivity. It may be done in the immediate period after birth. **[2007]**

1.16.5 If genital trauma is identified after birth, offer further systematic assessment, including a rectal examination. **[2007]**

1.16.6 Include the following in a systematic assessment of genital trauma:

- further explanation of what is planned and why
- confirmation by the woman that tested effective local or regional analgesia is in place
- visual assessment of the extent of perineal trauma to include the structures involved, the apex of the injury and assessment of bleeding
- a rectal examination to assess whether there has been any damage to the external or internal anal sphincter if there is any suspicion that the perineal muscles are damaged. **[2007]**

1.16.7 Ensure that the timing of this systematic assessment does not interfere with mother–baby bonding unless the woman has bleeding that requires urgent attention. **[2007]**

1.16.8 Assist the woman to adopt a position that allows adequate visual assessment of the degree of trauma and for repair. Only maintain this position for as long as necessary for systematic assessment and repair. If it is not possible to adequately assess the trauma, transfer the woman (with her baby) to obstetric-led care, following the general principles for transfer of care described in section 1.6. **[2007, amended 2014]**

1.16.9 Seek advice from a more experienced midwife or obstetrician if there is uncertainty about the nature or extent of the trauma. Transfer the woman (with her baby) to obstetric-led care (following the general principles for transfer of care described in section 1.6) if the repair needs further surgical or anaesthetic expertise. **[2007, amended 2014]**

1.16.10 Document the systematic assessment and its results fully, possibly pictorially. **[2007]**

1.16.11 All relevant healthcare professionals should attend training in perineal/genital assessment and repair, and ensure that they maintain these skills. **[2007]**

1.16.12 Undertake repair of the perineum as soon as possible to minimise the risk of infection and blood loss. **[2007]**

1.16.13 When carrying out perineal repair:

- ensure that tested effective analgesia is in place, using infiltration with up to 20 ml of 1% lidocaine or equivalent
- top up the epidural or insert a spinal anaesthetic if necessary. **[2007]**

1.16.14 If the woman reports inadequate pain relief at any point, address this immediately. **[2007]**

1.16.15 Advise the woman that in the case of first-degree trauma, the wound should be sutured in order to improve healing, unless the skin edges are well opposed. **[2007]**

1.16.16 Advise the woman that in the case of second-degree trauma, the muscle should be sutured in order to improve healing. **[2007]**

1.16.17 If the skin is opposed after suturing of the muscle in second-degree trauma, there is no need to suture it. **[2007]**

1.16.18 If the skin does require suturing, use a continuous subcuticular technique. **[2007]**

1.16.19 Undertake perineal repair using a continuous non-locked suturing technique for the vaginal wall and muscle layer. **[2007]**

1.16.20 Use an absorbable synthetic suture material to suture the perineum. **[2007]**

1.16.21 Offer rectal non-steroidal anti-inflammatory drugs routinely after perineal repair of first- and second-degree trauma provided these drugs are not contraindicated. **[2007]**

1.16.22 Observe the following basic principles when performing perineal repairs:

- Repair perineal trauma using aseptic techniques.
- Check equipment and count swabs and needles before and after the procedure.
- Good lighting is essential to see and identify the structures involved.
- Ensure that difficult trauma is repaired by an experienced practitioner in theatre under regional or general anaesthesia.
- Insert an indwelling catheter for 24 hours to prevent urinary retention.
- Ensure that good anatomical alignment of the wound is achieved and that consideration is given to the cosmetic results.

- Carry out rectal examination after completing the repair to ensure that suture material has not been accidentally inserted through the rectal mucosa.
- After completion of the repair, document an accurate detailed account covering the extent of the trauma, the method of repair and the materials used.
- Give the woman information about the extent of the trauma, pain relief, diet, hygiene and the importance of pelvic-floor exercises. **[2007]**

Putting this guideline into practice

NICE has produced tools and resources [link to tools and resources tab on publication] to help you put this guideline into practice.

Putting recommendations into practice can take time. How long may vary from guideline to guideline, and depends on how much change in practice or services is needed. Implementing change is most effective when aligned with local priorities.

Changes recommended for clinical practice that can be done quickly – like changes in prescribing practice – should be shared quickly. This is because healthcare professionals should use guidelines to guide their work – as is required by professional regulating bodies such as the General Medical and Nursing and Midwifery Councils.

Changes should be implemented as soon as possible, unless there is a good reason for not doing so (for example, if it would be better value for money if a package of recommendations were all implemented at once).

Different organisations may need different approaches to implementation, depending on their size and function. Sometimes individual practitioners may be able to respond to recommendations to improve their practice more quickly than large organisations.

Here are some pointers to help organisations put NICE guidelines into practice:

1. **Raise awareness** through routine communication channels, such as email or newsletters, regular meetings, internal staff briefings and other communications with all relevant partner organisations. Identify things staff can include in their own practice straight away.

2. **Identify a lead** with an interest in the topic to champion the guideline and motivate others to support its use and make service changes, and to find out any significant issues locally.

3. **Carry out a baseline assessment** against the recommendations to find out whether there are gaps in current service provision.

4. **Think about what data you need to measure improvement** and plan how you will collect it. You may want to work with other health and social care organisations and specialist groups to compare current practice with the recommendations. This may also help identify local issues that will slow or prevent implementation.

5. **Develop an action plan**, with the steps needed to put the guideline into practice, and make sure it is ready as soon as possible. Big, complex changes may take longer to implement, but some may be quick and easy to do. An action plan will help in both cases.

6. **For very big changes** include milestones and a business case, which will set out additional costs, savings and possible areas for disinvestment. A small project group could develop the action plan. The group might include the guideline champion, a senior organisational sponsor, staff involved in the associated services, finance and information professionals.

7. **Implement the action plan** with oversight from the lead and the project group. Big projects may also need project management support.

8. **Review and monitor** how well the guideline is being implemented through the project group. Share progress with those involved in making improvements, as well as relevant boards and local partners.

NICE provides a comprehensive programme of support and resources to maximise uptake and use of evidence and guidance. See our into practice pages for more information.

Also see Leng G, Moore V, Abraham S, editors (2014) Achieving high quality care – practical experience from NICE. Chichester: Wiley.

Context

Giving birth is a life-changing event. The care that a woman receives during labour has the potential to affect her – both physically and emotionally, in the short and longer term – and the health of her baby. Good communication, support and compassion from staff, and having her wishes respected, can help her feel in control of what is happening and contribute to making birth a positive experience for the woman and her birth companion(s).

This guideline covers the care of healthy women who go into labour at term (37^{+0} to 41^{+6} weeks). About 700,000 women give birth in England and Wales each year, of whom about 40% are having their first baby. Most of these women are healthy and have a straightforward pregnancy. Almost 90% of women will give birth to a single baby after 37 weeks of pregnancy, with the baby presenting head first. About two-thirds of women go into labour spontaneously. Therefore most women giving birth in England and Wales are covered by this guideline.

Since the original guideline was published in 2007, the number of women giving birth in England and Wales each year has risen, the rate of intervention (instrumental births and caesarean section) has increased slightly, and there has been some reconfiguration of services. The decision to update the guideline in 2014 was made based on developments in the NHS and new evidence becoming available that could affect the recommendations from 2007.

It is important that the woman is given information and advice about all available settings when she is deciding where to have her baby, so that she is able to make a fully informed decision. This includes information about outcomes for the different settings. It is also vital to recognise when transfer of care from midwifery-led care to obstetric-led care is indicated because of increased risk to the woman and/or her baby resulting from complications that have developed during labour.

Uncertainty and inconsistency of care has been identified in a number of areas, such as choosing place of birth, care during the latent first stage of labour, fetal assessment and monitoring during labour (particularly cardiotocography compared with intermittent auscultation) and management of the third stage of labour. These and other related topics are addressed in the guideline.

The guideline is intended to cover the care of healthy women with uncomplicated pregnancies entering labour at low risk of developing intrapartum complications. In addition, recommendations are included that address the care of women who start labour as ‘low risk’ but who go on to develop complications. These include the care of women with prelabour rupture of membranes at term, care of the woman and baby when meconium is present, indications for continuous cardiotocography, interpretation of cardiotocograph traces, and management of retained placenta and postpartum haemorrhage. Aspects of intrapartum care for women at risk of developing intrapartum complications are covered by a range of NICE guidelines on specific conditions and a further guideline is planned on the intrapartum care of women at high risk of complications during pregnancy and the intrapartum period.

More information

To find out what NICE has said on topics related to this guideline, see our web page on intrapartum care.

Recommendations for research

The guideline committee has made the following recommendations for research.

As part of the 2017 update, the committee removed a research recommendation on intermittent auscultation compared with cardiotocography. Details can be found in the addendum.

1 Effect of information giving on place of birth

How does the provision of accurate, evidence-based information affect women's decision-making processes and choice of place of birth?

Why this is important

A report by Coxon et al. (2013) identifies in detail why women make choices about where to give birth and how these choices can be influenced. Influences may include written and verbal information (both online and from midwives and doctors), previous experience, and word-of-mouth advice from friends and family. The Birthplace study concluded that giving birth outside an obstetric unit is the optimal choice for low-risk women. This finding should be used to restructure the way in which information is provided, so that it is presented in a more accurate, less risk-based way in order to support women's choices. This change should be evaluated in a quantitative observational study and/or qualitative study that records any changes in women's choice-making about place of birth. Outcomes include understanding why and how women make choices about where to give birth and how this can influence the provision of appropriate and accessible information, a measure of informed decision-making, and fearfulness and absence of fearfulness when choosing place of birth.

2 Long-term consequences of planning birth in different settings

What are the long-term consequences for women and babies of planning birth in different settings?

Why this is important

The long-term consequences of birth experiences and birth outcomes are poorly understood, particularly in relation to place of birth. A large population-based observational study would compare women's experiences and outcomes in different birth settings (with subgroup analysis by mode of birth) in relation to the wellbeing of the women and their children over different periods of time (for example, 2, 5, 10, 15, 20 and 30 years). A secondary analysis could compare different providers where birth philosophies are different. Outcomes would be compared by accessing medical records and through qualitative interviews. Primary outcomes are long-term physical morbidity, pain after birth, readmission to hospital, infection, psychological morbidity (for example, postnatal depression, bonding, relationship breakdown with partner, fear of giving birth in future) and breastfeeding rates. Secondary outcomes are impact on attachment between mother and child, obesity in children, autoimmune disease, chronic illness, educational achievement and family functioning.

3 Education about the latent first stage of labour

Does enhanced education specifically about the latent first stage of labour increase the number of nulliparous women who wait until they are in established labour before attending the obstetric or midwifery unit (or calling the midwife to a home birth), compared with women who do not receive this education?

Why this is important

Studies show that antenatal education about labour and birth in general makes a difference to some birth outcomes, but there is limited evidence focusing on education about the latent first stage of labour specifically. The aim of this study (randomised controlled trial or prospective observational study) would be to compare 2 groups of women experiencing their first labour and birth: a group who receive an education session in late pregnancy covering what to expect in the latent first stage of labour and how to recognise the onset of established labour, and a group who have not received this focused education. Primary outcomes would be mode of birth, satisfaction

with the birth experience and the woman's physical and emotional wellbeing after birth. Secondary outcomes would be use of pharmacological pain relief, use of oxytocin to augment labour, and time from first contact in confirmed established labour to birth.

4 Postpartum haemorrhage

What is the most effective treatment for primary postpartum haemorrhage?

Why this is important

There is uncertainty about the most effective drug treatments and dosage regimes, and about which other treatments should be used, for women who develop a postpartum haemorrhage. The most effective sequencing of interventions is also uncertain. The psychological impact of postpartum haemorrhage for women can be significant, and identifying the approach that minimises this impact is important. Randomised controlled trials comparing different dosage regimes for oxytocin and misoprostol, as well as comparisons with ergometrine and carboprost, are needed. Trials of mechanical measures such as intrauterine balloons or interventional radiology as early second-line treatment (rather than an alternative drug treatment) are also needed. Alternatively, a trial comparing the effectiveness of a complex intervention (for example, an educational component, sequence of interventions, immediate feedback and quality improvements) compared with standard care could be undertaken. Important outcomes include blood and blood product transfusion, need for further intervention, need for hysterectomy and psychological outcomes for the woman.

Appendix A: Adverse outcomes

Adverse outcome: in order to be able to count enough adverse events to be able to say that the results recorded are not just a result of chance, the Birthplace UK (2011) study used a composite definition of 'adverse outcome'. The definition includes the following outcomes: stillbirth during labour, death of the baby in the first week after birth, neonatal encephalopathy (disordered brain function caused by oxygen deprivation before or during birth), meconium aspiration syndrome, and physical birth injuries (brachial plexus injury and bone fractures). The term 'serious medical problems' has been used to describe this composite outcome in the guideline recommendations.

Table A1 Numbers and proportions of the individual components of the composite adverse outcomes measure recorded in the Birthplace UK (2011) study

Outcome	Actual number of babies affected out of [63,955 to 64,535]* (number per 1000)	Percentage of all adverse outcomes measured
Stillbirth after start of care in labour	14 out of 64,535 (0.22 per 1000)	5%
Death of the baby in the first week after birth	18 out of 64,292 (0.28 per 1000)	7%
Neonatal encephalopathy (disordered brain function caused by oxygen deprivation before or during birth) (clinical diagnosis)	102 out of 63,955 (1.6 per 1000)	40%
Meconium aspiration syndrome (the baby breathes meconium into their lungs)	86 out of 63,955 (1.3 per 1000)	34%
Brachial plexus injury	24 out of 63,955 (0.38 per 1000)	9%
Bone fractures	11 out of 63,955 (0.17 per 1000)	4%
TOTAL (of all outcomes included in the 'adverse outcome' composite measure)	255 out of 63,955 to 64,535) (approx. 4 per 1000)	99%**

Note: Each of the categories above are mutually exclusive and outcomes listed higher in the table take precedence over outcomes listed lower down. For example, if a baby with neonatal encephalopathy died within 7 days the outcome is classified as an early neonatal death.

* Denominator varies because of missing values.

** Does not equal 100% because of rounding.

Update information

This guideline is an update of NICE guideline CG190 (published December 2014).

New recommendations have been added on measuring fetal heart rate as part of the initial assessment and fetal monitoring during labour.

These are marked as:

- **[new 2017]** if the evidence has been reviewed and the recommendation has been added or updated
- **[2017]** if the evidence has been reviewed but no change has been made to the recommended action.

NICE proposes to delete some recommendations from the 2014 guideline, because either the evidence has been reviewed and the recommendations have been updated, or NICE has updated other relevant guidance and has replaced the original recommendations. Recommendations that have been deleted or changed sets out these recommendations and includes details of replacement recommendations. Where there is no replacement recommendation, an explanation for the proposed deletion is given.

Where recommendations are shaded in grey and end **[2007], [2007, amended 2014] or [2014]**, the evidence has not been reviewed in the current update.

See also the original NICE guideline and supporting documents.

Recommendations that have been deleted or changed

Recommendations to be deleted

Recommendation in 2014 guideline	Comment
Do not perform cardiotocography on admission for low risk women in suspected or established labour in any birth setting as part of the initial assessment. (1.4.10)	Replaced by: Do not routinely offer cardiotocography on admission to low-risk women in suspected or established labour as part of the initial assessment. (1.4.6)
Offer continuous cardiotocography if any of the risk factors listed in recommendation 1.4.3 are identified on initial assessment, and explain to the woman why this is necessary. (See also section 1.10 on fetal monitoring.) (1.4.11)	Replaced by: Offer continuous cardiotocography if any of the following risk factors are present at initial assessment or arise during labour: • maternal pulse over 120 beats/minute on 2 occasions 30 minutes apart • temperature of 38°C or above on a single reading, or 37.5°C or above on 2 consecutive occasions 1 hour apart • suspected chorioamnionitis or sepsis • pain reported by the woman that differs from the pain normally associated with contractions • the presence of significant meconium (as defined in recommendation 1.5.2) • fresh vaginal bleeding that develops in labour • severe hypertension: a single reading of either diastolic blood pressure of 110 mmHg or more or systolic blood pressure of 160 mmHg or more, measured between contractions (see the NICE guideline on hypertension in pregnancy) • hypertension: either diastolic blood pressure of 90 mmHg or more or systolic blood pressure of 140 mmHg or more on 2 consecutive readings taken 30 minutes apart, measured between contractions • a reading of 2+ of protein on urinalysis and a single reading of either raised diastolic blood pressure (90 mmHg or more) or raised systolic blood pressure (140 mmHg or more) • confirmed delay in the first or

	second stage of labour (see recommendations 1.12.14, 1.13.3 and 1.13.4) • oxytocin use. (1.10.4)
If any one of the following risk factors is present or arises during labour, perform a full assessment of all factors listed in recommendation 1.5.1: • prolonged period since rupture of membranes (24 hours or more) (see also section 1.11) • moderate hypertension (150/100 to 159/109 mmHg [see the NICE guideline on hypertension in pregnancy]) • confirmed delay in the first or second stage of labour (see recommendations 1.12.13, 1.13.24 and 1.13.25) • the presence of non-significant meconium. Advise continuous cardiotocography if 2 or more of the above risk factors are present, or any other risk factor in recommendation 1.5.1 is present with 1 of these. (1.10.4)	Replaced by: Offer continuous cardiotocography if any of the following risk factors are present at initial assessment or arise during labour: • maternal pulse over 120 beats/minute on 2 occasions 30 minutes apart • temperature of 38°C or above on a single reading, or 37.5°C or above on 2 consecutive occasions 1 hour apart • suspected chorioamnionitis or sepsis • pain reported by the woman that differs from the pain normally associated with contractions • the presence of significant meconium (as defined in recommendation 1.5.2) • fresh vaginal bleeding that develops in labour • severe hypertension: a single reading of either diastolic blood pressure of 110 mmHg or more or systolic blood pressure of 160 mmHg or more, measured between contractions (see the NICE guideline on hypertension in pregnancy) • hypertension: either diastolic blood pressure of 90 mmHg or more or systolic blood pressure of 140 mmHg or more on 2 consecutive readings taken 30 minutes apart, measured between contractions • a reading of 2+ of protein on urinalysis and a single reading of either raised diastolic blood pressure (90 mmHg or more) or raised systolic blood pressure (140 mmHg or more) • confirmed delay in the first or second stage of labour (see recommendations 1.12.14, 1.13.3 and 1.13.4)

	• oxytocin use. (1.10.4)
Be aware that if the cardiotocography parameters of baseline fetal heart rate and baseline variability are normal, the risk of fetal acidosis is low. (1.10.15)	This recommendation has been deleted because it was inconsistent with recommendation 1.10.29. Categorise cardiotocography traces as follows: • low risk of fetal acidosis: all features are normal/reassuring (see table 10) • medium risk of fetal acidosis: 1 non-reassuring feature and 2 normal/reassuring features (but note that if accelerations are present, acidosis is unlikely) • high risk of fetal acidosis: • 1 abnormal feature or • 2 non-reassuring features. (1.10.28)
If the baseline fetal heart rate is between 161 and 180 beats/minute with no other non-reassuring or abnormal features on the cardiotocograph and the woman's temperature and pulse are normal, continue cardiotocography and normal care, since the risk of fetal acidosis is low. (1.10.18)	This recommendation has been deleted because it was inconsistent with recommendation 1.10.29. Categorise cardiotocography traces as follows: • low risk of fetal acidosis: all features are normal/reassuring (see table 10) • medium risk of fetal acidosis: 1 non-reassuring feature and 2 normal/reassuring features (but note that if accelerations are present, acidosis is unlikely) • high risk of fetal acidosis: – 1 abnormal feature or – 2 non-reassuring features. (1.10.28)
If the baseline fetal heart rate is between 100 and 109 beats/minute or above 160 beats/minute and there is 1 other non-reassuring feature on the cardiotocograph, start conservative measures (see recommendation 1.10.35) to improve fetal wellbeing. (1.10.19)	This recommendation has been deleted because it was inconsistent with recommendation 1.10.29. Categorise cardiotocography traces as follows: • low risk of fetal acidosis: all features are normal/reassuring (see table 10) • medium risk of fetal acidosis: 1 non-reassuring feature and 2 normal/reassuring features (but note that if accelerations are present, acidosis is unlikely) • high risk of fetal acidosis: – 1 abnormal feature or – 2 non-reassuring features. (1.10.28)

If the baseline fetal heart rate is above 180 beats/minute with no other non reassuring or abnormal features on the cardiotocograph: • think about possible underlying causes (such as infection) and appropriate investigation • check the woman's temperature and pulse; if either are raised, offer fluids and paracetamol • start one or more conservative measures (see recommendation 1.10.35) • offer fetal blood sampling to measure lactate or pH (see recommendations 1.10.41 to 1.10.54) if the rate stays above 180 beats/minute despite conservative measures. (1.10.20)	Replaced by: Categorise cardiotocography traces as follows: • low risk of fetal acidosis: all features are normal/reassuring (see table 10) • medium risk of fetal acidosis: 1 non-reassuring feature and 2 normal/reassuring features (but note that if accelerations are present, acidosis is unlikely) • high risk of fetal acidosis: – 1 abnormal feature or – 2 non-reassuring features. (1.10.28) If there are any concerns about the baby's wellbeing, be aware of the possible underlying causes and start one or more of the following conservative measures based on an assessment of the most likely cause(s): • encourage the woman to mobilise or adopt an alternative position (and to avoid being supine) • offer oral or intravenous fluids • reduce contraction frequency by: – reducing or stopping oxytocin if it is being used and/or – offering a tocolytic drug (a suggested regimen is subcutaneous terbutaline 0.25 mg). (1.10.34) If the cardiotocograph trace still suggests a high risk of fetal acidosis 15 minutes after starting conservative measures: • consider fetal blood sampling or • expedite the birth. (1.10.31)
1.10.23 If there is reduced baseline variability of less than 5 beats/minute with a normal baseline fetal heart rate and no variable or late decelerations: • start conservative measures (see recommendation 1.10.35) if this persists for over 30 minutes • offer fetal blood sampling to measure lactate or pH (see	Replaced by: Use the following categorisations for fetal heart rate baseline variability: • normal/reassuring: – 5–25 beats/minute • non-reassuring: – less than 5 beats/minute for 30–50 minutes – more than 25 beats/minute for up

recommendations 1.10.41 to 1.10.54) if it persists for over 90 minutes. [2014]	to 30 minutes • abnormal: – less than 5 beats/minute for more than 50 minutes – more than 25 beats/minute for more than 30 minutes – sinusoidal. (1.10.18) Categorise cardiotocography traces as follows: • low risk of fetal acidosis: – all features are normal/reassuring (see table 10) • medium risk of fetal acidosis: – 1 non-reassuring feature and 2 normal/reassuring features (but note that if accelerations are present, acidosis is unlikely) • high risk of fetal acidosis: – 1 abnormal feature or – 2 non-reassuring features. (1.10.28) If there are any concerns about the baby's wellbeing, be aware of the possible underlying causes and start one or more of the following conservative measures based on an assessment of the most likely cause(s): • encourage the woman to mobilise or adopt an alternative position (and to avoid being supine) • offer oral or intravenous fluids • reduce contraction frequency by: – reducing or stopping oxytocin if it is being used and/or – offering a tocolytic drug (a suggested regimen is subcutaneous terbutaline 0.25 mg). (1.10.34) If the cardiotocograph trace still suggests a high risk of fetal acidosis 15 minutes after starting conservative measures: • consider fetal blood sampling or • expedite the birth. (1.10.31)
If there is reduced baseline variability of	Replaced by:

less than 5 beats/minute for over 30 minutes together with 1 or more of tachycardia (baseline fetal heart rate above 160 beats/minute), a baseline fetal heart rate below 100 beats/minute or variable or late decelerations: • start conservative measures (see recommendation 1.10.35) and • offer fetal blood sampling to measure lactate or pH (see recommendations 1.10.41 to 1.10.54). (1.10.24)	Use the following categorisations for fetal heart rate baseline variability: • normal/reassuring: – 5–25 beats/minute • non-reassuring: – less than 5 beats/minute for 30–50 minutes – more than 25 beats/minute for up to 30 minutes • abnormal: – less than 5 beats/minute for more than 50 minutes – more than 25 beats/minute for more than 30 minutes – sinusoidal. (1.10.18) Categorise cardiotocography traces as follows: • low risk of fetal acidosis: – all features are normal/reassuring (see table 10) • medium risk of fetal acidosis: – 1 non-reassuring feature and 2 normal/reassuring features (but note that if accelerations are present, acidosis is unlikely) • high risk of fetal acidosis: – 1 abnormal feature or – 2 non-reassuring features. (1.10.28) If there are any concerns about the baby's wellbeing, be aware of the possible underlying causes and start one or more of the following conservative measures based on an assessment of the most likely cause(s): • encourage the woman to mobilise or adopt an alternative position (and to avoid being supine) • offer oral or intravenous fluids • reduce contraction frequency by: – reducing or stopping oxytocin if it is being used and/or – offering a tocolytic drug (a suggested regimen is subcutaneous terbutaline 0.25 mg). (1.10.34)

	If the cardiotocograph trace still suggests a high risk of fetal acidosis 15 minutes after starting conservative measures: • consider fetal blood sampling or • expedite the birth. (1.10.31)
Start conservative measures (see recommendation 1.10.35) if variable decelerations are observed with a normal baseline fetal heart rate and normal baseline variability that are: • dropping from baseline by 60 beats/minute or less and taking 60 seconds or less to recover • present for over 90 minutes • occurring with over 50% of contractions. (1.10.29)	Replaced by: Use the following categorisations for decelerations in fetal heart rate: • normal/reassuring: – no decelerations – early decelerations – variable decelerations without any concerning characteristics (see recommendation 1.10.24) for less than 90 minutes • non-reassuring: – variable decelerations without any concerning characteristics for 90 minutes or more • abnormal: – variable decelerations with any concerning characteristics for 30 minutes (or less if there are any concerning maternal or fetal clinical risk factors, such as vaginal bleeding or significant meconium) in over 50% of contractions – late decelerations for 30 minutes (or less if there are any concerning maternal or fetal risk factors, such as vaginal bleeding or significant meconium) in over 50% of contractions – bradycardia or a single prolonged deceleration (below 100 beats/minute) lasting 3 minutes or more. (1.10.22) Regard the following as concerning characteristics of variable decelerations: • lasting more than 60 seconds • reduced baseline variability within the deceleration • gradual return to baseline after a contraction • failure to return to baseline

	• biphasic (W) shape • no shouldering. (1.10.24) Categorise cardiotocography traces as follows: • low risk of fetal acidosis: – all features are normal/reassuring (see table 10) • medium risk of fetal acidosis: – 1 non-reassuring feature and 2 normal/reassuring features (but note that if accelerations are present, acidosis is unlikely) • high risk of fetal acidosis: – 1 abnormal feature or – 2 non-reassuring features. (1.10.28) If there are any concerns about the baby's wellbeing, be aware of the possible underlying causes and start one or more of the following conservative measures based on an assessment of the most likely cause(s): • encourage the woman to mobilise or adopt an alternative position (and to avoid being supine) • offer oral or intravenous fluids • reduce contraction frequency by: – reducing or stopping oxytocin if it is being used and/or – offering a tocolytic drug (a suggested regimen is subcutaneous terbutaline 0.25 mg). (1.10.34) With regard to time to recovery, the Committee believed that the distinction between variable decelerations 'taking 60 seconds or less to recover' and 'taking over 60 seconds to recover' was too complex to implement when interpreting the cardiotocograph trace and that this distinction was not implemented in practice
Start conservative measures (see recommendation 1.10.35) if variable decelerations are observed with a normal baseline fetal heart rate and	Replaced by: Use the following categorisations for decelerations in fetal heart rate: • normal/reassuring:

normal baseline variability that are: • dropping from baseline by more than 60 beats/minute or taking over 60 seconds to recover • present for up to 30 minutes • occurring with over 50% of contractions. (1.10.30)	– no decelerations – early decelerations – variable decelerations without any concerning characteristics (see recommendation 1.10.24) for less than 90 minutes • non-reassuring: – variable decelerations without any concerning characteristics for 90 minutes or more • abnormal: – variable decelerations with any concerning characteristics for 30 minutes (or less if there are any concerning maternal or fetal clinical risk factors, such as vaginal bleeding or significant meconium) in over 50% of contractions – late decelerations for 30 minutes (or less if there are any concerning maternal or fetal risk factors, such as vaginal bleeding or significant meconium) in over 50% of contractions – bradycardia or a single prolonged deceleration (below 100 beats/minute) lasting 3 minutes or more. (1.10.22) Categorise cardiotocography traces as follows: • low risk of fetal acidosis: – all features are normal/reassuring (see table 10) • medium risk of fetal acidosis: – 1 non-reassuring feature and 2 normal/reassuring features (but note that if accelerations are present, acidosis is unlikely) • high risk of fetal acidosis: – 1 abnormal feature or – 2 non-reassuring features. (1.10.28) If there are any concerns about the baby's wellbeing, be aware of the possible underlying causes and start one or more of the following conservative measures based on an

	assessment of the most likely cause(s): • encourage the woman to mobilise or adopt an alternative position (and to avoid being supine) • offer oral or intravenous fluids • reduce contraction frequency by: – reducing or stopping oxytocin if it is being used and/or – offering a tocolytic drug (a suggested regimen is subcutaneous terbutaline 0.25 mg). (1.10.34)
Offer fetal blood sampling to measure lactate or pH (see recommendations 1.10.41 to 1.10.54) if non reassuring variable decelerations (see recommendations 1.10.29 and 1.10.30) are: • still observed 30 minutes after starting conservative measures or • accompanied by tachycardia (baseline fetal heart rate above 160 beats/minute) and/or reduced baseline variability (less than 5 beats/minute). (1.10.31)	Replaced by: If the cardiotocograph trace still suggests a high risk of fetal acidosis 15 minutes after starting conservative measures: • consider fetal blood sampling or • expedite the birth. (1.10.31)
Take into account that the longer, the later and the deeper the individual decelerations, the more likely the presence of fetal acidosis (particularly if the decelerations are accompanied by tachycardia and/or reduced baseline variability), and take action sooner than 30 minutes if there is concern about fetal wellbeing. (1.10.33)	Replaced by: Categorise cardiotocography traces as follows: • low risk of fetal acidosis: – all features are normal/reassuring (see table 10) • medium risk of fetal acidosis: – 1 non-reassuring feature and 2 normal/reassuring features (but note that if accelerations are present, acidosis is unlikely) • high risk of fetal acidosis: – 1 abnormal feature or – 2 non-reassuring features. (1.10.28) The Committee discussed that depth of the deceleration is not important because a non-reassuring deceleration can be shallow too and it was, therefore, agreed that the depth of the deceleration would not be referred to in the recommendations
Use the fetal heart rate response after	This recommendation has been deleted

fetal scalp stimulation during a vaginal examination to elicit information about fetal wellbeing if fetal blood sampling is unsuccessful or contraindicated. (1.10.40)	because fetal scalp stimulation is now preferred to fetal blood sampling.

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Take into account the time needed to take a fetal blood sample when planning repeat sampling. (1.10.51)	Replaced by: When considering fetal blood sampling, take into account the whole clinical picture and the woman's preferences. (1.10.42) Before carrying out or repeating fetal blood sampling, start conservative measures and carry out digital fetal scalp stimulation (see recommendations 1.10.34, 1.10.38 and 1.10.39. Only continue with fetal blood sampling if the risk of fetal acidosis remains high (see recommendation 1.10.29). (1.10.41) The Committee felt that the 2014 recommendation about taking into account the time needed to take a fetal blood sample when planning repeat sampling was ambiguous and replaced it with a recommendation to consider the whole clinical picture and actions that would stem from this
If the cardiotocograph trace remains unchanged and the fetal blood sample result is stable (that is, lactate or pH is unchanged) after a second test, further samples may be deferred unless additional non reassuring or abnormal features are seen. (1.10.52)	Replaced by: Discuss with the consultant obstetrician if a third fetal blood sample is thought to be needed. (1.10.53)

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4 ISBN: