Intrapartum care: care of healthy women and their babies during childbirth

NICE guideline
Draft for consultation, June 2006

If you wish to comment on this version of the guideline, please be aware that all the supporting information and evidence is contained in the full version.
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[The algorithms will be published as separate files on the Web]
Introduction

Birth is a life changing event and the care given has the potential to affect women both physically and emotionally in the short and longer term. About 600,000 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. Most women (about two thirds) go into labour spontaneously. Thus the majority of women giving birth in the UK fall under the scope of this guideline.

This guideline covers the care of healthy women in labour at term (37–42 weeks). It does not cover the care of women with suspected or confirmed preterm labour; women with an intrauterine fetal death; women with co-existing severe morbidities such as pre-eclampsia, or diabetes; women who have multiple pregnancies; or women with intrauterine growth retardation of fetus.

This guideline provides an update of Inherited clinical guideline C ‘Electronic fetal monitoring: The use and interpretation of cardiotocography in intrapartum fetal surveillance’ issued in 2001. Inherited clinical guideline C will be withdrawn upon publication of this new guideline.
Women-centred care

This guideline offers best practice advice on the care of healthy women in labour and their babies.

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

Women should have the opportunity to make informed decisions about their care and any treatment needed. Where a woman does not have the capacity to make decisions, healthcare professionals should follow the Department of Health guidelines – Reference guide to consent for examination or treatment (2001) (available from www.dh.gov.uk).

Good communication between healthcare professionals and the woman and her family is essential. It should be supported by the provision of evidence-based information offered in a form that is tailored to the needs of the individual woman.

Care and information should be appropriate and the woman’s cultural practices should be taken into account. All information should be provided in a form that is accessible to women, their partners and families, taking into account any additional needs, such as physical, cognitive or sensory disabilities, and people who do not speak or read English.

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

Planning place of birth

- Women should be offered the choice of planning birth at home, in a midwifery-led unit or a consultant-led unit. Before making their choice, women should be informed of the potential risks and benefits of each birth setting. As a minimum this information should include: [1.1.1]
  - Planning birth at home:
    ◊ increases the likelihood of a normal vaginal birth and satisfaction in women who are committed to giving birth in this setting, compared with planning birth in hospital
    ◊ is likely to result in transfer to a hospital for between 10% and 45% of women in pregnancy and labour (nulliparous 40–75%; parous 10–40%) and between 4% and 20% of women in labour (nulliparous 30–55%; parous 1–15%).
  - Planning birth in a standalone midwifery-led unit:
    ◊ reduces the likelihood of pharmacological analgesia, and increases the likelihood of intact perineum, a spontaneous vaginal birth and satisfaction, compared with planning birth in a consultant-led unit.
    ◊ is likely to result in transfer to a consultant-led unit for about 30% of women in pregnancy and labour and about 12% of women in labour.
  - Planning birth in an alongside midwifery-led unit:
    ◊ reduces the likelihood of pharmacological analgesia, and increases the likelihood of a spontaneous vaginal birth, and intact perineum, compared with planning birth in a consultant-led unit
    ◊ is likely to result in transfer to a consultant-led unit for 43–50% of women in pregnancy and labour (nulliparous about 55%; parous about 30%), and from 24% to 30% of women in labour (nulliparous about 35%; parous about 12%).
  - Planning birth in a consultant-led unit:
    ◊ means the woman is likely to have access to epidural analgesia
◊ increases the likelihood of pharmacological analgesia, interventions and an instrumental birth, and decreases satisfaction, compared with planning birth in other birth settings

◊ There may be a lower risk of perinatal mortality when care is delivered in a consultant-led unit.

- A national surveillance scheme which allows appropriate comparisons, including safety and cost effectiveness, of all places of birth should be established to address the poor quality and lack of coverage of current data. [1.1.3]

- Clinical governance structures should be implemented in all places of birth. [1.1.2]
  - Multidisciplinary governance structures should be in place to enable the oversight of all places of birth. The clinical governance group should include, as a minimum: midwifery; obstetric; anaesthetic; consumer and neonatal expertise.
  - There should be agreed criteria for women planning to give birth in each setting.
  - Clear referral systems must be in place for midwives who wish to seek advice on the care of women whom they consider may have risk factors, but who wish to labour outside a consultant unit. A senior member of the midwifery team should be identified to fulfil this role, and clear referral paths need to be established.
  - If a woman has a risk factor (listed in ‘Assessment for choosing place of birth’) and wishes to give birth outside a consultant unit, a supervisor of midwives should be involved.
  - If an obstetric opinion is deemed necessary, this should be obtained from a consultant or an obstetrician with equivalent experience.
  - All healthcare professionals should document discussions with women about their chosen place of birth.
  - In all places of birth, the processes of risk assessment in the antenatal period and when labour commences should be subjected to continuous audit.
Clear pathways and guidelines on the indications for, and the process of transfer to, a consultant-led unit should be established, including the continued care of women and their babies. There should be no barriers to rapid transfer when required in an emergency. These pathways should include arrangements for when the nearest consultant unit is closed to admissions.

If the emergency is such that transfer is not appropriate, open access should be facilitated for all necessary staff.

There should be continuous audit of the appropriateness of the reason for and speed of transfer. This audit needs also to consider whether women who gave birth in the midwifery-led unit had indications for transfer and why that did not occur. Audit should also include time taken to see a specialist obstetrician and time from admission to birth once transferred.

Monthly figures of numbers of women booked, being admitted to, being transferred from and giving birth in each place of birth should be audited. This must include neonatal outcomes.

Any serious adverse outcome (for example, perinatal death or seizures in the newborn period) should be subject to detailed root cause analysis.

Communication between women and healthcare professionals

- All women in labour should be treated with respect and feel that their carers have the women’s best interests at heart. Women need to feel in control of and involved in what is happening to them, and the way in which care is given is key to this. To facilitate this, caregivers should establish a rapport with the labouring woman, asking her about her wants and expectations for labour. This information should be used to support and guide her through her labour and birth.¹[1.2.1]

Support in labour

- Once women are established in labour, they should not be left alone.

¹ See the full version of this guideline for recommendations on implementing good communication.
Immersion in water in the first stage

- Women should be offered immersion in water as it reduces pain and the numbers of women having an epidural without evidence of harm to the baby. [1.4.3]

Epidural analgesia

- Women should be offered epidural analgesia, and before choosing it, they should be informed that it: [1.4.14]
  - its availability is related to birth settings
  - provides the most effective pain relief
  - will be accompanied by a more intensive level of monitoring
  - is associated with a longer second stage of labour and an increased chance of vaginal instrumental birth
  - is not associated with an increased length of the first stage of labour or chance of caesarean birth.

Delay in the first stage of labour

- When there is delay in the first stage of labour nulliparous women should be informed that amniotomy with or without subsequent use of oxytocin will bring forward their time of birth but will not influence the mode of birth or other reported outcomes. [1.5.19]

Delay in the second stage of labour

- Instrumental birth is an operative procedure that should be undertaken with tested, effective analgesia, ideally epidural/spinal analgesia. [1.7.29]

Perineal care

- If genital trauma is present further systematic assessment should be carried out. This should include: [1.10.5]
  - further explanation of what you are going to do, and why
  - adequate local or regional analgesia confirmed by the woman should be in place
  - visualisation of the extent of perineal trauma and must include the structures involved, the apex of the injury, assessment of bleeding and a
rectal examination to assess whether there has been any damage to the internal or external anal sphincter.
1 Guidance

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

1.1 Planning place of birth

Risk and benefit of planning each place of birth

1.1.1 Women should be offered the choice of planning birth at home, in a midwifery-led unit or a consultant-led unit. Before making their choice, women should be informed of the potential risks and benefits of each birth setting. As a minimum this information should include:

- Planning birth at home:
  - increases the likelihood of a normal vaginal birth and satisfaction in women who are committed to giving birth in this setting, compared with planning birth in hospital
  - is likely to result in transfer to a hospital for between 10% and 45% of women in pregnancy and labour (nulliparous 40–75%; parous 10–40%) and between 4% and 20% of women in labour (nulliparous 30–55%; parous 1–15%).

- Planning birth in a standalone midwifery-led unit:
  - reduces the likelihood of pharmacological analgesia, and increases the likelihood of intact perineum, a spontaneous vaginal birth and satisfaction, compared with planning birth in a consultant-led unit
  - is likely to result in transfer to a consultant-led unit for about 30% of women in pregnancy and labour and about 12% of women in labour.

- Planning birth in an alongside midwifery-led unit:
- reduces the likelihood of pharmacological analgesia, and increases the likelihood of a spontaneous vaginal birth, and intact perineum, compared with planning birth in a consultant-led unit
- is likely to result in transfer to a consultant-led unit for 43–50% of women in pregnancy and labour (nulliparous about 55%; parous about 30%), and from 24% to 30% of women in labour (nulliparous about 35%; parous about 12%).

• Planning birth in a consultant-led unit:
  - means the woman is likely to have access to epidural analgesia
  - increases the likelihood of pharmacological analgesia, interventions and an instrumental birth, and decreases satisfaction, compared with planning birth in other birth settings.
  - There may be a lower risk of perinatal mortality when care is delivered in a consultant-led unit.

1.1.2 Clinical governance structures should be implemented in all places of birth.

- Multidisciplinary governance structures should be in place to enable the oversight of all places of birth. The clinical governance group should include, as a minimum: midwifery; obstetric; anaesthetic; consumer and neonatal expertise.
- There should be agreed criteria for women planning to give birth in each setting.
- Clear referral systems must be in place for midwives who wish to seek advice on the care of women whom they consider may have risk factors but who wish to labour outside a consultant unit. A senior member of the midwifery team should be identified to fulfil this role, and clear referral paths need to be established.
• If a woman has a risk factor (listed in ‘Assessment for choosing place of birth’) and wishes to give birth outside a consultant unit, a supervisor of midwives should be involved.

• If an obstetric opinion is deemed necessary, this should be obtained from a consultant or an obstetrician with equivalent experience.

• All healthcare professionals should document discussions with women about their chosen place of birth.

• In all places of birth, the processes of risk assessment in the antenatal period and when labour commences should be subjected to continuous audit.

• Clear pathways and guidelines on the indications for, and the process of transfer to, a consultant-led unit should be established, including the continued care of women and their babies. There should be no barriers to rapid transfer when required in an emergency. These pathways should include arrangements for when the nearest consultant unit is closed to admissions.

• If the emergency is such that transfer is not appropriate, open access should be facilitated for all necessary staff.

• There should be continuous audit of the appropriateness of the reason for and speed of transfer. This audit needs also to consider whether women who gave birth in the midwifery-led unit had indications for transfer and why that did not occur. Audit should also include time taken to see a specialist obstetrician and time from admission to birth once transferred.

• Monthly figures of numbers of women booked, being admitted to, being transferred from and giving birth in each place of birth should be audited. This must include neonatal outcomes.

• Any serious adverse outcome (for example, perinatal death or seizures in the newborn period) should be subject to detailed root cause analysis.
1.1.3 A national surveillance scheme which allows appropriate comparisons, including safety and cost effectiveness, of all places of birth should be established to address the poor quality and lack of coverage of current data.

Assessment for choosing place of birth

1.1.4 The following criteria are recommended to be used for assessment for choosing the place of birth.

- Conditions where the expected professional advice would be that a consultant-led unit birth would be preferable.
<table>
<thead>
<tr>
<th>Medical condition</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cardiovascular</strong></td>
<td>Cardiac disease</td>
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<tr>
<td></td>
<td>Currently on treatment</td>
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<tr>
<td></td>
<td>Requiring antibiotics in labour</td>
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<tr>
<td></td>
<td>Previously requiring open surgery</td>
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<td></td>
<td>Hypertensive disorders</td>
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<tr>
<td></td>
<td>Currently on treatment or considering treatment</td>
</tr>
<tr>
<td><strong>Respiratory</strong></td>
<td>Asthma requiring an increase in treatment or hospital treatment</td>
</tr>
<tr>
<td></td>
<td>Cystic fibrosis</td>
</tr>
<tr>
<td><strong>Haematological</strong></td>
<td>Haemoglobinopathies – sickle cell disease</td>
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<tr>
<td></td>
<td>Beta thalassaemia major</td>
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<tr>
<td></td>
<td>History of thromboembolic disorders</td>
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<tr>
<td></td>
<td>Immune thrombocytopenia purpura or other platelet disorder</td>
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<td></td>
<td>Von Willebrands disease</td>
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<tr>
<td></td>
<td>Bleeding disorder in mother or fetus</td>
</tr>
<tr>
<td></td>
<td>Rhesus disease</td>
</tr>
<tr>
<td></td>
<td>Atypical antibodies which carry a risk of haemolytic disease of the newborn</td>
</tr>
<tr>
<td><strong>Infective</strong></td>
<td>Risk factors associated with group B streptococcus such that advice is given to treat woman with antibiotics in this labour</td>
</tr>
<tr>
<td></td>
<td>Hepatitis B/C with abnormal liver function tests</td>
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<tr>
<td></td>
<td>Career/infection of human immunodeficiency virus</td>
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<tr>
<td></td>
<td>Toxoplasmosis-mother receiving treatment</td>
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<tr>
<td></td>
<td>Current active infection of chicken pox/rubella/genital herpes in women or babies</td>
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<tr>
<td></td>
<td>Tuberculosis on treatment</td>
</tr>
<tr>
<td><strong>Immune</strong></td>
<td>Systemic lupus erythematosus</td>
</tr>
<tr>
<td></td>
<td>Scleroderma</td>
</tr>
<tr>
<td><strong>Endocrine</strong></td>
<td>Hyperthyroidism (currently requiring treatment)</td>
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<tr>
<td></td>
<td>Hypothyroidism (if requiring a change in treatment)</td>
</tr>
<tr>
<td></td>
<td>Diabetes</td>
</tr>
<tr>
<td><strong>Renal</strong></td>
<td>Renal disease</td>
</tr>
<tr>
<td><strong>Neurological</strong></td>
<td>Epilepsy</td>
</tr>
<tr>
<td></td>
<td>Myasthenia gravis</td>
</tr>
<tr>
<td><strong>Gastro-Intestinal</strong></td>
<td>Liver disease associated with current abnormal liver function tests</td>
</tr>
<tr>
<td><strong>Obstetric history</strong></td>
<td>Unexplained stillbirth/neonatal death or previous death related to intrapartum difficulty</td>
</tr>
<tr>
<td></td>
<td>Previous baby with neonatal encephalopathy</td>
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<tr>
<td></td>
<td>Pre-eclampsia requiring preterm birth</td>
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<tr>
<td></td>
<td>Eclampsia</td>
</tr>
<tr>
<td></td>
<td>Uterine rupture</td>
</tr>
</tbody>
</table>
### Intrapartum care: NICE guideline DRAFT (June 2006)

| Previous gynaecological history | Myomectomy | Hysterotomy |

- In isolation, the factors listed below would not be contraindications for giving birth in a low risk setting, but advice would depend upon an individual assessment of the condition and progress of the present pregnancy. The list below is not exhaustive.
<table>
<thead>
<tr>
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<th><strong>Additional information</strong></th>
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</thead>
<tbody>
<tr>
<td>Cardiovascular</td>
<td>Cardiac disease</td>
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<tr>
<td></td>
<td>Conditions that have not required treatment</td>
</tr>
<tr>
<td>Haematological</td>
<td>Atypical antibodies where baby is not at risk of haemolytic disease</td>
</tr>
<tr>
<td></td>
<td>Sickle cell trait</td>
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<td></td>
<td>Thalassaemia trait</td>
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<tr>
<td></td>
<td>Anaemia haemoglobin 8.5–10.5 g/dl at onset of labour</td>
</tr>
<tr>
<td>Infective</td>
<td>Hepatitis B/C with normal liver function tests</td>
</tr>
<tr>
<td>Immune</td>
<td>Non-specific connective tissue disorders</td>
</tr>
<tr>
<td>Endocrine</td>
<td>Hypothyroidism (if stable)</td>
</tr>
<tr>
<td>Skeletal/Neurological</td>
<td>Spinal abnormalities</td>
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<tr>
<td></td>
<td>Previous fractured pelvis</td>
</tr>
<tr>
<td></td>
<td>Neurological defects</td>
</tr>
<tr>
<td>Gastro-Intestinal</td>
<td>Liver disease without currently abnormal liver function</td>
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<tr>
<td></td>
<td>Crohns disease</td>
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<td></td>
<td>Ulcerative colitis</td>
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<tr>
<td>Obstetric history</td>
<td></td>
</tr>
<tr>
<td>Previous complications</td>
<td>Stillbirth/neonatal death with a known non-recurrent cause</td>
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<tr>
<td></td>
<td>Pre-eclampsia developing at term</td>
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<tr>
<td></td>
<td>Placental abruption</td>
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<tr>
<td></td>
<td>History of previous baby &gt;4.5 kg</td>
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<td>Extensive vaginal, cervical of 3rd or 4th degree perineal trauma</td>
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<td>Previous term baby with jaundice requiring treatment</td>
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<tr>
<td>Current pregnancy</td>
<td>Antepartum bleeding of unknown origin (single episode)</td>
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<tr>
<td></td>
<td>Body mass index 30–34 kg/m²</td>
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<td></td>
<td>Blood pressure of 150 mm Hg systolic or 90 mm Hg diastolic on two occasions</td>
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<tr>
<td></td>
<td>Clinically large for gestational age baby</td>
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<tr>
<td></td>
<td>Para 6 or more</td>
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<tr>
<td>Fetal indications</td>
<td>Fetal abnormality</td>
</tr>
<tr>
<td>Previous gynaecological history</td>
<td>Major gynaecological surgery</td>
</tr>
<tr>
<td></td>
<td>Cone biopsy or LLETZ (large loop excision of the transformation zone)</td>
</tr>
<tr>
<td></td>
<td>Fibroids</td>
</tr>
</tbody>
</table>

- Criteria for midwifery-led care in labour:
  - normal pregnancy without complications (see list above)
  - up to and including Para 5 with uncomplicated previous deliveries
  - labouring at term (37–42 completed weeks)
− singleton pregnancy with cephalic presentation
− does not want an epidural.

- Criteria for transfer to obstetric-led care during labour:
  - absence of fetal heart rate
  - maternal request for epidural pain relief
  - obstetric emergency – cord presentation/prolapse, retained placenta, postpartum haemorrhage, severe fetal distress, maternal or neonatal collapse
  - third/fourth degree or other complicated perineal trauma in this birth for suturing
  - maternal pyrexia in labour 38.0°C once or 37.5°C on two occasions 2 hours apart
  - undiagnosed malpresentation or breech presentation
  - raised diastolic either blood pressure greater than 90 mmHg or systolic over 140 mmHg on two consecutive readings taken 30 minutes apart.

1.2 Care throughout labour

Communication between women and healthcare professionals

1.2.1 All women in labour should be treated with respect and feel that their carers have the women’s best interests at heart. Women need to feel in control of and involved in what is happening to them, and the way in which care is given is key to this. To facilitate this, caregivers should establish a rapport with the labouring woman, asking her about her wants and expectations for labour. This information should be used to support and guide her through her labour and birth².

² See the full version of this guideline for recommendations on implementing good communication.
Mobilisation

1.2.2 Women should be encouraged to move and adopt whatever positions they find most comfortable throughout labour.

Support in labour

1.2.3 Once women are established in labour, they should not be left alone.

1.2.4 Women should be encouraged to have support by a birth partner of their choice.

1.2.5 One-to-one supportive care should be provided ideally from a trained practitioner.

1.2.6 Continuity of carer provided by teams of midwives providing systems of care from the antenatal through intrapartum to the postnatal period is not recommended.

Eating and drinking in labour

1.2.7 H$_2$ receptor antagonists and antacids should not be given routinely to women in labour.

1.2.8 Women may take a light diet during labour.

1.2.9 Women should be encouraged to drink during labour, and be informed that isotonic drinks are more beneficial than water.

Hygiene measures during labour

1.2.10 Chlorhexidine vaginal douching and chlorhexidine for vulval cleansing should not be used prior to vaginal examination in labour for preventing maternal and neonatal infections.

1.2.11 Obvious perineal soiling should be removed before vaginal examination and vaginal birth.

1.2.12 Routine hygiene measures in labour, including standard hand hygiene and single gloving, are appropriate to reduce cross-contamination and infection between mothers and babies.
1.2.13 The pool should be kept clean using a protocol agreed with the microbiologists.

1.3 *Prelabour rupture of membrane at term and meconium stained liquor*

**Prelabour rupture of membrane at term**

1.3.1 Women with an uncertain history of prelabour rupture of the membranes at term should be offered a speculum examination to determine if their membranes have ruptured.

1.3.2 Women with prelabour rupture of the membranes should be offered the choice of either expectant management (watch and wait) or induction of labour. Before making their choice, they should be informed that:

- the majority of women would go into labour within 24 hours if labour is not induced, but that waiting longer than this is linked to more infections in the mother and baby
- the risk of serious neonatal infection increases from 1% to between 2% and 9% when labour starts more than 24 hours after prelabour rupture of membranes
- should they choose expectant management, at 24 hours they should be offered the choice of one of the following options:
  - no prophylactic antibiotics to either the woman or baby
  - prophylaxis to the woman with intravenous antibiotics
  - babies be given a prophylactic antibiotic.

1.3.3 Digital vaginal examination in the absence of contractions should be avoided, until their decision has been made.

1.3.4 If expectant management is chosen:

- lower vaginal swabs and maternal C-reactive protein should not be offered to women at the initial assessment
• maternal temperature should be recorded 4 hourly during waking hours (this may be recorded by the mother)
• fetal movement and fetal heart rate should be assessed at initial contact and again every 24 hours, should the woman not be in labour
• if labour does not commence more than 24 hours after term prelabour rupture of membranes, the woman should be offered the choice of one of the following options:
  – no prophylactic antibiotics to either herself or her baby
  – prophylaxis to herself with intravenous antibiotics
  – her baby be given a prophylactic antibiotic.

1.3.5 Women choosing expectant management should be informed that they should report immediately any change in the colour or smell of their vaginal loss.

1.3.6 Asymptomatic term infants born to mothers with prolonged rupture of the membranes longer than 24 hours, who have not received intravenous antibiotics at least 4 hours prior to birth, should be closely observed for the first 12 hours of age.

1.3.7 The observations should include:

• general well-being
• chest movement and nasal flare
• skin colour including perfusion, by testing for capillary refill
• feeding
• muscle tone
• temperature
• heart rate and respiratory rate
Observations should be performed at 1 hour of age then 2 hourly until 12 hours of age.

1.3.8 Women with prolonged rupture of membranes (longer than 24 hours) should be encouraged to inform her caregivers immediately
should she have any concerns about her baby’s well-being in the first 5 days following birth particularly in the first 12 hours as the risk of infection is greatest then.

1.3.9 An infant with any symptom of possible sepsis should immediately be referred to a neonatal care specialist.

1.3.10 Blood, cerebral-spinal fluid and/or surface culture should not be performed routinely in an asymptomatic infant.

**Meconium stained liquor**

1.3.11 Significant meconium stained liquor is defined as either dark green or black fluid that is thick or tenacious, or any meconium stained fluid containing lumps of meconium.

1.3.12 Amnioinfusion should not be used for the treatment of meconium stained liquor.

**1.4 Choosing pain relief in labour**

**Non-invasive analgesic techniques**

1.4.1 Women who choose to use breathing and relaxation techniques should be supported as these may enhance their birth experience.

1.4.2 Women who choose massage techniques in labour that have been taught to birth partners should be supported as this improves their birth experience.

1.4.3 Women should be offered immersion in water as it reduces pain and the numbers of women having an epidural without evidence of harm to the baby.

1.4.4 The temperature of the water should be monitored such that the woman is comfortable and not pyrexial – a temperature not above 37.5°C.

1.4.5 The use of injected water papules is not recommended.
1.4.6 Women who wish to use acupuncture and hypnosis should not be discouraged in their choice.

1.4.7 The playing of music, of the women’s choice, in the labour ward should be supported.

**Non-pharmacological analgesia**

1.4.8 Transcutaneous electronical nerve stimulation (TENS) should not be offered to women in established labour.

**Inhalational analgesia**

1.4.9 Women should be offered Entonox (50:50 mixtures of oxygen and nitrous oxide) as it may reduce pain in labour, but they should also be informed that they may feel nauseous and light headed.

1.4.10 Entonox should be available for women to use during labour in all birth settings.

**Intravenous and intramuscular use of opioids for labour**

1.4.11 Pethidine or other opioids may be offered to women but they should be aware that they will only provide limited pain relief during labour and may have significant side effects for both herself (drowsiness, nausea and vomiting) and her baby (respiratory depression and drowsiness).

1.4.12 If a parenteral opioid is used, it should be administered with an anti-emetic.

1.4.13 Women should not enter a pool within 2 hours of opioid administration or if they feel drowsy.

**Regional analgesia**

1.4.14 Women should be offered epidural analgesia, and before choosing it, they should be informed that:

- its availability is related to birth settings
- it provides the most effective pain relief
• it will be accompanied by a more intensive level of monitoring
• it is associated with a longer second stage of labour and an increased chance of vaginal instrumental birth
• it is not associated with an increased length of the first stage of labour or chance of caesarean section.

1.4.15 Women in established or early labour who desire regional analgesia should not be denied it.

1.4.16 Either epidural or combined spinal-epidural analgesia is recommended for establishing regional analgesia in labour.

1.4.17 If rapid analgesia is required, combined spinal-epidural analgesia is recommended.

1.4.18 It is recommended that combined spinal-epidural analgesia is established with bupivacaine 2.5 mg and 15 micrograms fentanyl.

1.4.19 It is recommended that epidural analgesia should be established with a low dose local anaesthetic and opioid solution with, for example, 10–15 ml 0.0625–0.1% bupivacaine with fentanyl. The initial dose of local anaesthetics plus opioid is essentially a test dose and as such should be administered cautiously to ensure that inadvertent intrathecal injection has not occurred.

1.4.20 Low concentration local anaesthetic solutions combined with opioids are recommended for epidural analgesia in labour.

1.4.21 High concentrations of local anaesthetic solutions (0.25% or above of bupivacaine or equivalent) should not be used.

1.4.22 Either patient controlled epidural analgesia or intermittent bolus by hospital staff are the preferred modes of administration for maintenance of epidural analgesia.

1.4.23 Intravenous access should always be secured prior to commencing regional analgesia.
1.4.24 Preloading and maintenance fluid infusion need not routinely be administered before establishing low dose epidural analgesia and combined spinal-epidural analgesia.

1.4.25 Additional observations for women with a regional analgesia are given below.

- During establishment of regional analgesia or after further boluses (10 ml or more of low dose solutions), blood pressure should be measured every 5 minutes for 15 minutes.
- If the woman is not pain free 30 minutes after each administration of local anaesthetic/opioid solution, the anaesthetist must be recalled.
- Hourly assessment of the extent of the sensory block should be undertaken.

1.4.26 Women with regional analgesia should be encouraged to move and adopt whatever positions they find comfortable throughout labour.

1.4.27 Once established, epidural analgesia should not be discontinued until after completion of the third stage and any necessary perineal repair.

1.4.28 Following the diagnosis of full dilatation in a woman with epidural analgesia, a plan should be made with the woman, in order to ensure that birth will have occurred within 4 hours regardless of parity.

1.4.29 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 pushing during contractions should be actively encouraged.

1.4.30 Oxytocin should not be used routinely in the second stage, for women with epidural analgesia.
1.5 Care in the first stage of labour

Definition of the first stage of labour

1.5.1 For the purposes of this guideline, the Guideline Development Group recommends the definitions of labour given below.

- Early first stage of labour:
  - a period of time, not necessarily continuous, when there are:
    - painful contractions, and
    - evidence of progressive cervical change, including cervical effacement.
- Definition of the first stage of labour:
  - established first stage of labour:
    - regular painful contractions, and
    - cervical dilatation of 4 or more centimetres.
- There is a group of women who have pain without cervical change. Although these women should be described as not being in labour, they may need support and encouragement, and they may well consider themselves ‘in labour’ by their own definition.

Duration of the first stage of labour

1.5.2 Women should be informed that their first labour, once established, may last up to 18 hours and their second and subsequent labours may last up to 12 hours.

Definition of delay in the first stage of labour

1.5.3 A diagnosis of delay in the first stage of labour needs to take into consideration all aspects of progress in labour and should include:

- 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 fetal head
- changes in strength, duration and frequency of uterine contractions.
Observations on presentation in suspected labour

1.5.4 The initial assessment of a woman should include:

- listening to her story, considering her emotional and psychological needs and reviewing her clinical records
- basic physical observation – temperature, pulse, blood pressure, urinalysis
- length, strength and frequency of contractions
- abdominal palpation – fundal height, lie, presentation, position and station
- vaginal loss (show, liquor, blood)
- empathic verbal assessment for the women’s pain using a numerical rating scale, including assessment of her desire for pain relief
- if requested by the woman, a vaginal examination should be performed. If, after a period of assessment, birth is not imminent it may be helpful to carry out a vaginal examination to determine whether the woman is in established labour
- the fetal heart rate should be auscultated for a minimum of 1 minute immediately after a contraction. The maternal pulse should be palpated to differentiate between maternal and fetal heart rate.

1.5.5 The use of the admission cardiotocography (CTG) in low risk pregnancy is not recommended in any birth setting.

1.5.6 Women who seek advice or attend hospital with painful contractions but who are not in established labour should be offered individualised support and encouraged to remain at or return home.

1.5.7 Clinicians who conduct vaginal examinations should:

- be sure that the vaginal examination is really necessary and will add important information to the decision making process
be aware that to many women who may already be in pain, frightened and in a strange environment, they can be very distressing
ensure the woman’s privacy, dignity and comfort
explain the reason for the examination and what will be involved, and
explain the findings and their impact sensitively to the woman.

Observations during the established first stage of labour

1.5.8 Observations to be documented during the first stage include:

- 4 hourly temperature and blood pressure
- hourly pulse
- half-hourly documentation of frequency of contractions
- documentation that the woman’s bladder is being emptied regularly
- ongoing consideration of the woman’s emotional and psychological needs.

1.5.9 A vaginal examination should be offered 4 hourly or in response to the woman’s wishes (after abdominal palpation and assessment of vaginal loss).

1.5.10 It is recommended that a pictorial record of labour (partogram) be used.

1.5.11 An empathic verbal assessment of the woman’s pain, using a numerical rating scale, including assessment of her desire for pain relief should be undertaken:

- whenever a vaginal examination is offered (4 hourly)
- to assess the efficacy of analgesia
- and otherwise, as circumstances change.

1.5.12 Women should be encouraged to communicate their need for analgesia at any point during labour.
Routine interventions in first stage of labour
1.5.13 The package known as active management of labour should not be routinely offered.

1.5.14 Where the partogram includes an action line then the World Health Organization recommendation of a 4-hour action line should be used.

1.5.15 In normally progressing labour, amniotomy should not be performed routinely.

1.5.16 Combined early amniotomy with routine use of oxytocin should not be routinely used.

Interventions for perceived delay in first stage of labour
1.5.17 Where a diagnosis of delayed first stage has been made:
   • amniotomy should be discussed and offered to women with intact membrane
   • if a woman has had ruptured membrane for over 4 hours, she should be reviewed by an experienced obstetrician
   • if a woman has had ruptured membrane for less than 4 hours, she should be reassessed vaginally after 4 hours from the time of the membrane rupture, and then reviewed by an experienced obstetrician if labour is still delayed.

1.5.18 Once the diagnosis of delay in the first stage has been made, if there is no satisfactory progress at the time of next assessment, women should be reviewed by a senior obstetrician.

1.5.19 When there is delay in the first stage of labour nulliparous women should be informed that amniotomy with or without subsequent use of oxytocin will bring forward their time of birth but will not influence the mode of birth or other reported outcomes.

1.5.20 Women should be informed that oxytocin will increase the frequency and strength of their contractions.
1.5.21 All women with a delay in the first stage of labour should be offered support and appropriate and effective pain relief.

1.5.22 Before oxytocin is considered for multiparous women with a delay in the first stage of labour, an experienced obstetric practitioner should make a full assessment, including an abdominal palpation and vaginal examination.

1.5.23 Continuous electronic fetal monitoring should be used when oxytocin is administered for augmentation.

1.5.24 Where oxytocin is used, the time between increments of the dose should be no more frequent than every 30 minutes.

1.6 Monitoring babies in labour

Appropriate monitoring method for low risk women

1.6.1 The use of intermittent auscultation of the fetal heart rate is recommended for low risk women in established labour in any birth setting.

1.6.2 Initial auscultation of the fetal heart is recommended at first contact in early labour and at each further assessment, to determine if labour has become established.

1.6.3 Once a woman is in established labour, intermittent auscultation of the fetal heart should occur after a contraction for a minimum of at least a minute, at least every 15 minutes, and the rate recorded as an average. The maternal pulse should be palpated on each occasion to differentiate between maternal and fetal heart rate.

1.6.4 Intermittent auscultation can be undertaken by either Doppler ultrasound or Pinards stethoscope.

1.6.5 Reasons to transfer low risk women from intermittent auscultation to continuous EFM include:

- significant meconium liquor
• abnormal fetal heart rate on intermittent auscultation (less than 110 beats per minute (bpm), greater than 160 bpm, presence of decelerations)
• maternal pyrexia (37.5 x 2 or more than 38°C)
• fresh bleeding developing in labour
• oxytocin use for augmentation
• maternal request.

**Indications for continuous cardiotocography (CTG)**

1.6.6 Women with significant meconium stained liquor, defined as either dark green or black fluid that is thick or tenacious or any meconium stained fluid containing lumps of meconium, should have continuous electronic fetal monitoring.

1.6.7 Lightly meconium stained liquor alone does not indicate a requirement for continuous electronic fetal monitoring or transfer to a consultant unit from midwifery-led unit or home.

1.6.8 During establishment of regional analgesia, or after further boluses (10 ml or more of low dose), continuous fetal heart rate monitoring should be undertaken for at least 20 minutes.

**Interpretation of cardiotocography (CTG)**

1.6.9 The definitions below (table 1) and categorisations (table 2) of fetal heart rate trace are recommended.

**Table 1 Definitions of fetal heart rate trace**

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>A cardiotocograph where all four features fall into the reassuring category</td>
</tr>
<tr>
<td>Suspicious</td>
<td>A cardiotocograph whose features fall into one of the non-reassuring categories and the remainder of the features are reassuring</td>
</tr>
<tr>
<td>Pathological</td>
<td>A cardiotocograph whose features fall into two or more non-reassuring categories or one or more abnormal categories</td>
</tr>
</tbody>
</table>
Table 2 Categorisations of fetal heart rate features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Baseline (bpm)</th>
<th>Variability (bpm)</th>
<th>Decelerations</th>
<th>Accelerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reassuring</td>
<td>110–160</td>
<td>≥ 5</td>
<td>None</td>
<td>Present</td>
</tr>
<tr>
<td>Non-reassuring</td>
<td>100–109</td>
<td>&lt; 5 for ≥ 40 but less than 90 minutes</td>
<td>Variable deceleration</td>
<td>The absence of accelerations with otherwise normal cardiotocograph decelerations is of uncertain significance</td>
</tr>
<tr>
<td></td>
<td>161–180</td>
<td></td>
<td>Single prolonged deceleration up to 3 minutes</td>
<td></td>
</tr>
<tr>
<td>Abnormal</td>
<td>&lt; 100</td>
<td>&lt; 5 for ≥ 90 minutes</td>
<td>Atypical variable late decelerations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; 180</td>
<td></td>
<td>Single prolonged deceleration &gt; 3 minutes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sinusoidal pattern ≥ 10 minutes</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Clarification of duration for definitions of non-reassuring cardiotocograph is given below.
  - If repeated accelerations are present with reduced variability, the cardiotocograph should be regarded as reassuring.
  - True early decelerations are rare and benign, and therefore they are not significant.
  - Most decelerations in labour are variable.
  - Typical variable decelerations with over 50% of contractions, occurring for over 90 minutes, should be defined as non-reassuring.
  - Either atypical variable decelerations with over 50% of contractions or late decelerations, both for over 30 minutes, should be defined as pathological.
  - If a fetal bradycardia occurs for more than 3 minutes, plans should be made to urgently expedite the birth of the baby, classified as category 1 birth, including moving the woman to theatre. If the fetal heart recovers within 9 minutes, that decision should be re-considered if reasonable and in conjunction with the woman.
A fetal tachycardia of 160 to 180 bpm, where accelerations are present and no other adverse features appear, should not be regarded as suspicious.

1.6.10 For women having continuous fetal heart rate tracing, a documented systematic assessment based on the categorisations developed in this guideline should be undertaken every hour.

1.6.11 Monitoring of the fetal heart in the presence of oxytocin:

- if the cardiotocograph is normal, oxytocin may be continued until the woman is experiencing four or five contractions every 10 minutes. Oxytocin should be reduced if contractions occur at more than 5:10 minutes
- if the cardiotocograph is classified as suspicious, oxytocin should only continue to increase to achieve four or five contractions every 10 minutes, after review by an experienced obstetrician
- if cardiotocograph is classified as pathological, oxytocin should be stopped and a full assessment of the fetal condition undertaken by an experienced obstetrician, before it is recommenced.

**Adjuncts to the use of cardiotocography (CTG)**

1.6.12 Digital stimulation should be considered as an adjunct to other forms of fetal assessment.

1.6.13 Fetal blood sampling is recommended in the presence of a pathological cardiotocograph.

1.6.14 Repeat fetal blood sampling is recommended 1 hour after a first test if the cardiotocograph remains pathological.

1.6.15 The time taken to perform a fetal blood sampling needs to be considered when planning repeat samples.
1.6.16 If the cardiotocograph remains unchanged, and the fetal blood sampling result is stable after the second test, then a further sample may be deferred unless there are additional abnormalities on the cardiotocograph.

1.6.17 Where a third fetal blood sampling is considered necessary, senior obstetric opinion should be sought.

Conduct of monitoring babies in labour

1.6.18 Clinicians should be aware of the time taken to achieve birth by both instrumental vaginal birth and caesarean section when making decisions regarding concern over fetal well-being in labour.

1.6.19 Electronic fetal monitoring traces should be kept for 25 years and where possible stored electronically.

1.6.20 Electronic fetal monitoring traces should be photocopied and stored indefinitely in cases of possible adverse outcomes.

1.6.21 Tracer systems should be available for all cardiotocographs, if stored separately from women’s records.

1.6.22 A system should be in place for repair and replacement of cardiotocography equipment.

1.6.23 Paired cord blood gases should not be taken routinely. They may be taken when there has been concern about the baby either in labour or immediately following birth.

1.6.24 An additional clamp to facilitate double clamping of the cord, if indicated, should be available for all birth settings.

1.6.25 Women should be aware that their mobility will be restricted if they require continuous fetal monitoring.
1.7  Care in the second stage of labour

Definition of labour

1.7.1 The Guideline Development Group recommends the definitions of labour given below.

- The definition of the early second stage of labour:
  - the finding of full dilatation of the cervix prior to, or in the absence of, involuntary expulsive contractions.

- The definition of the onset of the established second stage of labour:
  - involuntary expulsive contractions, and
  - the baby is visible or there are signs of full dilatation of the cervix, or
  - there is active maternal effort, following confirmation of full dilatation of the cervix, in the absence of expulsive contractions.

Duration and definition of delay in the second stage of labour

1.7.2 Nulliparous women: if the established second stage lasts more than 2 hours, women should be referred to the appropriate clinician if birth is not imminent. Birth should take place within 3 hours of the start of the established second stage.

1.7.3 Parous women: if the established second stage lasts more than 1 hour, women should be referred to the appropriate clinician if birth is not imminent. Birth should take place within 2 hours of the start of the second stage.

1.7.4 Progress can be determined with increasing rotation, flexion and descent of the fetal head. Assessment (including abdominal palpation and vaginal examination and verbal pain score) should be recommended to women after an hour of pushing in nulliparous women, and half an hour of pushing in parous women.
1.7.5 In the absence of progress, a referral to the appropriate clinician should be considered. Also, consider the woman’s hydration, position and need for pain relief. Support and sensitive encouragement are particularly important in these circumstances.

Observations in the second stage of labour
1.7.6 Observations of the woman in second stage include:

- hourly blood pressure and pulse
- continued 4 hourly temperatures
- a vaginal examination should be offered hourly in the established second stage, or in response to the woman’s wishes (after abdominal palpation and assessment of vaginal loss)
- half-hourly documentation of the frequency of contractions
- documentation of frequency of bladder emptying, and
- ongoing consideration of the woman’s emotional and psychological needs.

1.7.7 Intermittent auscultation of the fetal heart should occur after a contraction for a minimum of at least a minute, at least every 5 minutes (the maternal pulse should be checked, if there is suspected fetal bradycardia).

1.7.8 At the beginning and during the second stage of labour, communication between the woman and carer should include discussion about how she is feeling, what she feels she needs and what would help.

1.7.9 If there are signs the woman is excessively distressed and feels she is losing control, measures should be taken to assist her. These may include reassurance, change of position or analgesia.

Women’s position and pushing in the second stage of labour
1.7.10 Women should be discouraged from remaining supine in the second stage of labour and should be encouraged to adopt any other position that they find most comfortable.
1.7.11 Women should be informed that in the second stage they should be guided by their own urge to push.

1.7.12 If pushing is ineffective or if requested by the woman, strategies to assist birth can be used, such as support, change of position and encouragement.

**Interventions in the second stage of labour**

1.7.13 Perineal massage should not be performed in the second stage of labour.

1.7.14 Lidocaine spray should not be used to reduce pain in the second stage of labour.

1.7.15 Either the 'hands on' or the 'hands poised' technique can be used to facilitate spontaneous birth.

1.7.16 A routine episiotomy should not be carried out during spontaneous vaginal birth.

1.7.17 A mediolateral episiotomy should be performed if there is a clinical need such as instrumental birth, suspected fetal compromise or anticipated severe perineal trauma.

1.7.18 Adequate pain relief should be provided prior to carrying out an episiotomy.

1.7.19 Women with a history of severe perineal trauma should be informed that their risk of repeat severe perineal trauma is not increased in a subsequent birth, compared with women having their first baby.

1.7.20 In order for the woman to make an informed choice, the discussion with the woman about the future mode of birth should encompass:

- current urgency or continence 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.

1.7.21 Episiotomy should not be routinely offered at vaginal birth following previous third or fourth degree trauma.

Immersion in water in the second stage
1.7.22 Women should be informed that there is insufficient quality evidence to encourage or discourage birth in water.

Delay in the second stage of labour
1.7.23 Where a diagnosis of delayed second stage has been made, amniotomy should be discussed and offered to the woman.

1.7.24 In nulliparous women, oxytocin should only be started in the second stage of labour with the offer of regional analgesia, if delay has been diagnosed and if there is clinical evidence of inadequate uterine activity.

1.7.25 In parous women, oxytocin should not be started in the second stage.

1.7.26 The choice of instrument depends on a balance of clinical circumstance, practitioner experience and, where appropriate, women’s choice.

1.7.27 Instrumental birth is an operative procedure that should be undertaken with tested, effective analgesia, ideally epidural/spinal analgesia.

1.7.28 Instrumental birth would be indicated for concern about fetal well-being, or for prolonged second stage.

1.7.29 On rare occasions, the woman’s need for help in the second stage may be an indication to expedite events by offering instrumental birth.
1.8 **Immediate care of newborn**

**Initial neonatal assessment**

1.8.1 The baby should be passed to the mother immediately after birth and skin-to-skin contact encouraged.

1.8.2 The baby should be dried and an outer covering such as a warm, dry blanket or towel used to prevent the baby losing heat while maintaining skin-to-skin contact with the mother.

1.8.3 The Apgar score at 1 and 5 minutes should be routinely recorded for all births.

1.8.4 If the baby is born in poor conditions (the Apgar score at 1 minute is 5 or less), then the time to the onset of regular respirations should be recorded and the cord double clamped to allow paired cord blood gases to be taken.

1.8.5 Separation within the first hour of birth of a woman and her baby for routine postnatal procedures, for example weighing, measuring and bathing, should be avoided unless requested by the mother.

1.8.6 For those women wishing to breastfeed, this should be encouraged as soon as possible after birth, ideally within an hour.

1.8.7 Head circumference and birth weight should be recorded soon after the first hour following birth.

1.8.8 An initial examination should be undertaken by a competent clinician to exclude major physical abnormality and to identify any problems that require referral.

1.8.9 Wherever possible, any examination or treatment of the baby should be undertaken in the presence of, or with the knowledge of, the parents.
Resuscitation of babies

1.8.10 All relevant healthcare professionals caring for women during birth should attend a course in neonatal resuscitation, at least annually, which is consistent with the algorithm adopted by newborn life support (Resuscitation Council [UK]).

1.8.11 Air alone should be used for basic resuscitation.

1.8.12 Oxygen should be available for babies who do not respond once adequate ventilation has been established.

1.8.13 Emergency referral pathways for both mother and baby should be developed and implemented for all birth settings.

1.8.14 Significant meconium stained liquor is defined as either dark green or black fluid that is thick or tenacious or any meconium stained fluid containing lumps of meconium.

1.8.15 In this instance, caregivers trained in fetal blood sampling should be available in labour, and caregivers trained in advanced neonatal life support should be present at the birth.

1.8.16 Suctioning of the nasopharynx and oropharynx prior to delivery of the shoulders and trunk should not be carried out.

1.8.17 If the baby is in good condition, it should not be suctioned, but should be closely observed for signs of respiratory distress in the first hour of life.

1.8.18 Only if the baby has blood or lumps of meconium present in the oropharynx should the upper airways be suctioned.

1.8.19 If the baby has depressed vital signs, laryngoscopy and suction under direct vision should be carried out by a caregiver trained in advanced neonatal support.
1.9 **Care in the third stage of labour**

**Definition and duration of the third stage of labour**

1.9.1 The Guideline Development Group recommends the definitions of labour given below.

- Third stage of labour:
  - from the birth of the baby to the expulsion of the placenta.

1.9.2 Duration of the third stage:

- the third stage of labour is delayed, if not completed within half an hour of birth with active management.
- if physiological management is chosen, this time limit does not apply.

**Women's observations in the third stage of labour**

1.9.3 Observations of the woman in third stage include:

- general physical condition and vaginal blood loss
- in the presence of haemorrhage, retained placenta or maternal collapse, other observations would be required.

**Routine management of the third stage**

1.9.4 Active management of the third stage is recommended.

1.9.5 Women at low risk of postpartum haemorrhage who request physiological management should be supported in their choice.

1.9.6 Active and physiological management should not be mixed.

1.9.7 Oxytocin 10 international units is recommended for the active management of the third stage of labour.

1.9.8 In the third stage of labour, routine oxytocin should not be used outside active management (defined as a management that includes all three components, prophylactic oxytocics, early cord clamping/cutting and controlled cord traction).
1.9.9 In the third stage of labour, routine umbilical oxytocin infusion should not be used.

1.9.10 Prostaglandin should not be used in the routine management of the third stage of labour.

**Treatment of retained placenta**

1.9.11 Intravenous infusion of oxytocin should not be used to reduce the need for manual removal of placenta.

1.9.12 Umbilical oxytocin injection for women with retained placenta should be used.

1.9.13 When using umbilical oxytocin, the dose should be 20 IU in 20 ml saline.

1.9.14 Women should be informed that assessment of the need for removal of a retained placenta can be painful, and they should be offered analgesia or even anaesthesia.

1.9.15 If a woman reports inadequate pain relief the clinician must immediately stop the examination and address this need.

1.9.16 If manual removal is required this must be carried out under effective regional anaesthesia (or general anaesthesia when necessary).

**Management of postpartum haemorrhage**

1.9.17 No particular uterotonic can be recommended over another for treatment of postpartum haemorrhage.

1.9.18 Treatment combinations might include repeat bolus of oxytocin (intravenous), ergometrine (intramuscular), syntometrine (intramuscular), misoprostol, infusion of Syntocinon, carboprost (intramuscular) for treatment of postpartum haemorrhage.

1.9.19 Additional therapeutic options include aprotinin (intravenous), tranexamic acid (intravenous) and rarely, in the presence of
otherwise normal clotting factors, rFactor VIIa for the treatment of postpartum haemorrhage.

1.9.20 If possible, a member of the team should be allocated to remain with the woman and her partner to ensure communication and offer support throughout the emergency situation.

1.9.21 No particular surgical procedure can be recommended above another for the treatment of postpartum haemorrhage.

1.9.22 Women with risk factors for postpartum haemorrhage should be advised to give birth in a consultant-led unit.

1.9.23 Women with risk factors for postpartum haemorrhage should not be treated differently, but this should be highlighted in the women’s notes.

1.9.24 Clinicians should have strategies in place in order to respond quickly and appropriately should a postpartum haemorrhage occur.

### 1.10 Care of the mother immediately after birth

**Maternal observations immediately following birth**

1.10.1 The following observations should be taken following the birth of the baby:

- maternal observations – temperature, pulse, blood pressure, uterine contraction, lochia
- examination of placental and membranes – assessment of completeness.
- early assessment of maternal emotional/psychological condition in response to labour
- documentation of bladder voiding

**Perineal care**

1.10.2 Perineal trauma should be defined 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 (EAS) thickness torn
  – 3b – more than 50% of EAS thickness torn
  – 3c – internal anal sphincter (IAS) torn
• fourth degree – injury to the perineum involving the anal sphincter complex (EAS and IAS) and anal epithelium.

1.10.3 Before assessing for the presence of genital trauma:

• explain to the mother what you are going to do, and why
• inhalational analgesia should be offered
• the woman’s position should be such that she is comfortable but that the structures can be visualised properly
• good lighting is essential.

1.10.4 The examination should be performed gently and with sensitivity.

1.10.5 If genital trauma is present further systematic assessment should be carried out. This should include:

• further explanation of what you are going to do, and why
• adequate local or regional analgesia confirmed by the woman should be in place
• visualisation of the extent of perineal trauma and must include the structures involved, the apex of the injury, assessment of bleeding and a rectal examination to assess whether there has been any damage to the internal or external anal sphincter.

1.10.6 Referral to a more experienced clinician should occur if uncertainty exists as to the nature or extent of trauma sustained.

1.10.7 The systematic assessment and its results should be documented.
1.10.8 Women should be informed that if the perineal muscle is torn the wound should be stitched in order to improve healing.

1.10.9 First degree trauma may be left unsutured if the edges are well opposed following discussion with the woman.

1.10.10 Second degree perineal trauma should be sutured.

1.10.11 Repair of the perineum should be undertaken as soon as possible to minimise the risk of infection and blood loss.

1.10.12 Women should only be in the lithotomy position during the systematic assessment, if required, and for the repair itself.

1.10.13 Perineal repair should only be undertaken with adequate, tested analgesia in place (spinal anaesthesia may be necessary). Up to 20 ml 1% lidocaine or equivalent can be given.

1.10.14 If the woman reports inadequate pain relief at any point this must be addressed.

1.10.15 Perineal repair should be undertaken using a continuous non-locked suturing technique for the muscle layer.

1.10.16 If the skin is opposed there is no need to suture it.

1.10.17 Where the skin does require suturing it should be undertaken using a continuous subcuticular technique.

1.10.18 An absorbable synthetic suture material should be used to suture the perineum.

1.10.19 Principals of repair – the following basic principals should be observed when performing perineal repairs:

- perineal trauma should be repaired using aseptic techniques
- check equipment, count swabs and needles prior to commencing the procedure, and count again following completion of the repair

Principal of repair – the following basic principals should be observed when performing perineal repairs:
• good lighting is essential to visualise and identify structures involved
• ask for more experienced assistance if in doubt regarding the extent of the trauma or structures involved
• difficult trauma should be repaired by an experienced practitioner in theatre under regional or general anaesthesia. Insert an indwelling catheter for 24 hours to prevent urinary retention
• ensure good anatomical alignment of the wound and give consideration to cosmetic results
• rectal examination after completing the repair will ensure that suture material has not been accidentally inserted through the rectal mucosa
• following completion of the repair an accurate detailed account of the extent of the trauma, the method of repair and the materials used should be documented
• information should be given to women regarding the extent of trauma, pain relief, diet, hygiene and importance of pelvic-floor exercises.

1.10.20 Rectal non-steroid anti-inflammatory drugs should be offered routinely following perineal repair if non-steroid anti-inflammatory drugs are not contraindicated.
2 Notes on the scope of the guidance

NICE guidelines are developed in accordance with a scope that defines what the guideline will and will not cover. The scope of this guideline is available from www.nice.org.uk/NICetoadddetails.

The guideline is intended to develop guidance for healthy women and their babies in labour. Therefore the following women were excluded from the scope.

- Women or their babies in suspected or confirmed preterm labour (before 37 weeks gestation); women with an intrauterine fetal death; women with co-existing severe morbidities such as pre-eclampsia (high blood pressure of pregnancy); or diabetes; women who have multiple pregnancies; women with intrauterine growth retardation of fetus.
- Women who have been covered in other guidelines; For example, women who have their labour induced (‘Induction of labour’, Inherited clinical guideline D); women who have Caesarean birth or with breech presentation (‘Caesarean Section’, NICE clinical guideline no. 13).
- Techniques for operative delivery or repair of third or fourth degree perineal trauma; additional care for women with known or suspected infectious co-morbidities such as group B streptococcus, HIV or genital herpes virus.

How this guideline was developed

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

The Healthcare Commission assesses the performance of NHS organisations in meeting core and developmental standards set by the Department of Health in ‘Standards for better health’, issued in July 2004. Implementation of clinical guidelines forms part of the developmental standard D2. Core standard C5 says that national agreed guidance should be taken into account when NHS organisations are planning and delivering care.

NICE has developed tools to help organisations implement this guidance (listed below). These are available on our website (www.nice.org.uk/CGXXX).

[NICE to amend list as needed at time of publication]

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

4 Research recommendations

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

The best possible studies comparing different places of birth should be undertaken in the UK.

**Why this is important**

The National Service Framework for children, young people and maternity services in 2004 recommended active promotion of midwife-led care for all women, following appropriate assessment, and that healthcare providers should develop midwife-led and home birth services to meet the needs of local populations. The guideline shows that birth outside a consultant-led unit is consistently associated with an increase in normal vaginal births, an increase in women with an intact perineum and an increase in maternal satisfaction. The only other feature of the studies comparing birth settings are small but potentially important variations in perinatal mortality that are currently very difficult to accurately quantify. The quality of evidence available is not as good as it ought to be for such an important healthcare issue, and most studies have inherent bias. A study to quantify the balance of risk and benefit for each birth setting is urgently needed.

4.2 **Psychological/emotional well-being of women**

Studies to investigate the components that significantly affect a woman’s satisfaction with her birth experience including psychological outcomes, and to develop a robust method of assessing women’s satisfaction.

**Why this is important**

Women’s experiences of birth vary enormously and are influenced by many factors including her expectations, degree of preparation, the complexity of the birth and the severity of her pain. Most studies investigated the effectiveness of any interventions used during birth, but insufficiently reported women’s psychological and emotional well-being and their birth experiences. The findings consistently showed that measurement of these factors was not robustly undertaken. A standardised method to measure and quantify women’s psychological and emotional well-being and their birth experiences is
urgently required to support any study investigating the effectiveness of interventions, techniques or strategies during birth.

4.3 Delay in the first stage of labour

Studies to investigate effectiveness of any strategies to increase spontaneous vaginal birth where diagnosis of delay in the first stage of labour is made.

Why this is important

Delay in the first stage of labour has been defined in a number of ways and no universal consensus has been achieved. Traditionally delay has been defined largely by the rate of cervical progress without taking into account either maternal uterine activity and descent/rotation of the fetal head during birth. Although it is acknowledged that the duration of labour is dependent on parity, clinical practice and local labour guidelines rarely make that distinction.

Studies included in the guideline attempted to assess labour augmentation by amniotomy and/or oxytocin for delayed first stage of labour, although combination/doses/timing of these interventions is scarcely investigated. There are few good quality studies available that investigated the effectiveness of non-invasive techniques such as breathing and relaxation, massage, complementary therapies or immersion in water. Strategies to identify the best combination of regimens to prevent delay or appropriately expedite delay in the first stage of labour to improve the well-being of women and their babies should be urgently investigated.

5 Other versions of this guideline

5.1 Full guideline

The full guideline, 'Intrapartum care: care of healthy women and their babies during childbirth', contains details of the methods and evidence used to develop the guideline. It is published by the National Collaborating Centre for Women’s and Children’s Health, and is available from [NCC website details to be added], our website (www.nice.org.uk/CGXXXfullguideline) and the National Library for Health (www.nlh.nhs.uk). [Note: these details will apply to the published full guideline.]
5.2 Quick reference guide

A quick reference guide for healthcare professionals is also available from our website (www.nice.org/CGXXXquickrefguide) and the NHS Response Line (telephone 0870 1555 455; quote reference number NXXXX). [Note: these details will apply when the guideline is published.]

5.3 Understanding NICE guidance: information for patients and carers

A version of this guideline for healthy women and their babies during childbirth and their carers is available from our website (www.nice.org.uk/CGXXXpublicinfo) and the NHS Response Line (0870 1555 455); quote reference number NXXXX). [Note: these details will apply when the guideline is published.]

6 Related NICE guidance


NICE is developing the following guidance (details available from www.nice.org.uk):

- Postnatal care: routine postnatal care of women and their babies.
  (Publication expected July 2006.)
Antenatal and postnatal mental health: clinical management and service guidance. (Publication expected February 2007.)

7 Updating the guideline

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

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Appendix B: The Guideline Review Panel

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

[NICE to add]

[Name; style = Unnumbered bold heading]

[job title and location; style = NICE normal]
Appendix C: The algorithms

The algorithms will be published as separate files on the website.