Intrapartum care of healthy women and their babies: summary of updated NICE guidance

Vanessa Delgado Nunes senior research fellow and guideline lead 1, Maryam Gholitabar research associate 1, Jessica Mai Sims project manager 1, Susan Bewley chair of the guideline development group, honorary professor of complex obstetrics2, On behalf of the Guideline Development Group

1 National Collaborating Centre for Women’s and Children’s Health, Royal College of Obstetricians and Gynaecologists, London NW1 4RG, UK; 2Women’s Health Academic Department, Kings College London, London, UK

This is one of a series of BMJ summaries of new guidelines based on the best available evidence; they highlight important recommendations for clinical practice, especially where uncertainty or controversy exists.

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

About 700 000 women give birth in England and Wales each year. Most are healthy, have a straightforward pregnancy, go into labour spontaneously, and give birth to a single baby after 37 weeks of pregnancy. Uncertainty around consistent practice and the availability of new evidence necessitated an update of 2007 guidance from the National Institute for Health and Care Excellence (NICE) on intrapartum care.1 This article summarises the most recent recommendations from NICE on the care of healthy women who go into labour at term (37-41 weeks’ gestation) (Clinical Guideline CG190).2

Recommendations

NICE recommendations are based on systematic reviews of the best available evidence and explicit consideration of cost effectiveness. When minimal evidence is available, recommendations are based on the Guideline Development Group’s experience and opinion of what constitutes good practice. Evidence levels for the recommendations are given in italic in square brackets.

Choosing the planned place of birth

• Explain to both multiparous and nulliparous women who are at low risk of complications that giving birth is generally very safe for the woman and her baby. (New recommendation.) [Based on high to very low quality evidence from randomised controlled trials, observational studies, and the experience and opinion of the Guideline Development Group (GDG).]

• Explain to both multiparous and nulliparous women that they may choose any birth setting (home, freestanding midwifery unit, alongside midwifery unit (alongside an obstetric unit and not requiring ambulance transfer), or obstetric unit) and support them in their choice of setting, wherever that may be:
  - Advise low risk multiparous women that planning to give birth at home or in a midwifery led unit 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 (tables 1⇓ and 2⇓).
  - 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 (tables 3⇓ and 4⇓). (New recommendation.) [Based on high to very low quality evidence from randomised controlled trials and observational studies and the experience and opinion of the GDG]

• Boxes 1 and 2 outline medical conditions and obstetric and gynaecological factors that indicate increased risk. Women with these conditions or factors should consider planned birth at an obstetric unit.

Correspondence to: V Delgado Nunes vnunes@rcog.org.uk
The bottom line

- The care that a woman receives during labour can affect the woman herself (physically and emotionally) and the health of her baby in the short and longer term.
- Maternity services should provide a model of care that supports one-to-one care in labour.
- Low risk mothers and babies do not benefit from birth in hospital obstetric units or from many previously “routine” but unindicated labour interventions.
- Clinics need to be familiar with the evidence and able to talk non-judgmentally to women about their choices.

- Healthcare service commissioners and providers should ensure that all four birth settings are available to all women (in the local area or in a neighbouring area). (New recommendation.) [Based on the experience and opinion of the GDG]

- If the midwife or the woman would like further discussion about the choice of planned place of birth, arrange this with a senior midwife (consultant or supervisor of midwives) or a consultant obstetrician (or both) if there are obstetric issues. (New recommendation.) [Based on the experience and opinion of the GDG]

- When discussing the woman’s choice of place of birth with her, do not disclose personal views or judgments about her choices. (New recommendation.) [Based on the experience and opinion of the GDG]

Women’s experience in all birth settings

- 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 an important and emotionally intense life experience. The woman should be in control, listened to, and cared for with compassion. Appropriate informed consent should be sought. (New recommendation.) [Based on low to very low quality evidence from observational studies and the experience and opinion of the GDG]

- 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. (New recommendation.) [Based on low to very low quality evidence from observational studies and the experience and opinion of the GDG]

One-to-one care in all birth settings

- 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 or woman-to-midwife ratios (or both). (New recommendation.) [Based on very low quality evidence from observational studies, and the experience and opinion of the GDG]

Service organisation and clinical governance

- Commissioners and providers should ensure that there are:
  - Robust protocols in place for transfer of care between settings.
  - Clear local pathways for the continued care of women who are transferred from one setting to another, including:

Where this involves crossing provider boundaries (institutional boundaries, whether geographical or policy related, should not impede care or endanger women)

Arrangements for occasions when the nearest obstetric or neonatal unit is closed to admissions or when the local midwifery led unit is full.

(New recommendation.) [Based on the experience and opinion of the GDG]

Education and early assessment

- Consider early assessment of labour by telephone triage provided by a dedicated triage midwife for all women. (New recommendation.) [Based on high to low quality evidence from randomised trials and the experience and opinion of the GDG]

- 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 one hour. (New recommendation.) [Based on moderate quality evidence from randomised trials and the experience and opinion of the GDG]

Latent or first stage of labour

- Do not leave a woman in established labour on her own except for short periods or at the woman’s request. [Based on the experience and opinion of the GDG]

- Do not carry out a speculum examination if it is certain that the membranes have ruptured. [Based on moderate and low quality evidence from observational studies and the experience and opinion of the GDG]

- Do not offer or advise clinical intervention if labour is progressing normally and the woman and baby are well. [Based on the experience and opinion of the GDG]

- In all stages of labour, women who have left the normal care pathway because of the development of complications can return to it if the complication is resolved. [Based on the experience and opinion of the GDG]

Duration of the first stage

- Inform women that although the length of established first stage of labour varies between women:
  - First labours last on average eight hours and are unlikely to last for longer than 18 hours
  - Second and subsequent labours last on average five hours and are unlikely to last for longer than 12 hours.

[Based on low and very low quality evidence from observational studies and the experience and opinion of the GDG]
Box 1: Medical conditions indicating increased risk

Women with such conditions should be considered for planned birth at an obstetric unit (other conditions may indicate a need for individual assessment when planning place of birth)

Cardiovascular
- Confirmed cardiac disease
- Hypertensive disorders

Respiratory
- Asthma that requires an increase in treatment or hospital treatment
- Cystic fibrosis

Haematological
- Haemoglobinopathies: sickle cell disease, β thalassaemia major
- History of thromboembolic disorders
- Immune thrombocytopenia purpura or other platelet disorder or platelet count below $100 \times 10^9/L$
- Von Willebrand's disease
- Bleeding disorder in the woman or unborn baby
- Atypical antibodies that carry a risk of haemolytic disease of the newborn

Endocrinological
- Hyperthyroidism
- Diabetes

Infective
- Risk factors associated with group B streptococcus whereby antibiotics in labour would be recommended
- Hepatitis B or C with abnormal liver function tests
- HIV positive
- Toxoplasmosis under treatment
- Current active infection with chicken pox, rubella, genital herpes in the woman or baby
- Tuberculosis under treatment

Immunological
- Systemic lupus erythematosus
- Scleroderma

Renal
- Abnormal renal function
- Renal disease that needs supervision by a renal specialist

Neurological
- Epilepsy
- Myasthenia gravis
- Previous stroke

Gastrointestinal
- Liver disease associated with current abnormal liver function tests

Psychiatric
- Psychiatric disorder that needs current inpatient care

- Give ongoing consideration to the woman’s emotional and psychological needs, including her desire for pain relief. [Based on the experience and opinion of the GDG]
- Encourage the woman to communicate her need for analgesia at any point during labour. [Based on the experience and opinion of the GDG]

Fetal monitoring during labour

- Do not perform cardiotocography for low risk women in established labour. (New recommendation.) [Based on high and moderate quality evidence from randomised controlled trials]
- Offer telemetry to any woman who needs continuous cardiotocography during labour. (New recommendation.) [Based on high and low quality evidence from randomised trials and observational studies, and the experience and opinion of the GDG]
- Do not make any decision about a woman’s care in labour on the basis of cardiotocography findings alone. (New recommendation.) [Based on the experience and opinion of the GDG]

Intrapartum interventions to reduce perineal trauma

- Do not perform perineal massage in the second stage of labour. [Based on high quality evidence from randomised trials and the experience and opinion of the GDG]
- Do not carry out a routine episiotomy during spontaneous vaginal birth. [Based on high quality evidence from
Box 2: Obstetric and gynaecological factors indicating increased risk

Women with such factors should be considered for planned birth at an obstetric unit (other conditions may indicate a need for individual assessment when planning place of birth)

**Previous complications**
- Unexplained stillbirth or neonatal death, or death related to intrapartum difficulty
- 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 <85 g/L) 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
- Body mass index at booking of greater than 35
- Recurrent antepartum haemorrhage
- Small for gestational age in this pregnancy (less than fifth centile or reduced growth velocity on ultrasound)
- Abnormal fetal heart rate or Doppler studies
- Ultrasound diagnosis of oligohydramnios or polyhydramnios

**Gynaecological history**
- Myomectomy
- Hysterotomy

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randomised trials and the experience and opinion of the GDG

- 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. [Based on low quality evidence from observational studies and the experience and opinion of the GDG]

- Do not offer episiotomy routinely at vaginal birth after previous third or fourth degree trauma. [Based on very low quality evidence from observational studies and the experience and opinion of the GDG]

- Perform an episiotomy if there is a clinical need, such as instrumental birth or suspected fetal compromise. [Based on high quality evidence from randomised trials and the experience and opinion of the GDG]

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Third stage of labour

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 three 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 three components:
  - No routine use of uterotonic drugs
  - No clamping of the cord until pulsation has stopped
  - Delivery of the placenta by maternal effort.

(New recommendation.) [Based on the experience and opinion of the GDG]

- Advise women to have active management of the third stage, because it is associated with a lower risk of postpartum haemorrhage and blood transfusion. (New recommendation.) [Based on moderate and low quality evidence from randomised trials and observational studies, and the experience and opinion of the GDG]

- If a woman at low risk of postpartum haemorrhage requests physiological management of the third stage, support her in her choice. (Updated recommendation.) [Based on the experience and opinion of the GDG]
• After administering oxytocin, clamp and cut the cord:
  - Do not clamp the cord sooner than one minute after the birth of the baby unless there is concern about the integrity of the cord or the baby has a heartbeat of under 60 beats/min that is not getting faster
  - Clamp the cord before five minutes to perform controlled cord traction as part of active management
  - If the woman asks for the cord to be clamped and cut more than five minutes after birth, support her in her choice.
  (New recommendation.) [Based on high to very low quality evidence from randomised trials and observational studies, and the experience and opinion of the GDG]
• Record the timing of cord clamping in both active and physiological management. (New recommendation.) [Based on the experience and opinion of the GDG]

Care of the newborn baby

• Record the time from birth to the onset of regular respirations. (New recommendation.) [Based on the experience and opinion of the GDG]
• If a newborn baby needs basic resuscitation, start with air.
  (Updated recommendation.) [Based on moderate to very low quality evidence from randomised trials, and the experience and opinion of the GDG]
• Minimise separation of the baby and mother, while taking into account the clinical circumstances. (New recommendation.) [Based on the experience and opinion of the GDG]

Overcoming barriers

This guideline recommends that women should be given information and advice about all types of planned labour settings and be advised that all settings are available. Healthcare professionals may need to change the advice they give and the manner in which they deliver this. The provision of one-to-one care in all birth settings is recommended. This may not be happening at the moment because of shortages of midwives and budgets. The guideline also highlights the need for robust protocols regarding the transfer of care between settings when required (see table 3 for reasons for transfer).

The guidance on cardiotocography has also been updated to clarify when it is not indicated and recommendations are now better aligned with the predictive value of this technique. Early cord clamping is no longer recommended, and healthcare professionals may need to change practice and document when cord clamping has taken place. On the basis of the evidence, the recommendations set the limit of no earlier than one minute and no later than five minutes after birth in active management of the third stage of labour.

The members of the Guideline Development Group were: Susan Bewley, Tracey Cooper, Sarah Fishburn, Helen Ford (stood down August 2013), Kevin Ives, Michael Lane (from January 2014), Nuala Lucas, Bryony Strachan, Derek Tuffnell, Kylie Watson, and Catherine Williams. The members of the National Collaborating Centre for Women’s and Children’s Health technical team were: Vanessa Delgado Nunes, Roz Ullman (until May 2014), Rupert Franklin (until June 2014), Maryam Gholtabar, David James, Jessica Sims, Katherine Cullen, and Zosia Beckles.

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4 Blix E, Huitfeldt AS, Oian P, Straume B, Kumle M. Outcomes of planned home births and planned hospital births in low-risk women in Norway between 1990 and 2007: a retrospective cohort study. Sex Reprod Healthcare 2012;3:147-53.

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Further information on the guidance

This update to the 2007 guidance was undertaken because of concern about possible variation of practice in labour in England and Wales (for example, variations in care during the latent first stage, fetal monitoring, and third stage practices). It also reflects new research on, for example, the timing of cord clamping and birth outcomes in England by parity and birth setting. The updated guideline emphasises women centred care, highlighting women's informed decision making and choice, as well as noting how the practices, demeanour, and attitudes of staff can influence the experience of women and their birth companions.

Methods

This guidance was developed by the National Collaborating Centre for Women’s and Children’s Health in accordance with National Institute for Health and Care Excellence (NICE) guideline development methods (www.nice.org.uk/article/PMG6/chapter/1%20Introduction). A Guideline Development Group (GDG) was established by the National Collaborating Centre for Women's and Children’s Health; it incorporated healthcare professionals (including midwives, obstetricians, a neonatologist, an anaesthetist, a healthcare service commissioner, and a general practitioner) and lay members. The GDG identified relevant clinical questions, collected and appraised clinical evidence, and evaluated the cost effectiveness of proposed interventions where possible. The draft guideline underwent a public consultation in which stakeholder organisations were invited to comment; the GDG took all comments into consideration when producing the final version of the guideline.

Four different versions of this guideline have been produced: a full version containing all the evidence, the process undertaken to develop the recommendations, and all the recommendations; a care pathway; a version containing a list of all the recommendations, known as the “NICE guideline”; and a version for the public (www.nice.org.uk/guidance/cg190/informationforpublic). All of these versions are available from the NICE website (www.nice.org.uk/cg190). Updates of the guideline will be produced as part of NICE’s guideline development programme.

Future research

- How does the provision of accurate, evidence based information affect women’s decision making processes and choice of place of birth?
- What are the long term consequences for women and babies of planning birth in different settings?
- 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 freestanding or alongside midwifery unit (or calling the midwife to a home birth), compared with women who do not receive this education?
- What is the most effective treatment for primary postpartum haemorrhage?
- For women who are assessed as being at low risk of complications at the start of labour, what are the natural frequencies of the avoidable harms that cardiotocography is intended to prevent? Does the use of cardiotocography in labours where complications develop confer a net benefit compared with intermittent auscultation?

Tables

| Outcome                                              | Planned place of 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 or spinal)§            |                        | 28†  | 40                         | 60                       | 121†          |
| Epsiotomy                                            |                        | 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 are instances (n) per 1000 multiparous women giving birth.
†Data from Birthplace in England Collaborative Group* and Blix and colleagues§ (all other data from Birthplace in England Collaborative Group* only).
§Estimated transfer rate from an obstetric unit to a different obstetric unit owing to lack of capacity or expertise.
§The Birthplace in England Collaborative Group* reported spinal or epidural analgesia and Blix and colleagues reported epidural analgesia.
| Outcome                        | 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             |

*No of babies per 1000 births.
†Serious medical problems were combined. Neonatal encephalopathy and meconium aspiration syndrome were the most common adverse events, 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 events. Fractured humerus and clavicle were uncommon (<4% of adverse events).
Table 3 | Spontaneous vaginal birth, transfer to an obstetric unit, and obstetric interventions according to planned place of birth*: low risk nulliparous women

| Outcome                              | Planned place of 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 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 are instances (n) per 1000 multiparous women giving birth.
†Figures from Birthplace in England Collaborative Group\(^3\) and Blix and colleagues\(^4\) (all other figures from Birthplace in England Collaborative Group\(^3\) only).
‡Estimated transfer rate from one obstetric unit to a different one owing to lack of capacity or expertise.
§The Birthplace in England Collaborative Group\(^3\) reported spinal or epidural analgesia and Blix and colleagues reported epidural analgesia.\(^6\)
Table 4 | Outcomes for the baby for each planned place of birth: low-risk nulliparous women

| Outcome                                 | Planned place of birth |
|-----------------------------------------|------------------------|
|                                         | 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             |

*No of babies per 1000 births.
†Serious medical problems were combined. Neonatal encephalopathy and meconium aspiration syndrome were the most common adverse events, 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 events. Fractured humerus and clavicle were uncommon (<4% of adverse events).