

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Guideline scope

Intrapartum care for women with existing medical conditions or obstetric complications and their babies

Topic

The Department of Health in England has asked NICE to develop a guideline for intrapartum care of 'high risk' women.

This guideline will sit alongside NICE's existing guideline on the [care of healthy women and their babies during childbirth](#). It covers intrapartum care when either the woman or her baby is at high risk of adverse outcomes because of an existing medical condition affecting the woman or an obstetric complication.

This guideline will also be used to update the NICE quality standard for [intrapartum care](#).

For more information about why this guideline is being developed, and how the guideline will fit into current practice, see the [context](#) section.

Who the guideline is for

- Pregnant women, their families and carers and the public.
- Obstetricians, midwives, anaesthetists and other healthcare professionals involved in the care of women in labour, including in maternity services.
- Providers and commissioners of maternity services.

NICE guidelines cover health and care in England. Decisions on how they apply in other UK countries are made by ministers in the [Welsh Government](#), [Scottish Government](#), and [Northern Ireland Executive](#).

Equality considerations

NICE has carried out [an equality impact assessment](#) during scoping. The assessment:

- lists equality issues identified, and how they have been addressed
- explains why any groups are excluded from the scope.

The guideline will look at inequalities related to women who find it difficult to access or derive full benefit from the care available. These include women with cognitive or physical disabilities.

1 Context

1.1 Key facts and figures

Risk assessment and planning are key components of care for pregnant women, so that any factors likely to have a negative impact on the pregnancy or birth can be identified in a timely manner. Care can then be delivered to maximise the chances of good outcomes for both the woman and her baby. Assessment and planning start at the antenatal booking appointment and continue throughout pregnancy at each antenatal contact. During labour, routine monitoring of the woman and her unborn baby and of the progress of labour is a continuation of the risk-screening process. Findings from these assessments will affect the plan of care for labour, and may result in changes to the plan being made antenatally or during labour if new complications are identified.

A pregnancy is 'high risk' when the likelihood of an adverse outcome for the woman or the baby is greater than that of the 'normal population'. A labour is 'high risk' when adverse outcomes arise in association with labour.

The level of risk may be determined before pregnancy or arise during pregnancy or during labour and can affect the woman or the baby. Examples are described in the following paragraphs.

- A woman may have an existing medical condition that can be made worse by physiological changes that occur in labour. The 2014 MBRRACE-UK report on [Saving lives, improving mothers' care](#) states that there were approximately 10 maternal deaths per 100,000 women giving birth in the UK in 2010–12. Of these, two-thirds were the result of physical or mental health problems in pregnancy (indirect deaths) and only one-third resulted from direct complications of pregnancy such as bleeding. Cardiac disease remains the largest single cause of indirect maternal deaths.
- Obstetric (pregnancy-related) problems can develop that increase the risk of adverse labour and/or birth outcomes. Again, these can lead to mortality: one-third of maternal deaths resulting from direct complications of pregnancy were associated with thrombosis and thromboembolism, 15% with genital tract sepsis and 15% with haemorrhage.
- A woman can enter labour with no identified complications and be considered 'low risk' but problems may arise during labour that can be associated with adverse outcomes. These problems may develop gradually over the course of labour or arise as acute emergencies. The 2011 [Birthplace in England study](#) found that 10.1% of women considered 'low risk' before labour had one or more complicating conditions identified at the start of care in labour. The study also reported the following rates of adverse outcomes for women categorised as low risk at the end of pregnancy: intrapartum section, 5.8%; third- or fourth-degree perineal trauma, 2.7%; blood transfusion, 0.9%; admission of the baby to a neonatal intensive care unit, 2.1%. Although maternal mortality is rare, complications in labour cause significant morbidity, and can have long-term physical and psychological consequences. Furthermore, maternity claims represent the highest value and second highest number of clinical negligence claims reported to the NHS Litigation Authority (NHSLA).
- The 2014 MBRRACE-UK report showed that 22% of maternal deaths were associated with women being overweight (body mass index [BMI] 25–29 kg/m²) and 27% were associated with obesity (BMI of at least 30 kg/m²).

1.2 Current practice

Women with risk factors for an adverse labour outcome that are known before the onset of labour will enter labour with a plan of care that includes the planned place of birth, level of intrapartum maternal and fetal monitoring, strategies for intrapartum analgesia and treatment and interventions specific to the woman's condition. The woman is also likely to have made an individualised birth plan detailing her preferences for labour.

Variation in care can arise in any stage of labour, and may depend on the severity of the condition or complication and the anticipated level of associated risk. Variation may also result from differences in birth unit protocols, opinions and preferences of senior medical staff and local availability of resources, or because of women's preferences.

If a risk (or risks) arises or is identified after the woman has gone into labour, then changes to the plan of care taking into account the guidance for the particular risk (or risks) are needed. Transfer may be needed to a place of birth with the necessary facilities to care for the woman and her baby.

1.3 Policy, legislation, regulation and commissioning

Legislation, regulation and guidance

- [Children and Families Act](#). October 2014

Commissioning

- [National Maternity Review \(Better Births\)](#). February 2016
- [Commissioning maternity services](#). July 2012

One of the issues to be covered in this guideline that may have an impact on commissioning is multidisciplinary team involvement in antenatal care planning for women with existing medical conditions.

2 What the guideline is about

This guideline covers aspects of intrapartum care for women who are identified before or during labour as being at high risk of adverse outcomes.

2.1 *Who is the focus?*

Groups that will be covered

Women in labour (spontaneous or induced) who are at high risk of adverse outcomes for themselves and/or their baby.

Two groups of women in labour are the main focus of this guideline:

- women in spontaneous or induced labour (or who have a planned caesarean section) who are identified as being at high risk of adverse outcomes because of existing maternal medical conditions
- women in spontaneous or induced labour who are identified as being at high risk of adverse outcomes because:
 - of obstetric complications, in the current and/or previous pregnancy, labour and/or birth
 - the baby is identified during labour to be at risk of adverse outcomes
 - they have had no antenatal care.

Groups that will not be covered

- Women in labour whose baby is identified antenatally to be at high risk of adverse outcomes exclusively because the baby has a congenital disorder.
- Women in labour who are identified before or during labour to be at high risk of adverse outcomes solely because of personal or social circumstances.
- Women in labour without known medical conditions who are having a caesarean section that was planned during their antenatal care.

2.2 Settings

Settings that will be covered

- Hospital obstetric units, midwifery-led units located alongside obstetric units, community settings including freestanding midwifery-led units and home, and transfer of care (for example, via the ambulance service).

2.3 Activities, services or aspects of care

Key areas that will be covered

Women at high risk of adverse outcomes for themselves and/or their baby because of existing maternal medical conditions

- 1 Information provision
- 2 Antenatal care planning involving a multidisciplinary team
- 3 Intrapartum care for women with cardiac disease:
 - stratification of risk
 - management of anticoagulation for valvular disease
 - mode of birth
 - fluid management
 - diagnosis and management of cardiomyopathy
 - anaesthesia and analgesia
 - management of the third stage of labour
- 4 Intrapartum care for women with asthma:
 - analgesia
 - use of prostaglandins and other uterotonics
- 5 Intrapartum care for women on long-term systemic steroid medication:
 - steroid replacement regimens
- 6 Intrapartum care for women with haemostatic disorders:
 - use of regional anaesthesia and analgesia
 - management of the third stage of labour
 - thresholds for platelet count and/or function requiring plans for the birth to be modified

- 7 Intrapartum care for women with a history of subarachnoid haemorrhage or arterio-venous malformation of the brain:
 - mode of birth
 - management of the second stage of labour
- 8 Intrapartum care for women who develop an acute kidney injury or have chronic kidney disease:
 - fluid management
 - mode of birth
- 9 Intrapartum care for women with obesity:
 - fetal presentation
 - anaesthesia and analgesia
 - fetal monitoring
 - delivery position
 - equipment needs

Women at high risk of adverse outcomes for themselves and/or their baby because of obstetric complications or other reasons

- 1 Information provision
- 2 Risk assessment
- 3 Intrapartum care for women with pyrexia:
 - fetal blood sampling
 - use of anti-pyretics
- 4 Intrapartum care for women with sepsis:
 - mode of birth
 - anaesthesia and analgesia
 - fetal monitoring
 - antimicrobial therapy
 - management for the woman immediately after the birth
- 5 Intrapartum care for women with intrapartum haemorrhage:
 - management of intrapartum haemorrhage
- 6 Intrapartum care for women with breech presenting in labour:
 - mode of birth
- 7 Intrapartum care for women with a small-for-gestational age baby:

- fetal monitoring
- 8 Intrapartum care for women with a large-for-gestational age baby:
 - mode of birth
- 9 Intrapartum care for women who present in labour having had no antenatal care:
 - risk assessment and management of labour
- 10 Intrapartum care for women with previous caesarean section:
 - management of the first and second stages of labour
- 11 Intrapartum care for women in labour after 42 weeks of pregnancy:
 - maternal and fetal monitoring

Areas that will be covered by incorporation from or updating of the NICE guideline on [care of healthy women and their babies during childbirth](#):

- Incorporate:
 - care for women with delay in the third stage of labour (retained placenta)
 - care for women who have a postpartum haemorrhage
 - other high risk areas may be incorporated at the discretion of NICE
- Update:
 - fetal monitoring during labour (details of review questions to be updated and recommendations that will be affected will be presented in an addendum to this document following stakeholder consultation)

Areas that will not be covered

Group	Rationale
Women with mental health problems requiring medication	NICE will consider how best to address this area in future
Women with thrombotic disorders	Covered in Thrombosis and embolism during pregnancy and the puerperium, reducing the risk , RCOG Green-top Guideline 37a (NICE accredited)
Women with	Adverse outcomes are predominately morbidity not

musculoskeletal disorders, including back problems	mortality
Women with hepatitis B or C, or with HIV	NICE will consider how best to address this area in future HIV is covered by a further guideline British HIV Association guideline for HIV in pregnant women , 2014 (NICE accredited)
Women with previous myomectomy or hysterotomy	This is a small group of women presenting in labour
Women with pelvic girdle pain	This includes a moderate number of women presenting in labour. Adverse outcomes are predominately morbidity not mortality and the condition is covered in Pregnancy-related pelvic girdle pain: guidance for health professionals , Pelvic, Obstetric and Gynaecological Physiotherapy, 2015
Women with neurological disorders such as epilepsy	NICE will consider how best to address this area in future
Women with neuromuscular disorders such as multiple sclerosis	NICE will consider how best to address this area in future
Women with sickle cell disease	Covered in Sickle cell disease in pregnancy, management of , RCOG Green-top Guideline 61 (NICE

	accredited)
Women with thyroid disease	This includes only a small number of women presenting in labour
Women with liver disease	NICE will consider how best to address this area in future
Women with multiple pregnancy	NICE will consider how best to address this area in future
Women with hypertension in pregnancy	Covered in Hypertension in pregnancy , NICE guideline CG107
Women with a third- or fourth-degree tear	Covered in Third- and fourth-degree perineal tears, management , RCOG Green-top Guideline 29 (NICE accredited)
Women with diabetes in pregnancy	Covered in Diabetes in pregnancy , NICE guideline NG3
Women with obstetric cholestasis	Covered in Obstetric cholestasis , RCOG Green-top Guideline 43 (NICE accredited)
Women in suspected preterm labour without medical or obstetric complications	Covered in Preterm labour and birth , NICE guideline NG25
Women with cord prolapse	Covered in Umbilical cord prolapse , RCOG Green-top Guideline 50 (NICE accredited)
Women who	Covered in Maternal collapse in pregnancy and the puerperium , RCOG Green-top Guideline 56 (NICE

collapse in labour	accredited)
Women with suspected amniotic fluid embolism	Covered in Maternal collapse in pregnancy and the puerperium , RCOG Green-top Guideline 56 (NICE accredited)
Women colonised by group B streptococcus in pregnancy	Prevention and management of infection in the baby is covered in Neonatal infection: antibiotics for prevention and treatment , NICE guideline CG149 and The prevention of early-onset neonatal group B streptococcal disease , RCOG Green-top Guideline 36 (NHS Evidence accredited)
Women with planned caesarean section for reasons other than existing maternal medical conditions	Women undergoing planned caesarean section for reasons other than existing maternal medical conditions are covered in Caesarean section , NICE guideline CG132
Women with placenta accreta	Covered in Placenta praevia, placenta praevia accreta and vasa praevia: diagnosis and management , RCOG Green-top Guideline 27 (NICE accredited)
Women who have undergone female genital mutilation	Covered in Female genital mutilation and its management , RCOG Green-top Guideline 53 (NICE accredited)
Women whose baby is stillborn	Covered in Late intrauterine fetal death and stillbirth , RCOG Green-top Guideline 55 (NICE accredited)
Women whose baby is identified as having shoulder dystocia	Covered in Shoulder dystocia , RCOG Green-top Guideline 42 (NICE accredited)

Women with malpresentation other than breech	This is uncommon and practice is clear
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2.4 Economic aspects

We will take economic aspects into account when making recommendations. We will develop an economic plan that states for each review question (or key area in the scope) whether economic considerations are relevant, and if so whether this is an area that should be prioritised for economic modelling and analysis. We will review the economic evidence and carry out economic analyses, using an NHS and personal social services (PSS) perspective as appropriate.

2.5 Key issues and questions

While writing this scope, we have identified the following key issues, and draft review questions related to them.

Draft review questions for intrapartum care for women at high risk of adverse outcomes for themselves and/or their baby because of existing maternal medical conditions

- 1 Information provision
 - 1.1 What are the main areas of information about labour and birth that are needed by pregnant women with existing medical conditions?
- 2 Antenatal care planning involving a multidisciplinary team
 - 2.1 Does antenatal care planning involving a multidisciplinary team compared with routine antenatal care planning improve intrapartum outcomes for women with existing medical conditions?
- 3 Women with cardiac disease
 - 3.1 What history, clinical examination and investigation is most useful in antenatal planning for birth in women with congenital cardiac disease?

3.2 What is the appropriate management of anticoagulation for women with valvular disease in pregnancy and labour?

3.3 Which women with cardiac disease should be offered elective caesarean section to improve outcomes for reasons specific to cardiac disease?

3.4 Which cardiac conditions need additional fluid balance monitoring or management during labour and birth:

- input–output chart of fluid balance with a urinary catheter or urometer
- invasive monitoring using an arterial line and central venous pressure
- cardiac output monitoring
- fluid restriction?

3.5 What is the most appropriate method of diagnosis for women with suspected cardiomyopathy in labour?

3.6 What is the optimal management for women with suspected cardiomyopathy in labour?

3.7 Is regional or general anaesthesia safer for women with cardiac disease who need anaesthesia for caesarean section?

3.8 What is the effectiveness and safety of regional analgesia compared with systemic narcotic analgesia for women with cardiac disease who are in labour?

3.9 How should the third stage of labour be managed for women with cardiac disease?

4 Women with asthma

4.1 What are the risks and benefits of not using or limiting duration of use of Entonox in women with asthma?

- 4.2 What is the effectiveness and safety of drugs commonly used in labour in women with difficult asthma, including prostaglandins for inducing labour and prostaglandins and other uterotonics for treating postpartum haemorrhage?
- 5 Women on long-term systemic steroid medication
- 5.1 What steroid replacement regimen should be used during birth and the peripartum period for women on long-term systemic steroid medication?
- 6 Women with haemostatic disorders
- 6.1 When should regional anaesthesia and analgesia be avoided in women with haemostatic disorders and what investigations can help in this decision making?
- 6.2 How should the third stage of labour be managed for women who are at increased risk of haemorrhage because of haemostatic disorders?
- 6.3 What is the threshold level of platelet count and/or function below which plans for the birth need to be modified in women with haemostatic disorders?
- 7 Women with a history of subarachnoid haemorrhage or arterio-venous malformation of the brain
- 7.1 Which women with a history of subarachnoid haemorrhage or an arterio-venous malformation of the brain should avoid labour?
- 7.2 How should the second stage of labour be managed for women with a history of subarachnoid haemorrhage or arterio-venous malformation of the brain?
- 8 Women who develop an acute kidney injury or have chronic kidney disease

8.1 What is the most effective fluid management regimen for women who develop an acute kidney injury or have chronic kidney disease and who are in the peripartum period?

8.2 Which women who develop an acute kidney injury or have chronic kidney disease should be offered a caesarean section?

9 Women with obesity

9.1 What is the value of assessing fetal presentation early in labour for women with obesity?

9.2 Does an ultrasound scan of the woman's back improve needle siting for central neuraxial blockade (spinal, epidural or combined spinal–epidural) anaesthesia and analgesia for women with obesity in the peripartum period?

9.3 How should fetal monitoring be managed during labour in women with obesity?

9.4 What is the optimal delivery position for women with obesity in the second stage of labour?

9.5 What additional equipment is needed to ensure optimal care of women with obesity in the peripartum period?

Draft review questions for intrapartum care for women at high risk of adverse outcomes for themselves and/or their baby because of obstetric complications or other reasons

1 Information provision

1.1 What are the information needs of women at high risk of adverse outcomes in labour due to obstetric complications that arise before or during the intrapartum period?

2 Risk assessment

- 2.1 What maternal observations should be performed for women at high risk of adverse outcomes in labour for the woman or the baby, and what is the optimal frequency of making these observations?
- 3 Women with pyrexia
 - 3.1 Does the use of fetal blood sampling (in conjunction with electronic fetal monitoring) for women with pyrexia in labour improve outcomes for the baby?
 - 3.2 Does the use of anti-pyretics in women with pyrexia in labour improve outcomes for the woman or the baby?
- 4 Women with sepsis
 - 4.1 What is the optimal mode of birth for women with sepsis?
 - 4.2 What are the most effective and safe methods of anaesthesia for women with sepsis in labour?
 - 4.3 What are the most effective and safe methods of analgesia for women with sepsis in labour?
 - 4.4 How should fetal monitoring be managed for women with sepsis who present in labour?
 - 4.5 What is the most clinical and cost effective antimicrobial therapy for women with sepsis in labour?
 - 4.6 What is the most appropriate management for women with sepsis in the first 24 hours after the birth?
- 5 Women with intrapartum haemorrhage
 - 5.1 What is the optimal management for intrapartum haemorrhage?
- 6 Women with breech presenting in labour
 - 6.1 What is the optimal mode of birth (emergency caesarean section or continuation of labour) for women with breech presenting in the first or second stage of labour?

- 7 Women with a small-for-gestational age baby
 - 7.1 How should fetal monitoring be managed during labour for women with a small-for-gestational age baby?
- 8 Women with a large-for-gestational age baby
 - 8.1 What is the optimal mode of birth (emergency caesarean section or continuation of labour) for women with a large for gestational age baby?
- 9 Women who present in labour having had no antenatal care
 - 9.1 What are the most appropriate systems for risk assessment and management of labour for women who present in labour having had no antenatal care?
- 10 Women with previous caesarean section
 - 10.1 How should the first and second stages of labour be managed for women with previous caesarean section?
- 11 Women in labour after 42 weeks of pregnancy
 - 11.1 What maternal and fetal monitoring should be carried out for women in labour after 42 weeks of pregnancy?

2.6 Main outcomes

The main outcomes that will be considered when searching for and assessing the evidence are:

- for the woman
 - mortality
 - major morbidities (such as genital tract trauma, blood loss)
 - mode of birth
 - women's experience of labour and birth (including psychological wellbeing)
 - length of hospital stay, and admission to a high-dependency or intensive care unit
 - type of anaesthesia and/or analgesia

- other major morbidity specific to the topic.
- for the baby
 - mortality
 - major neonatal morbidity (such as hypoxic ischaemic encephalopathy, birth injuries and respiratory complications)
 - neonatal infection
 - admission to a neonatal unit
 - long-term developmental outcomes (such as cerebral palsy)
 - other major morbidity specific to the topic.

3 Links with other NICE guidance and NICE Pathways

3.1 NICE guidance

NICE guidance that will be incorporated in this guideline

- [Intrapartum care](#) (2014) NICE guideline CG190 (for example, relevant recommendations related to complications that arise during labour)

NICE guidance about the experience of people using NHS services

NICE has produced the following guidance on the experience of people using the NHS. This guideline will not include additional recommendations on these topics unless there are specific issues related to the intrapartum care of women at high risk of adverse outcomes:

- [Patient experience in adult NHS services](#) (2012) NICE guideline CG138
- [Service user experience in adult mental health](#) (2011) NICE guideline CG136
- [Medicines adherence](#) (2009) NICE guideline CG76

NICE guidance in development that is closely related to this guideline

NICE is currently developing the following guidance that is closely related to this guideline:

NICE guideline: Intrapartum care for high risk women, final scope

- [Sepsis: the recognition, diagnosis and management of severe sepsis](#). NICE guideline. Publication expected July 2016

NICE guidance that is closely related to this guideline

- [Preterm labour and birth](#) (2015) NICE guideline NG25
- [Venous thromboembolism](#) (2015) NICE guideline CG92
- [Antenatal and postnatal mental health: clinical management and service guidance](#) (2015) NICE guideline CG192
- [Caesarean section](#) (2011) NICE guideline CG132
- [Pregnancy and complex social factors](#) (2010) NICE guideline CG110
- [Inducing labour](#) (2008) NICE guideline CG70
- [Antenatal care for uncomplicated pregnancies](#) (2008) NICE guideline CG62
- [Postnatal care up to 8 weeks after birth](#) (2006) NICE guideline CG37

3.2 NICE quality standards

- [Neonatal jaundice](#) (2014) NICE quality standard QS57
- [Asthma: diagnosis and management of asthma](#) (2013) NICE quality standard QS25
- [Antenatal care](#) (2012) NICE quality standard QS22

NICE quality standards that may need to be revised or updated when this guideline is published

- [Intrapartum care](#) (2015) NICE quality standard QS105

3.3 NICE Pathways

[NICE Pathways](#) bring together all related NICE guidance and associated products on a topic in an interactive topic-based flow chart.

When this guideline is published, the recommendations will be added to a new NICE pathway, which will be accessible from the existing pathway on [intrapartum care](#).

The new pathway will link to existing pathways that cover intrapartum care that are outside the scope of this guideline, such as [diabetes in pregnancy](#) and [hypertension in pregnancy](#).

Further information

This is the final scope, incorporating comments from registered stakeholders during consultation.

You can follow progress of the [guideline](#).

Our website has information about how [NICE guidelines](#) are developed.

4 Addendum: fetal monitoring during labour

Details of review questions to be updated and recommendations that will be affected will be presented here in due course.