

# Deciding whether to offer caesarean section

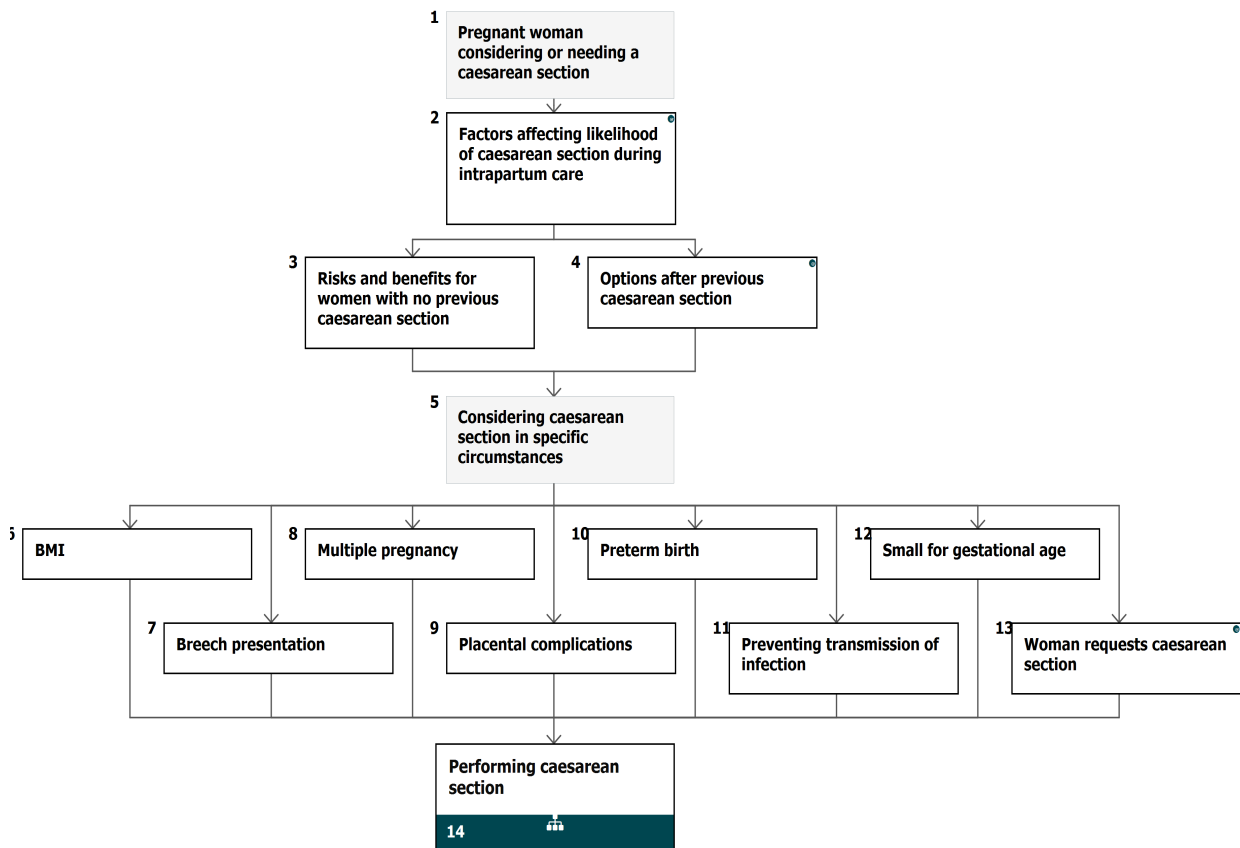
NICE Pathways bring together everything NICE says on a topic in an interactive flowchart. NICE Pathways are interactive and designed to be used online.

They are updated regularly as new NICE guidance is published. To view the latest version of this NICE Pathway see:

<http://pathways.nice.org.uk/pathways/caesarean-section>

NICE Pathway last updated: 10 April 2019

This document contains a single flowchart and uses numbering to link the boxes to the associated recommendations.



## 1 Pregnant woman considering or needing a caesarean section

No additional information

## 2 Factors affecting likelihood of caesarean section during intrapartum care

### Factors reducing likelihood of caesarean section

Women should be informed that continuous support during labour from women with or without prior training reduces the likelihood of caesarean section.

Women with an uncomplicated pregnancy should be offered induction of labour beyond 41 weeks because this reduces the risk of perinatal mortality and the likelihood of caesarean section. See what NICE says on [induction of labour](#).

A partogram with a 4-hour action line should be used to monitor progress of labour of women in spontaneous labour with an uncomplicated singleton pregnancy at term, because it reduces the likelihood of caesarean section.

Consultant obstetricians should be involved in the decision making for caesarean section, because this reduces the likelihood of caesarean section.

### Factors having no effect on likelihood of caesarean section

Women should be informed that the following interventions during intrapartum care have not been shown to influence the likelihood of caesarean section, although they may affect other outcomes that are outside the scope of this guidance:

- walking in labour
- non-supine position during the second stage of labour
- immersion in water during labour
- epidural analgesia during labour
- the use of raspberry leaves.

The following aspects of intrapartum care have not been shown to influence the likelihood of caesarean section for 'failure to progress' and should not be offered for this reason, although they may affect other outcomes which are outside the scope of this guideline:

- active management of labour
- early amniotomy.

### **Complementary therapies**

Women should be informed that the effects on the likelihood of caesarean section of complementary therapies used during labour (such as acupuncture, aromatherapy, hypnosis, herbal products, nutritional supplements, homeopathic medicines, and Chinese medicines) have not been properly evaluated and further research is needed before such interventions can be recommended.

### **Predicting cephalopelvic disproportion in labour**

Pelvimetry is not useful in predicting 'failure to progress' in labour and should not be used in decision making about mode of birth.

Shoe size, maternal height and estimations of fetal size (ultrasound or clinical examination) do not accurately predict cephalopelvic disproportion and should not be used to predict 'failure to progress' during labour.

### **Electronic fetal monitoring**

Electronic fetal monitoring is associated with an increased likelihood of caesarean section. When caesarean section is contemplated because of an abnormal fetal heart rate pattern, in cases of suspected fetal acidosis, fetal blood sampling should be offered if it is technically possible and there are no contraindications. See NICE's recommendations on [fetal blood sampling during labour](#).

### **Quality standards**

The following quality statements are relevant to this part of the interactive flowchart.

4. Consultant obstetrician involvement in decision-making for planned caesarean section
6. Consultant obstetrician involvement in decision-making for unplanned caesarean section
7. The use of fetal blood sampling

### 3 Risks and benefits for women with no previous caesarean section

Discuss the risks and benefits of caesarean section and vaginal birth with women, taking into account their circumstances, concerns, priorities and plans for future pregnancies (including the risks of placental problems with multiple caesarean sections) (see information below and information on [care after caesarean section](#)).

#### **Planned caesarean section compared with planned vaginal birth for women with an uncomplicated pregnancy and no previous caesarean section**

Planned caesarean section may reduce the risk of the following in women:

- perineal and abdominal pain during birth and 3 days postpartum
- injury to vagina
- early postpartum haemorrhage
- obstetric shock.

Planned caesarean section may increase the risk of the following in babies:

- neonatal intensive care unit admission.

Planned caesarean section may increase the risk of the following in women:

- longer hospital stay
- hysterectomy caused by postpartum haemorrhage
- cardiac arrest.

Please refer to the tables on [summary effect on women's health](#) [See page 13] and [summary effect on babies' health](#) [See page 20] for full details, including the absolute and relative risks for each effect.

NICE has written information for the public on [caesarean section](#).

### 4 Options after previous caesarean section

When advising about the mode of birth after a previous caesarean section consider:

- maternal preferences and priorities

- the risks and benefits of repeat caesarean section
- the risks and benefits of planned vaginal birth after caesarean section, including the risk of unplanned caesarean section.

Inform women who have had up to and including four caesarean sections that the risk of fever, bladder injuries and surgical injuries does not vary with planned mode of birth and that the risk of uterine rupture, although higher for planned vaginal birth, is rare.

Pregnant women with both previous caesarean section and a previous vaginal birth should be informed that they have an increased likelihood of achieving a vaginal birth than women who have had a previous caesarean section but no previous vaginal birth.

NICE has written information for the public on [caesarean section](#).

See what NICE says on [intrapartum care for women with obstetric complications](#).

### **Women planning a vaginal birth after previous caesarean section**

Offer women planning a vaginal birth who have had a previous caesarean section:

- electronic fetal monitoring during labour
- care during labour in a unit where there is immediate access to caesarean section and on-site blood transfusion services.

During induction of labour, women who have had a previous caesarean section should be monitored closely, with access to electronic fetal monitoring and with immediate access to caesarean section, because they are at increased risk of uterine rupture.

See what NICE says on [induction of labour](#).

### **Quality standards**

The following quality statement is relevant to this part of the interactive flowchart.

1. Vaginal birth after a caesarean section

## **5 Considering caesarean section in specific circumstances**

No additional information

**6 BMI**

Do not use a BMI of over 50 alone as an indication for planned caesarean section.

For information on vaginal birth, see what NICE says on [intrapartum care](#).

**7 Breech presentation**

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

Pregnant women with a singleton breech presentation at term, for whom external cephalic version is contraindicated or has been unsuccessful, should be offered caesarean section because it reduces perinatal mortality and neonatal morbidity.

For information on breech presentation in preterm labour, see NICE's recommendations on [discussing mode of birth](#).

See what NICE says on [intrapartum care for women with obstetric complications](#).

**8 Multiple pregnancy**

In otherwise uncomplicated twin pregnancies at term where the presentation of the first twin is cephalic, perinatal morbidity and mortality is increased for the second twin. However, the effect of planned caesarean section in improving outcome for the second twin remains uncertain and therefore caesarean section should not routinely be offered outside a research context.

For information on vaginal birth, see what NICE says on [intrapartum care](#).

In twin pregnancies where the first twin is not cephalic the effect of caesarean section in improving outcome is uncertain, but current practice is to offer a planned caesarean section.

See what NICE says on [multiple pregnancy](#).

## 9 Placental complications

### Placenta praevia

Women with a placenta that partly or completely covers the internal cervical os (minor or major placenta praevia) should be offered caesarean section.

### Morbidly adherent placenta

If low-lying placenta is confirmed at 32–34 weeks in women who have had a previous caesarean section, offer colour-flow Doppler ultrasound as the first diagnostic test for morbidly adherent placenta.

If a colour-flow Doppler ultrasound scan result suggests morbidly adherent placenta:

- discuss with the woman the improved accuracy of MRI in addition to ultrasound to help diagnose morbidly adherent placenta and clarify the degree of invasion
- explain what to expect during an MRI procedure
- inform the woman that current experience suggests that MRI is safe, but that there is a lack of evidence about any long-term risks to the baby
- offer MRI if acceptable to the woman.

Discuss the interventions available for delivery with women suspected to have morbidly adherent placenta, including cross matching of blood and planned caesarean section with a consultant obstetrician present.

All hospitals should have a locally agreed protocol for managing morbidly adherent placenta that sets out how these elements of care should be provided.

## 10 Preterm birth

Preterm birth is associated with higher neonatal morbidity and mortality. However, the effect of planned caesarean section in improving these outcomes remains uncertain and therefore caesarean section should not routinely be offered outside a research context.

For information on preterm birth, see NICE's recommendations on [discussing mode of birth](#).



## 11 Preventing transmission of infection

### HIV

As early as possible give women with HIV information about the risks and benefits for them and their child of the HIV treatment options and mode of birth so that they can make an informed decision.

Do not offer a caesarean section on the grounds of HIV status to prevent mother-to-child transmission of HIV to:

- women on highly active anti-retroviral therapy (HAART) with a viral load of less than 400 copies per ml **or**
- women on any anti-retroviral therapy with a viral load of less than 50 copies per ml.

Inform women that in these circumstances the risk of HIV transmission is the same for a caesarean section and a vaginal birth.

Consider either a vaginal birth or a caesarean section for women on anti-retroviral therapy (ART) with a viral load of 50–400 copies per ml because there is insufficient evidence that a caesarean section prevents mother-to-child transmission of HIV.

For information on vaginal birth, see what NICE says on [intrapartum care](#).

Offer a caesarean section to women with HIV who:

- are not receiving any anti-retroviral therapy **or**
- are receiving any anti-retroviral therapy and have a viral load of 400 copies per ml or more.

Researchers and national bodies responsible for the collection of UK population data should continue to collect data about HIV diagnoses in pregnant women, including treatment, mode of birth, and mother-to-child transmission rates.

### Hepatitis B virus

Mother-to-child transmission of hepatitis B can be reduced if the baby receives immunoglobulin and vaccination. In these situations pregnant women with hepatitis B should not be offered a planned caesarean section because there is insufficient evidence that this reduces mother-to-child transmission of hepatitis B virus.

See NICE's recommendations on [immunisation programmes for babies born to mothers with hepatitis B](#).

For information on vaginal birth, see what NICE says on [intrapartum care](#).

### **Hepatitis C virus**

Women who are infected with hepatitis C should not be offered a planned caesarean section because this does not reduce mother-to-child transmission of the virus.

For information on vaginal birth, see what NICE says on [intrapartum care](#).

Pregnant women who are co-infected with hepatitis C virus and HIV should be offered planned caesarean section because it reduces mother-to-child transmission of both hepatitis C virus and HIV.

### **Herpes simplex virus**

Women with primary genital herpes simplex virus (HSV) infection occurring in the third trimester of pregnancy should be offered planned caesarean section because it decreases the risk of neonatal HSV infection.

Pregnant women with a recurrence of HSV at birth should be informed that there is uncertainty about the effect of planned caesarean section in reducing the risk of neonatal HSV infection. Therefore, caesarean section should not routinely be offered outside a research context.

For information on vaginal birth, see what NICE says on [intrapartum care](#).

## **12 Small for gestational age**

The risk of neonatal morbidity and mortality is higher with 'small for gestational age' babies. However, the effect of planned caesarean section in improving these outcomes remains uncertain and therefore caesarean section should not routinely be offered outside a research context.

For information on vaginal birth, see what NICE says on [intrapartum care](#).

See also what NICE says on [intrapartum care for women with obstetric complications](#).

## 13 Woman requests caesarean section

When a woman requests a caesarean section explore, discuss and record the specific reasons for the request.

If a woman requests a caesarean section when there is no other indication, discuss the overall risks and benefits of caesarean section compared with vaginal birth and record that this discussion has taken place (see [risks and benefits for women with no previous caesarean section](#) [See page 5]). Include a discussion with other members of the obstetric team (including the obstetrician, midwife and anaesthetist) if necessary to explore the reasons for the request, and ensure the woman has accurate information.

When a woman requests a caesarean section because she has anxiety about childbirth, offer referral to a healthcare professional with expertise in providing perinatal mental health support to help her address her anxiety in a supportive manner.

Ensure the healthcare professional providing perinatal mental health support has access to the planned place of birth during the antenatal period in order to provide care.

For information on vaginal birth, see what NICE says on [intrapartum care](#).

For women requesting a caesarean section, if after discussion and offer of support (including perinatal mental health support for women with anxiety about childbirth), a vaginal birth is still not an acceptable option, offer a planned caesarean section.

An obstetrician unwilling to perform a caesarean section should refer the woman to an obstetrician who will carry out the caesarean section.

### Quality standards

The following quality statements are relevant to this part of the interactive flowchart.

2. Maternal request for a caesarean section: maternity team involvement
3. Maternal request for a caesarean section: maternal anxiety

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**14 Performing caesarean section**

[See Caesarean section / Performing caesarean section](#)

## Summary effect on women's health of planned caesarean section compared with planned vaginal birth for women with an uncomplicated pregnancy and no previous caesarean section

Effects around the time of birth	Finding for planned CS	Finding for planned vaginal birth (including % unplanned CS in planned vaginal birth group)	Absolute effect	Relative effect (95% confidence interval)	Evidence quality and reference
<b>Studies suggest may be reduced after a planned CS</b>					
Perineal and abdominal pain during birth <sup>1</sup>	Median score 1.0	Median score 7.3 (10.3%)	6.3 lower	NC	Very low
Perineal and abdominal pain 3 days postpartum <sup>1</sup>	Median score 4.5	Median score 5.2 (10.3%)	0.7 lower	NC	Very low
Injury to vagina	0.0%	0.56% (14.7%)	6 fewer per 1000 (from 6 fewer to 2 fewer)	NC	Very low
Early postpartum haemorrhage	1.1%	6.0% (35%)	49 per 1000 (from 4 fewer to 56 fewer)	OR 0.23 (0.06 to 0.94)	Low

	3.9%	6.2% (8.3%)	23 fewer per 1000 (from 35 fewer to 6 fewer)	RR 0.06 (0.4 to 0.9)	Very low
Obstetric shock	0.006%	0.018% (8.2%)	12 fewer per 100,000 (from 17 fewer to 0.1 fewer)	RR 0.33 (0.11 to 0.99)	Very low
<b>Studies suggest may be reduced after planned vaginal birth</b>					
Length of hospital stay	3.2 days	2.6 days (35%)	0.6 days longer	Mean difference 1.58 (1.27 to 2.17)	Low
	3.96 days	2.56 days (8.2%)	1.4 days longer	Adjusted mean difference 1.47 (1.46 to 1.49)	Very low
Hysterectomy due to postpartum haemorrhage	0.03%	0.01% (8.2%)	14 more per 100,000 (from 3 more to 33 more)	RR 2.31 (1.30 to 4.09)	Very low

Cardiac arrest	0.19%	0.03% (8.2%)	15 more per 10,000 (from 11.5 more to 19.5 more)	RR 4.91 (3.95 to 6.11)	Very low
<b>No difference found in studies</b>					
Perineal and abdominal pain 4 months postpartum <sup>1</sup>	Median score 0.0	Median score 0.17 (10.3%)	0.17 lower	NC	Very low
Injury to bladder/ureter	0.0%	0.14% (14.7%)	1 fewer per 1000 (from 2 fewer to 2 more)	NC	Very low
Injury to cervix	0.0%	0.28% (14.7%)	3 fewer per 1000 (from 3 fewer to 1 more)	NC	Very low
Latrogenic surgical injury	0.00%	0.07% (14.7%)	7 fewer per 10,000 (from 10	NC	Very low

			fewer to 30 more)		
Pulmonary embolism	0.00%	0.003% (14.7%)	2 fewer per 10,000 (from 2 fewer to 40 more)	NC	Very low
Wound infection	0.01%	0.00% (35%)	1 more per 10,000	p = 1.0	Low
	1.5%	0.9% (8.3%)	6 more per 1000 (from 1 fewer to 19 more)	RR 1.7 (0.9 to 3.2)	Very low
Intraoperative trauma	0.1%	0.3% (8.3%)	1 fewer per 1000 (from 3 fewer to 7 more)	RR 0.5 (0.1 to 3.5)	Very low
Uterine rupture	0.02%	0.03% (8.2%)	13 fewer per 100,000 (from 22 fewer to 2.2 more)	RR 0.51 (0.25 to 1.07)	Very low



Assisted ventilation or intubation	0.01%	0.005% (8.2%)	7 more per 100,000 (from 0 fewer to 22 more)	RR 2.21 (0.99 to 4.90)	Very low
Acute renal failure	0.004%	0.001% (8.2%)	2 more per 100,000 (from 9 fewer to 13 more)	RR 2.17 (0.58 to 8.14)	Very low
<b>Conflicting findings from studies</b>					
Maternal death	9/737 (cases/controls)	49/9133 (cases/controls) (Of maternal deaths occurring in the planned vaginal birth group 13/49 (26.5%) were women who gave birth by unplanned CS)	NC	OR 2.28 (1.11 to 4.65)	Very low
	0.00%	0.00% (14.7)	No difference (no events)	NC	Very low
	0.00%	0.002% (8.2%)	1.8 fewer per 10,000 (from 2 fewer to 6 more)	NC	Very low

Deep vein thrombosis	0.00%	0.03% (14.7%)	0.7 fewer per 1000 (from 0.2 fewer to 4 more)	NC	Very low
	0.06%	0.03% (8.2%)	32 more per 100,000 (from 14 more to 59 more)	RR 2.20 (1.51 to 3.20)	Very low
Blood transfusion	1.7%	1.9% (35%)	2 fewer per 1000 (from 14 fewer to 34 more)	OR 0.87 (0.27 to 2.78)	Low
	0.3%	0.3% (14.7%)	0 fewer per 1000 (from 2 fewer to 5 more)	RR 0.89 (0.20 to 3.99)	Very low
	0.3%	0.4% (8.3%)	1 fewer per 1000 (from 2 fewer to 5 more)	RR 0.7 (0.2 to 2.7)	Very low
	0.02%	0.07% (8.2%)	41 fewer per 100,000	RR 0.20 (0.20 to 0.64)	Very low

			(from 53 fewer to 23 fewer)		
Infection – wound and postpartum	1.1%	0.8% (14.7%)	3 more per 1000 (from 2 fewer to 11 more)	RR 1.36 (0.75 to 2.4)	Very low
	0.6%	0.21% (8.2%)	390 more per 100,000 (from 323 more to 464 more)	RR 2.85 (2.52 to 3.21)	Very low
Hysterectomy	0.6%	0.1% (35%)	5 more per 1000	p = 0.13	Low
	0.1%	0.01% (14.7%)	1 more per 1000 (from 0 more to 5 more)	RR 9.09 (1.36 to 60.33)	Very low
	0.06%	0.02% (8.2%)	41 more per 100,000 (from 23.6 more to 68 more)	RR 3.60 (2.44 to 5.31)	Very low

Anaesthetic complications	0.4%	0.3% (14.7%)	1 more per 1000 (from 2 fewer to 11 more)	RR 1.24 (0.34 to 4.59)	Very low
	0.53%	0.21% (8.2%)	319 more per 100,000 (from 257 more to 389 more)	RR 2.5 (2.22 to 2.86)	Very low
<sup>1</sup> score/10, higher scores indicate higher pain levels					

### Summary effect on babies' health of planned caesarean section compared with planned vaginal birth for women with an uncomplicated pregnancy and no previous caesarean section

Effects around the time of birth	Finding for planned CS	Finding for planned vaginal birth (including % unplanned CS in vaginal birth group)	Absolute effect	Relative effect (95% confidence interval)	Evidence quality and reference
<b>Studies suggest may be reduced after planned vaginal birth</b>					
NICU admission	13.9%	6.3% (35%)	76 more per 1000 (from 31 more to 134 more)	RR 2.20 (1.4 to 3.18)	Low

<b>No difference found in studies</b>					
Hypoxic- ischaemic encephalopathy (CNS depression, seizures, pH < 7)	0.2%	0.2% (14.7%)	0 fewer per 1000 (from 2 fewer to 5 more)	RR 0.81 (0.22 to 3.00)	Very low
Intracranial haemorrhage	0.00%	0.01% (14.7%)	0.2 fewer per 1000 (from 0.4 fewer to 3 more)	NC	Very low
Neonatal respiratory morbidity	12.0%	11.5% (14.7%)	5 more per 1000 (from 14 fewer to 27 more)	RR 1.04 (0.88 to 1.23)	Very low
<b>Conflicting findings from studies</b>					
Neonatal mortality	0.0%	0.1% (14.7%)	1 fewer per 1000 live births (from 1 fewer to 2 more)	NC	Very low
	0.17%	0.07% (7.9%)	1 more per 1000 live births (from 1 more to 2 more)	RR 2.4 (2.20 to 2.65)	Very low

Apgar score at 5 mins < 7	0.0%	0.5% (14.7%)	5 fewer per 1000 (from 5 fewer to 1 fewer)	NC	Very low
	0.6%	1.2% (35%)	6 fewer per 1000 (from 9 fewer to 157 more)	RR 0.44 (0.07 to 2.51)	Very low

**CS**

caesarean section

**Category 1 caesarean section**

(immediate threat to the life of the woman or fetus)

**Category 2 caesarean section**

(maternal or fetal compromise which is not immediately life-threatening)

**CNS**

central nervous system

**NICU**

neonatal intensive care unit

**NC**

not calculable

**OR**

odds ratio

## RR

relative risk

## Sources

Caesarean section (2011, updated 2019) NICE guideline CG132

## Your responsibility

### Guidelines

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

### Technology appraisals

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, health

professionals are expected to take these recommendations fully into account, alongside the individual needs, preferences and values of their patients. The application of the recommendations in this interactive flowchart is at the discretion of health professionals and their individual patients and do not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian.

Commissioners and/or providers have a responsibility to provide the funding required to enable the recommendations to be applied when individual health professionals and their patients wish to use it, in accordance with the NHS Constitution. They should do so in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

### **Medical technologies guidance, diagnostics guidance and interventional procedures guidance**

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take these recommendations fully into account. However, the interactive flowchart does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

Commissioners and/or providers have a responsibility to implement the recommendations, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this interactive flowchart should be interpreted in a way that would be inconsistent with compliance with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.