

# Maternity triage: a guide for trainees

**M**aternity triage is a place to provide assessment and initial management of complications in pregnancy. It has a high turnover of patients demanding accurate and concise assessment of the presenting complaint. The workload and expectations can be challenging for trainees new to obstetrics, and the responsibility of caring for an expectant mother can feel daunting.

However, maternity triage also provides a rich environment for education and training that should follow the principle of 'providing the right care at the right time by the right person' (Royal College of Obstetricians and Gynaecologists, 2011a). A trainee should expect to work within a multidisciplinary team, supported with supervision and mentoring (Royal College of Obstetricians and Gynaecologists, 2013a).

Maternity triage typically sees women between 16–20 weeks of gestation onwards. A telephone triage system normally operates as a screening tool to help select those women who need further detailed assessment. Maternity triage has developed since the 1980s to become an emerging specialty within obstetric and midwifery care (Angelini, 2014).

This article covers pain, reduced movements, vaginal bleeding and sepsis, and also discusses women in vulnerable situations and how they may be recognized. It looks at how to triage these complaints and considers potential differential diagnoses.

## Abdominal pain in pregnancy

Abdominal pain is one of the most frequent reasons for attendance at maternity triage.

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Differentiating between acute, serious causes of pain and the common but benign discomforts of pregnancy requires a combination of obtaining an appropriate pain history, good knowledge of the differential diagnoses and common sense.

Pain is a feature of many complaints but does not often occur in isolation. In the context of pregnancy it is important to review all systems, remembering to include questions about fetal movements, vaginal loss and bleeding. This will help to formulate a comprehensive list of differential diagnoses and distinguish between obstetric and non-obstetric causes of pain.

*Figure 1* is a site-specific illustration of the causes of pain in pregnancy. The common causes are highlighted in bold, less common causes are included for information as late recognition worsens prognosis.

## How do I know if a woman has labour pain or contractions?

A contraction is an intermittent, painful tightening of the uterine muscle. It can be

variable in strength and length. Significant contractions can lead to cervical dilatation.

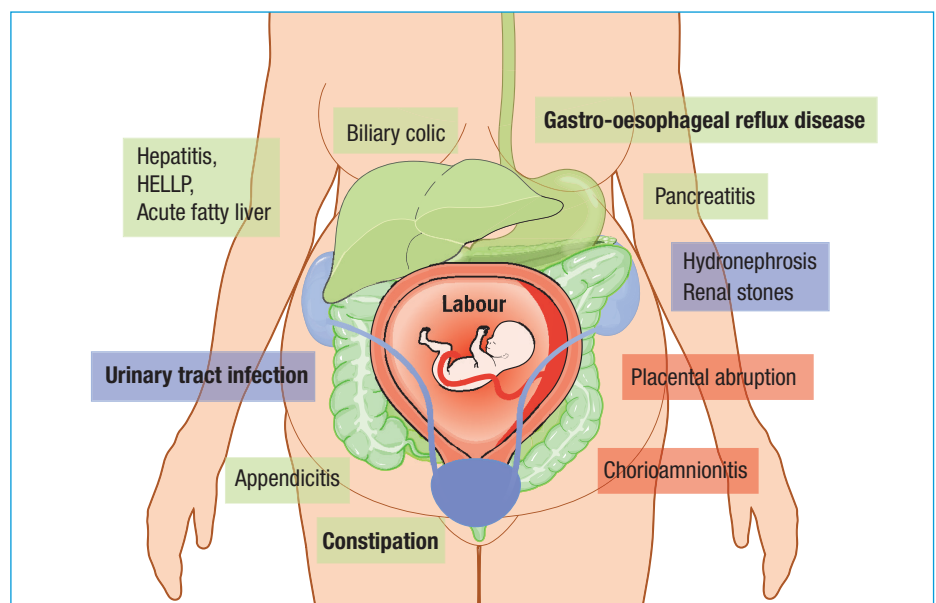
Labour is defined as regular, painful contractions causing progressive cervical change. Onset of labour may be accompanied by an increase in discharge, referred to as a 'show' and/or leaking amniotic fluid. There should not be a change in fetal movements.

Preterm labour is when this occurs at a gestation of less than 37 weeks. Threatened preterm labour is when the woman is having regular and painful contractions but there is no cervical dilatation. A speculum examination should be performed and if there is doubt about the appearance of the cervix a senior obstetrician should be called before performing a digital examination.

## What are the differential diagnoses of abdominal pain?

Common obstetric causes of pain in pregnancy are pre-eclampsia, obstetric cholestasis and placental abruption. Uncommon obstetric causes are conditions such as acute fatty liver and HELLP (haemolysis, elevated liver enzymes and low platelets).

**Figure 1. Site-specific causes of pain. Common causes are highlighted in bold, less common causes are included for information as late recognition worsens prognosis. HELLP = haemolysis, elevated liver enzymes and low platelets.**



## Musculoskeletal pain

Onset can be sudden but is more commonly a gradual onset, typically exacerbated by movement and relieved by rest, with a generally well patient. Pain on the pubic bone is characteristic of symphysis pubis dysfunction.

## Gastrointestinal tract

Appendicitis is the most common acute surgical emergency in pregnancy (Weston, 2015), although still relatively uncommon overall. Diagnosis can be difficult because the site of pain changes as the uterus grows (Rebarber and Jacob, 2016). It can present with a variety of coexisting symptoms, but acute abdominal pain with tenderness and nausea is most frequently seen (Weston, 2015). Rupture is more commonly seen especially in the third trimester.

Other common causes include gastro-oesophageal reflux disease, biliary colic, hyperemesis and gastroenteritis. Gastro-oesophageal reflux disease is very common during pregnancy. Features include heartburn and nausea, and symptoms are typically relieved with antacids. Biliary colic is typically right upper quadrant pain, radiating to the back. It is often worse after eating, with associated tenderness on palpation. Pancreatitis is an uncommon cause of abdominal pain which typically radiates through to the back and is associated with more severe nausea and vomiting.

## Genitourinary tract

As with many common illnesses, urinary tract infections in pregnancy can have an atypical presentation. They will often present with suprapubic pain and/or irregular tightenings, as well as the usual frequency and dysuria. Genital tract infections can present in a very similar way, it is prudent to perform a speculum examination for a women presenting with lower abdominal pain in pregnancy.

A degree of hydronephrosis (up to 2 cm) is normal in pregnancy (Nelson-Piercy, 2010), more than this can cause renal angle pain and tenderness. Pain from loin to groin suggests renal stones or pyelonephritis.

## Which investigations are useful?

A urine dipstick is performed on all pregnant women presenting to obstetric triage. It will give clues to aid diagnoses from pre-eclampsia to urinary tract infection. A mid-stream urine sample should always be

sent where there are signs of infection on urinalysis. Vaginal swabs are taken where there is suspicion of genital tract infection.

Many obstetric triage units have access to bedside tests to exclude preterm labour. A vaginal swab can be taken and tested for fetal proteins. These tests have a high negative predictive value, which can avoid unnecessary admissions and reassure the patient.

An established triage unit will have rigorous care pathways to allow rapid access to laboratory tests, pelvic and abdominal ultrasound, and follow up in clinic or antenatal day care. In cases where collaboration with other specialties is indicated, this needs to be at a senior level and via the telephone if a rapid response is required as recommended by 'Saving Mothers' Lives' (Centre for Maternal and Child Enquiries, 2011).

## Reduced fetal movements

Fetal movements are an important sign of fetal wellbeing. A reduction in or absence of movements naturally causes anxiety for the mother.

## Why is it important to ask about fetal movements?

In 2013/14, the UK incidence of stillbirth was 4.7 per thousand births (Office of National Statistics, 2016), which is considered high compared to other developed world countries (Tommy's, 2016). Of women who have had a stillbirth, 55% also reported experiencing a reduction in fetal movements beforehand (Royal College of Obstetricians and Gynaecologists, 2011b). Therefore, when a woman presents with reduced fetal movements it is an opportunity to make an intervention that could potentially prevent a stillborn baby. In the third trimester, it is important to enquire about fetal movements at every consultation. Intervention starts with a full history and risk assessment of that pregnancy.

## How can we discriminate 'normal' from abnormal?

First perception of movements is between 18–20 weeks and they become regular by 24 weeks. Woman should be encouraged to monitor movements and report any change in pattern or reduction in those movements.

When taking a history start by determining the baby's usual pattern of movement, and then enquire in detail about the current change in movements:

- Are the movements completely absent?

- When was the last time the woman had normal movements?
- Does she have any other new symptoms like pain, bleeding, new discharge or feeling unwell?
- Has she taken any medication (opiates, benzodiazepines or steroids are associated with reduced fetal movements)?

There are some common misconceptions regarding fetal movements. For example, an anterior placenta is not a reason for reduced fetal movements, nor do movements reduce as the pregnancy advances towards term.

## What are the important risk factors for stillbirth?

Most risk factors can be found by looking through the maternal handheld notes before you see the patient. It is helpful to categorize them into previous pregnancy history, current pregnancy history and past medical history.

## Previous pregnancy

Previous stillbirth, previous small for gestational age fetus.

## Current pregnancy

More than one consultation with reduced fetal movements, known small for gestational age, known placental insufficiency, congenital abnormality.

## Past medical history

Extremes of maternal age (<18 years, >40 years), primiparity, smoking, diabetes, hypertension, obesity.

## Which investigations are important?

Auscultation of the fetal heart is a first-line investigation, but does not have any predictive value so routine use is not recommended (National Institute for Health and Care Excellence, 2008). This should be done with a handheld Doppler so the mother can hear the heartbeat. If there is difficulty finding the fetal heart, prolonged and repeated attempts should not be made. An urgent ultrasound scan should be arranged to assess fetal viability.

The symphysis fundal height should be measured and recorded on the woman's customized growth chart (Royal College of Obstetricians and Gynaecologists, 2013b). If plotting below the 10th centile or there is reduced growth velocity alert a senior obstetrician.

If the gestational age is >26 weeks a cardiotocogram should be performed, analysed and management plans made according to unit policy. Senior input must always be sought if a cardiotocogram is abnormal.

### What intervention is needed?

Reassurance and education is all that is needed for the majority of presentations where movements have returned to normal and there are no risk factors for stillbirth.

Where fetal movements remain reduced, and/or there are risk factors for stillbirth present an ultrasound of fetal growth and liquor volume should be arranged, ideally within 24 hours of presentation. A senior obstetrician should also be involved to make a management plan for the patient.

It is always helpful to be able to provide written information to patients. There are some extremely good quality campaigns regarding fetal movements. Recommended websites include [www.tommys.org](http://www.tommys.org) and [www.kickscout.org.uk](http://www.kickscout.org.uk)

### Bleeding in pregnancy

Bleeding is a common presenting complaint to maternity triage. The absence of bleeding is strongly associated in a woman's mind with a healthy and ongoing pregnancy.

Maternal haemorrhage can be rapid with catastrophic consequences. The reasons for this are multifactorial but related to physiological changes within cardiovascular and haematological systems. Therefore a comprehensive and holistic 'ABC' assessment of the pregnant woman is essential. If the woman has any abnormal vital signs or has ongoing bleeding call early for senior support.

Bleeding in pregnancy can be categorized as painless or painful. Most bleeding presenting to triage is painless and self-limiting. Common causes include cervical or vaginal polyps, cervical ectropion and bleeding from the placental edge including bleeding placenta praevia.

The combination of bleeding and pain prompts consideration of a different set of differential diagnoses. The commonest causes include labour (either pre-term or full term), placental abruption and trauma. These can be differentiated through careful history taking (*Table 1*). Not all bleeding in pregnancy needs admission, but it always needs a comprehensive review. If there is any doubt senior advice should always be sought.

**Table 1. Essential questions to assess bleeding in pregnancy**

Question	Comment
Has the bleeding settled or still ongoing?	It is clearly less concerning if the bleeding has stopped. Underwear or pads should be inspected as this helps to estimate blood loss
Does she have any pain? Is it constant or intermittent?	See pain section for more information
Are there any other associated symptoms?	Always do a systems review
Is the bleeding following sexual activity?	
Is she up-to-date with cervical smears if age appropriate?	
Has she had her placental site scan, and is it low lying?	
What is her rhesus status?	Where rhesus negative, anti-D immunoglobulin needs to be administered to prevent isoimmunisation (Royal College of Obstetricians and Gynaecologists, 2011c)

### What signs are important on examination?

It is sensible to get a full set of observations documented on the maternity early warning score chart, and then to do a systemic examination including pulse volume and signs of anaemia or shock before examining the abdomen. If the woman is over 26 weeks a cardiotocogram can add useful information and is an important part of the fetal assessment.

Inspection of the vulva and vagina should be routine and any findings documented, a speculum examination needs to be performed to assess blood loss and the cervix. The cervical os can be visualized to see if it is closed or dilating.

Pattern recognition can be helpful when considering differential diagnoses, for example:

- Intermittent tightenings with mucousy blood loss suggests labour
- With heavy painless bleeding, placenta praevia is important to exclude
- Low volume, painless bleeding is usually caused by cervical ectropion
- Constant abdominal pain with a firm 'woody' uterus suggests placental abruption.

### Sepsis

#### How is sepsis different in pregnancy?

Symptoms of sepsis can be more subtle in this group of women. A high index of suspicion is needed, with a low threshold for screening and treatment. Early senior review is associated with improved outcome (Knight et al, 2015). As mentioned previously it is vital to use an obstetric early warning score chart to track changes in maternal observations.

### How can sepsis present to triage?

Many of the symptoms of sepsis are the same as for the non-pregnant population; however, there are some pregnancy-specific symptoms that it is important to enquire about. These include change in vaginal discharge, abdominal pain and tightenings (discussed above), urinary symptoms, as well as the more usual diarrhoea and vomiting, productive cough and rash (Royal College of Obstetricians and Gynaecologists, 2012b).

Postnatal women can also present to maternity triage so remember to enquire about breast pain, abdominal or perineal wounds, and bleeding pattern (Royal College of Obstetricians and Gynaecologists, 2012a).

### Which women are at particular risk of sepsis?

There are some pregnancy-specific risk factors which it is helpful to be aware of. These include prelabour rupture of fetal membranes, amniocentesis or chorionic villus sampling, and placing of cervical cerclage (Royal College of Obstetricians and Gynaecologists, 2012b). Enquiry about recent foreign travel should be a routine part of the history.

### How does sepsis affect the baby?

The complications of sepsis in pregnancy have a direct consequence for the fetus and can lead to miscarriage, pre-term delivery and intrauterine death, primarily via hypoxia and acidosis. Rates of cerebral palsy and neonatal encephalopathy increase in the presence of

TOP TIPS

- Always read the handheld maternity notes before reviewing the patient as these will contain a lot of important information relating to the pregnancy.
- Remember there are pregnancy-specific reference ranges for laboratory tests so always double check results.
- Use chaperones for examinations as part of routine, good medical practice.
- Listen to and learn from the midwifery team who run the triage unit. They are often an invaluable source of information and advice.

intrauterine infection (Royal College of Obstetricians and Gynaecologists, 2012b).

As a rule of thumb organisms which cause sepsis do not usually cause fetal abnormalities. Those associated with fetal abnormalities generally cause mild flu-like illnesses which would not present to triage. The common exception is chickenpox, which can lead to significant maternal compromise and cause fetal varicella syndrome. Owing to the highly infectious nature of chickenpox, history via the telephone triage system is critical as these women should be directed to a non-maternity area for obstetric review, according to local policy and care pathways.

Vulnerable women

Maternity triage is frequently a first point of contact for those most vulnerable women who do not access health care via the usual route. It is not uncommon to see unbooked women, asylum seekers and refugees first via the triage setting. These women are more likely to have poorer pregnancy outcomes (Asif et al, 2015). They often have complex needs and language barriers can make accessing relevant past history difficult. The importance of good quality translation services is now recognized, and most units have ready access to telephone or face to face translators. In this group of women it is especially important not to use friends or relatives as medical terms can be mistranslated and domestic abuse can easily be concealed.

Pregnancy often reveals or worsens domestic abuse. Domestic abuse may be first suspected in the maternity triage setting as affected women are more likely to access emergency care. When they present they often have a large number of complaints (Gottlieb, 2012). It is

important to be suspicious, especially with frequent attenders, and to learn how to ask sensitively about abuse. Be mindful that abuse can come from anyone who is close to the patient including partners and other family members. Being familiar with local protocols can help clinicians to make the enquiry with confidence. Where there are concerns regarding safeguarding of the adult and unborn child, admission to the maternity unit for social reasons is reasonable after senior review to facilitate organization and involvement of emergency shelter. Domestic violence is a leading cause of maternal mortality and should not be overlooked (Knight et al, 2015).

Worryingly human slavery and trafficking is steadily increasing; there was a 40% increase in trafficking from 2014 to 2015 (Unseen, 2016). Of those trafficked, 53% are women and many are victims of sexual exploitation. Clinicians must be aware of this increase, the inevitable presentation to emergency services and what to do when it is suspected.

Conclusions

Maternity triage is a challenging, but rewarding clinical environment. The fundamentals are remembering to take a good history and go through a process of elimination to reach your differential diagnoses. The maternity triage unit should be supported by a dedicated midwifery team, access to ultrasound and laboratory services and local guidelines and protocols to aid decision making. Regular staff training on obstetric emergencies is essential. Senior support is always available and should be used to minimize adverse events, ensure patient safety, enhance the patient's experience and enrich education of junior doctors. **BJHM**

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Angelini D (2014) Obstetric triage: a systematic review of the past fifteen years: 1998-2013. *The American Journal of Maternal/Child Nursing* 39(5): 284-297. <https://doi.org/10.1097/NMC.0000000000000069>

Asif S, Baugh A, Wyn Jones N (2015) The obstetric care of asylum seekers and refugee women in the UK. *The Obstetrician and Gynaecologist* 17(4): 223-231. <https://doi.org/10.1111/tog.12224>

Centre for Maternal and Child Enquiries (2011) Saving Mothers' Lives: Reviewing maternal deaths to make motherhood safer: 2006-2008. *BJOG* 118(Suppl 1): 1-203. <https://doi.org/10.1111/j.1471-0528.2010.02847.x>

Gottlieb A (2012) Domestic violence: a clinical guide for women's health care providers. *The Obstetrician and Gynaecologist* 14(3): 197-202. <https://doi.org/10.1111/j.1744-4667.2012.00120.x>

Knight M, Kenyon S, Brocklehurst P, Neilson J, Shakespeare J, Kurinczuk JJ (2015) *Saving Lives, Improving Mothers' Care - Surveillance of maternal*

KEY POINTS

- General principles of clinical assessment can be applied to obstetric patients in order to formulate differential diagnoses.
- Maternity triage benefits from multidisciplinary team working with access to timely senior review. This allows efficient clinical management of patients and supports education of junior doctors.
- By using local and national guidance and care pathways junior doctors can practice safely and efficiently within the maternity triage setting.

*deaths in the UK 2011-2013 and lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2009-2013.* National Perinatal Epidemiology Unit, University of Oxford, Oxford

National Institute for Health and Care Excellence (2008) *Antenatal care for uncomplicated pregnancies.* Clinical Guideline 62. RCOG Press, London

Nelson-Piercy C (2010) *Obstetric Medicine.* 4th edn. Informa Healthcare, London

Office of National Statistics (2016) Childhood mortality in England and Wales. [www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/datasets/childmortalitystatisticschildhoodinfantandperinatalchildhoodinfantandperinatalmortalityinenglandandwales](http://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/datasets/childmortalitystatisticschildhoodinfantandperinatalchildhoodinfantandperinatalmortalityinenglandandwales) (accessed 5 November 2016)

Rebarber A, Jacob BP (2016) Acute Appendicitis in Pregnancy. [www.uptodate.com/contents/acute-appendicitis-in-pregnancy](http://www.uptodate.com/contents/acute-appendicitis-in-pregnancy) (accessed 6 November 2016)

Royal College of Obstetricians and Gynaecologists (2011a) *Expert Advisory Group Report. High Quality Womens Healthcare: A Proposal For Change.* RCOG Press, London

Royal College of Obstetricians and Gynaecologists, (2011b) *Reduced Fetal Movements.* Green-top Guideline No. 57. RCOG Press, London

Royal College of Obstetricians and Gynaecologists, (2011c) *Rhesus D Prophylaxis, The Use of Anti-D Immunoglobulin for.* Green-top Guideline No. 22. RCOG Press, London

Royal College of Obstetricians and Gynaecologists, (2012a) *Sepsis following Pregnancy, Bacterial.* Green-top Guideline No. 64b. RCOG Press, London

Royal College of Obstetricians and Gynaecologists, (2012b) *Sepsis in Pregnancy, Bacterial.* Green-top Guideline No. 64a. RCOG Press, London

Royal College of Obstetricians and Gynaecologists (2013a) *Good Practice 15. Reconfiguration of womens' services in the UK.* RCOG Press, London

Royal College of Obstetricians and Gynaecologists, (2013b) *Small-for-Gestational-Age Fetus, Investigation and Management.* Green-top Guideline No. 31. RCOG Press, London

Tommy's (2016) Stillbirth statistics. [www.tommys.org/our-organisation/why-we-exist/stillbirth-statistics](http://www.tommys.org/our-organisation/why-we-exist/stillbirth-statistics) (accessed 6 November 2016)

Unseen (2016) About the problem: facts and figures. [www.unseen.org/about/the-problem/facts-and-figures](http://www.unseen.org/about/the-problem/facts-and-figures) (accessed 5 April 2016)

Weston PMP (2015) Appendicitis in pregnancy; how to manage and when to deliver. *The Obstetrician and Gynaecologist* 17(2): 105-110. <https://doi.org/10.1111/tog.12188>