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Assessment of risk during the maternity pathway

Independent report by the
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A note of acknowledgement

We would like to thank the families whose experiences are included within this report. We would also like to thank the healthcare clinicians who have engaged with maternity investigations for their openness and willingness to support improvements in this area of care.

About this report

This report is intended for healthcare providers, policymakers and the public to help improve safety in relation to the risk assessment of pregnant women/people during the maternity pathway. For readers less familiar with this area of healthcare, medical terms are explained within the report.

Terms used in this report

Birmingham symptom specific obstetric triage system Birmingham (BSOTS) is a tool that may be used by clinicians to support their decision making, when assessing the clinical risk to a pregnant woman/person and their baby.

Blood pressure in pregnancy is recorded with two numbers. The systolic pressure (higher number) is the force at which the heart pumps blood around the body. The diastolic pressure (lower number) is the pressure in the arteries when the heart rests between beats. They are both measured in millimetres of mercury (mmHg). As a general guide: high blood pressure in pregnancy is considered to be 140/90 mmHg or higher.

Body mass index in pregnancy (BMI) is a measure for indicating nutritional status in adults. It is defined as a person's weight in kilograms divided by the square of the person's height in metres (kg/m2). The World Health Organisation (WHO) classifies BMI as follows:

BMI	Nutritional status
Below 18.5	Underweight
18.5 - 24.9	Normal weight
25. 0 - 29.9	Pre-obesity
30.0 - 34.9	Obesity class I
35.0 - 39.9	Obesity class II
Above 40	Obesity class III

Obesity in pregnancy is associated with an increased risk of several serious adverse outcomes, including miscarriage, fetal congenital anomaly, thromboembolism, gestational diabetes, pre-eclampsia, dysfunctional labour, postpartum haemorrhage, wound infections, stillbirth and neonatal death. Fetal heart rate monitoring can be a challenge, and closer surveillance is required, with recourse to fetal scalp electrode or ultrasound assessment of the fetal heart if necessary.

Cardiopulmonary resuscitation (CPR) is a potentially lifesaving procedure for someone who is in cardiac arrest (their heart has stopped beating). CPR helps to pump blood around a person's body when their heart cannot. This includes chest compressions, often with artificial ventilation to try to preserve brain function until further measures can be taken to restart the heart.

Cardiotocography (CTG) is an electronic means of recording the unborn baby's heart rate pattern, to assess their well-being. This is used both during the antenatal period, and during labour. During labour, a pregnant woman/person's contractions are also monitored by this machine which produces a printed or electronic record referred to as the CTG. It is usually performed externally, using two devices (transducers) placed on a pregnant woman/person's abdomen.

Coronavirus (COVID-19) is an infectious disease caused by a newly discovered coronavirus. Most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment. Older people, those from Black, Asian or minority ethnic backgrounds and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, or cancer are more likely to develop serious illness. The COVID-19 virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes.

Hypoxic ischaemic encephalopathy (HIE) is a brain injury caused by an interrupted supply of oxygen to a baby's brain occurring during the antenatal, intrapartum or postnatal period. It occurs in 1.0 to 3.5 per 1000 live births in the United Kingdom. An interrupted oxygen supply can also affect other organs as well as the brain which can lead to severe, lifelong disability or death. The UK total body cooling trial confirmed that 72 hours of cooling to a core temperature of 33-34°C within six hours of birth for babies with moderate or severe HIE reduces death and disability at 18 months of age and improves neurodevelopmental outcome in survivors. Therapeutic hypothermia (active cooling) is a procedure where a baby is cooled to between 33°C and 34°C, with the aim of preventing further brain injury following a hypoxic (lack of oxygen) injury. Hypothermia is usually induced by cooling the whole body with a blanket or mattress and this is referred to as active cooling. Prior to active cooling, a baby once resuscitated can have passive cooling by turning off heating equipment and removing any coverings from the baby.

Induction of labour (IOL) is the process of artificially starting labour using a variety of medications and techniques. Usually, the first stage is to soften and prepare a pregnant woman/person's cervix by using prostaglandin tablets, pessaries or gels. Sometimes her cervix will be prepared using a mechanical method, such as a balloon. The next stage is to artificially break the waters (artificial rupture of membranes (ARM)). If contractions are still not strong or regular enough the drug oxytocin is given. This is one of the hormones produced naturally by pregnant women/people in labour and assists in increasing the frequency of contractions. Oxytocin is given through

a drip, and the timing of the subsequent contractions are monitored closely. If the contractions are too sparse, or become too frequent, the amount of oxytocin given via the drip will be altered.

Intrauterine fetal death When a baby dies whilst they are inside their pregnant woman/person's womb.

Pre-eclampsia is a condition that typically occurs after 20 weeks. It is a disease that is detected with a combination of raised blood pressure (hypertension) and one or more new-onset conditions including protein in the urine (proteinuria), abnormalities in liver, kidney or blood clotting function, severe headache, persistent vision problems or evidence of reduced placental function such as reduced growth of a baby. There may be no symptoms. The exact cause of pre-eclampsia is not understood. Pre-eclampsia is common, affecting between four and 16 in 200 pregnant women/people during pregnancy. It is usually mild and normally has very little effect in pregnancy. In a small number of cases, it can develop into a more serious illness. Severe pre-eclampsia (which around one in 200 pregnant women/people, develop during pregnancy) can be life-threatening for both pregnant woman/person and baby.

Prostaglandins for induction of labour, there are several medicines which can be considered for induction of labour. They are designed to prepare the cervix (neck of the womb) for labour and are often the first stage of an induction of labour process. The medication is given in a vaginal pessary, gel or tablet preparation which is inserted into the top of the vagina.

SBAR is an easy to use, structured form of communication that enables information to be transferred accurately between individuals:

- **S** = Situation (a concise statement of the problem)
- **B** = Background (pertinent and brief information related to the situation)
- **A** = Assessment (analysis and considerations of options — what you found/think)
- **R** = Recommendation (action requested/recommended — what you want).

Uterine rupture a full-thickness tear in the womb (uterus) during pregnancy or childbirth. A baby or placenta can be pushed through the rupture and into the abdominal cavity. It is a rare event which requires urgent attention. It is associated with significant complications for both a pregnant woman/person and their baby.

Vaginal birth after previous caesarean birth (VBAC). Planned VBAC is a clinically safe choice for most pregnant women/people with a single previous lower segment caesarean birth. Pregnant women/people should be informed that planned VBAC is associated with approximately 1 in 200 chance of uterine rupture. There is often a quoted 72-75% chance of successful VBAC. Pregnant women/people who have had two or more caesarean births may be offered VBAC after counselling with a senior obstetrician.

Executive summary

Background

This national learning report draws on findings from the Healthcare Safety Investigation Branch (HSIB) maternity investigation programme to identify key issues associated with assessing risk during pregnancy, labour and birth (known as the 'maternity pathway').

Risk assessment during the maternity pathway relies on healthcare professionals recognising a change in a pregnant woman/person's circumstances that may increase the level of risk. Risk assessments are undertaken during the numerous contacts pregnant women/people have with a team of healthcare professionals throughout the maternity pathway.

The investigation approach

This thematic review examined all reports undertaken by the HSIB maternity investigation programme from April 2019 to January 2022, with the aim of identifying key learnings about risk assessment. A total of 208 reports that had made findings and recommendations to NHS trusts about risk assessment during the maternity pathway were included.

The review identified an overarching theme around the need to facilitate and support individualised risk assessments for pregnant women/people to improve maternity safety. Within this, seven specific 'risk assessment themes' within the maternity care pathway were identified as commonly appearing in HSIB reports. These seven themes require a focus from the healthcare system to help mitigate risks and enable NHS trusts and clinicians to deliver safe and effective maternity care to pregnant women/people.

The seven identified areas are as follows:

1 The language used to discuss and document risk assessments should encourage a dynamic and holistic assessment of the individual pregnant woman/person's risk ('dynamic' means the risk is continually assessed to allow for unknown factors and to handle uncertainty, while 'holistic' refers to looking at other factors that might be relevant) that promotes the need for maternity care to be provided by multi-professional teams.

2 Telephone triage services should support 24-hour access to a systematic structured risk assessment of pregnant women/people's needs.

3 Telephone triage services should be operated by appropriately trained and competent clinicians who are skilled in the specific needs required for effective telephone triage.

4 Face-to-face triage in maternity units should use a structured approach to prioritise pregnant women/people to be seen in order of clinical need.

5 Clinicians should be enabled to proactively monitor and recommend the place of labour care and birth for pregnant women/people based on the individual's specific care needs during the course of their pregnancy and labour.

6 Each pregnant woman/person should be helped to understand their individualised risk associated with a vaginal or caesarean birth after a previous caesarean birth, based on their specific risk factors and care needs.

7 Pregnant women/people whose labour has been induced need clinical oversight and an individualised plan of care for maternal and fetal monitoring.

This thematic review also includes prompts for NHS trusts to consider how these risks may be mitigated:

1 Are risk assessment and screening documents designed and presented in a consistent and logical way?

2 Does the language used in risk assessment and screening documents avoid binary definitions of risk, and instead promote dynamic and holistic risk assessments supporting a multi-professional approach?

3 Does risk assessment and screening documentation support a holistic consideration and documentation of risk, or does it focus on only single risk factors?

4 Do telephone triage services facilitate 24-hour support for systematic risk assessment?

5 Are clinicians equipped with the appropriate training, skills and competencies to manage an effective telephone triage service?

6 Is a structured approach used so that pregnant women/people are seen in order of clinical need within your maternity face-to-face triage service?

7 Are there frequent opportunities to revisit and recommend the place of birth based on the pregnant woman/person's individual needs?

8 Does your risk assessment tool encourage clinicians to think about the most suitable place of birth when a pregnant woman/person in labour is admitted?

9 Do processes support holistic risk assessments to be revisited during labour to proactively assess the most suitable place for fetal monitoring and birth?

10 In antenatal discussions with pregnant woman/people, are structured tools used to support individualised care planning and decision-making when planning a birth after a previous caesarean birth?

11 Is there an opportunity to revisit these discussions when there is a change in circumstance, such as induction of labour?

12 Are clinicians encouraged to make individual plans, taking into consideration a pregnant woman/person's and baby's risk during the induction of labour process and including frequency of observations, fetal monitoring and place of induction?

13 Is there a system to prioritise pregnant women/people requiring induction of labour according to clinical need, and to ensure appropriate escalation and action when there are delays?

Contents

1 Background and context

1.1 Assessment of risk in pregnant women/people

1.1.1 Pregnant women/people undergo a number of risk assessments throughout pregnancy, labour and birth (known as the 'maternity pathway'). The number of assessments performed will depend on a variety of factors, including the risks identified for an individual at the initial booking appointment.

1.1.2 Risk assessment is a dynamic process ('dynamic' means the risk is continually assessed to allow for unknown factors), and a pregnant woman/person's risk profile may change during their pregnancy.

1.1.3 There is no single definition of a 'high-risk' and 'low-risk' pregnancy, and an individual's risk level may change during pregnancy, labour and birth. A pregnant woman/person whose pregnancy is described as 'high risk' might have pre-existing conditions prior to getting pregnant or conditions that develop while they are pregnant or during labour. The National Institute for Health and Care Excellence antenatal care guideline defines a pregnancy as 'high risk' when 'the likelihood of an adverse outcome for the woman or the baby is greater than that of the normal population' (National Institute for Health and Care Excellence, 2021b). Assessment of risk needs to be adaptive (that is, able to change according to circumstances), and also take into account whether the risk(s) identified at any given time affect the pregnant woman/person, baby or both.

1.1.4 At each antenatal appointment, there is a list of checks and screenings that need to be carried out. At the initial appointment – known as the booking appointment – the midwife will take the pregnant woman/person's medical history, including their family medical history. The midwife will also request a dating ultrasound scan and any further screening that might be required. The booking appointment may be the first time the pregnant woman/person has seen a healthcare professional about their pregnancy, and so they may wish to ask questions and discuss concerns.

1.1.5 Further risk assessments will be conducted at other points of contact between the pregnant woman/person and the health service, such as during checks in antenatal assessment units.

1.1.6 A pregnant woman/person may be assigned a 'model of care' based on the outcome of their risk assessments. Common models of care include 'midwifery led', 'obstetric led' and 'shared' care. These terms have no single approved definition, but for the purposes of this report are explained as follows:

- Midwifery-led models of care vary, but the defining feature is that a midwife (or team of midwives) takes the lead in planning, organising and delivering care, working with the pregnant woman/person from their first antenatal booking appointment to the postnatal period.

- In obstetric-led models of care, the pregnant woman/person is mainly cared for by a doctor who specialises in pregnancy and childbirth (an obstetrician).

- In shared care, a midwife, general practitioner and obstetrician take shared responsibility for the woman/person's pregnancy and birth, and all are involved in the individual's care.

1.1.7 An independent review of maternity services at the Shrewsbury and Telford Hospital NHS Trust, known as the Ockenden Report, identifies risk assessment throughout pregnancy as one of the 12 clinical priorities for immediate action on the part of all trusts. The report lists the following as an 'essential action':

'Staff must ensure that women undergo a risk assessment at each contact throughout the pregnancy pathway.'
(Ockenden, 2020)

1.1.8 The 'Better births: improving outcomes of maternity services in England' report notes that women want healthcare professionals to be able to '[recognise] signs of changing risk and [escalate] the care, when necessary, in a timely manner' (National Maternity Review, 2016). The report also says that women talk about a lack of awareness of risk and 'a reluctance to discuss it honestly'. One key conclusion of the report is that pregnant women/people should have continuity in the person who is caring for them (that is, their midwife and/or obstetrician), and noted that this would better equip the pregnant woman/person and healthcare professionals to recognise any changes to risk factors or 'where something might not be quite right'.

1.1.9 Risk assessments should include an ongoing review and discussion of the intended place of birth. This is first discussed at the booking appointment. This is a key element of NHS England's 'personalised care and support plan' (NHS England, 2021), which aims to ensure that pregnant women/people receive care that is centred around their unique needs and circumstances, and what matters most to them.

1.1.10 NHS England's 'Saving babies' lives version two' document makes several mentions of risk assessments relating to various aspects of pregnancy and labour (NHS England, 2019). These include:

- risk assessment, prevention and surveillance of pregnancies at risk of fetal growth restriction
- risk assessment for pre-eclampsia as indications for aspirin to reduce the risk of pregnancy complications
- risk assessment at the onset of labour in relation to fetal monitoring
- risk assessment of women at risk of preterm birth.

1.1.11 Risk assessment is a dynamic process (meaning the risk is continually assessed to allow for unknown factors and to handle uncertainty), and healthcare professionals should understand that a pregnant woman/person's risk profile may change during their pregnancy.

1.1.12 Currently, risk assessment systems rely on either a paper or electronic checklist to assess a pregnant woman/person's level of risk. Checklist items include risk assessments of:

- venous thromboembolism
- fetal growth
- pre-eclampsia
- gestational diabetes
- preterm labour
- perinatal mental health.

1.1.13 At the time of writing this report, there is no single national standard for risk assessment in maternity care. A previous HSIB investigation reported that maternity records are not standardised, and that risk assessment and screening information is presented and stored differently in different trusts (**Healthcare Safety Investigation Branch, 2022**). There are multiple guidelines on differing pregnancy conditions that involve guidance on risk assessment that are available from national organisations, including the Royal College of Obstetricians and Gynaecologists and the National Institute for Health and Care Excellence. These risk assessments may relate to the pregnant woman/person, the baby or both. There is no single guideline pertaining to risk assessment in pregnancy.

1.1.14 Screening risk assessments for some conditions in pregnancy have remained the same for some years and involve checklists that ask about the presence of risk factors. These checklists do not always weigh or assess the interaction between risk factors, and do not allow for a risk reduction in the absence of these factors.

2 Purpose of the report

2.1 Purpose

This national learning report analyses themes from HSIB's maternity investigation programme in relation to the risk assessment of pregnant women/people.

Risk assessments during pregnancy, labour and birth rely on healthcare professionals recognising changes in a pregnant woman/person's circumstances that may increase their level of risk. Risk assessments are undertaken during the numerous contacts pregnant women/people have with a team of healthcare professionals throughout the maternity pathway.

2.2 Scope

When this national learning report was commissioned, 1472 maternity investigations had been completed. Of these, 1222 reports included recommendations, and 208 reports made a total of 271 recommendations about risk assessments across the entire maternity pathway, including the antenatal (during pregnancy) and intrapartum (during labour and childbirth) periods.

This learning report groups these risk assessment recommendations into five clinical themes:

- clinical oversight
- triage
- place of birth
- induction of labour
- previous caesarean birth.

HSIB maternity investigations are individual to a specific family and trust. The current learning report uses extracts, example findings and safety recommendations from a number of investigations to illustrate the main areas of learning.

2.3 Out of scope

The HSIB maternity investigations made only a small number of recommendations about antenatal care, fetal monitoring and neonatal care in relation to risk assessment. These were very varied, and no specific themes were identified. Consequently, these areas were excluded from this report.

3 Involvement of the Healthcare Safety Investigation Branch

This section outlines how HSIB was alerted to the issue of risk assessments in early pregnancy and throughout the maternal pathway. It describes the criteria HSIB used to decide whether to go ahead with the national learning report.

3.1 Decision to conduct a national learning report

3.1.1 HSIB conducted an initial scoping exercise, which determined that risk assessment met the criteria for a thematic review and HSIB's Chief Investigator authorised a national learning report.

Outcome impact – what was, or is, the impact of the safety issue on people and services across the healthcare system?

Despite a wealth of national guidance for conducting robust risk assessments in maternity care, the evidence identified by the HSIB maternity investigation programme indicates that risk assessment in the maternity pathway remains a significant challenge. Methods of assessing risks for pregnant women/people have remained largely the same for the past few decades.

HSIB maternity investigations identified repeated examples of insufficient robust, continuous risk assessment in the maternity pathway. This may have led to pregnant women/people being on the incorrect care pathway or being in the wrong place of care for their pregnancy or labour, which in turn may have delayed decision making or timely escalation of care to meet the needs of the pregnant woman/person and their baby. On some occasions, this has resulted in significant harm to or death of the baby.

Systemic risk – how widespread and how common a safety issue is this across the healthcare system?

Healthcare providers who care for pregnant women/people use national guidance to produce local policy and care pathways for maternal risk assessments. However, the HSIB maternity investigation programme has identified themes related to inconsistencies among risk assessments.

The theme of incomplete risk assessment has been identified across all regions in England as part of the HSIB maternity investigation programme. 'Early recognition of risk' was highlighted as a theme arising from HSIB maternity investigations carried out between April 2018 and December 2019 (**Healthcare Safety Investigation Branch, 2020**).

Learning potential – what is the potential for an HSIB investigation to lead to positive changes and improvements to patient safety across the healthcare system?

This national learning report complements recent national publications (Kirkup, 2022; Ockenden, 2020, 2021). It highlights opportunities for standardising risk assessments and uses evidence from local investigations to inform national learning.

3.2 Evidence gathering

3.2.1 The review analysed all completed reports from April 2019 to January 2022 by the HSIB maternity investigation programme. This included 1472 maternity investigations, of which 1222 included recommendations. These recommendations were coded with primary and secondary codes and added to a database.

3.2.2 The review searched this database of recommendations and found 271 local safety recommendations that were coded as being primarily about risk assessments. These 271 recommendations came from 208 investigations conducted between 2019 and 2022. A total of 155 of the 271 recommendations were assigned a secondary code associated to the themes detailed below.

Secondary code	Number of recommendations
Antenatal care	8
Clinical assessment	12
Clinical oversight	23
Fetal monitoring	12
Place of birth	16
Induction of labour	22
Multidisciplinary team working and escalation of concerns	18
Neonatal care	13
Triage	20
Vaginal birth after caesarean	11
Total	**155**

3.2.3 National reports, including the Ockenden Report (Ockenden, 2020), were reviewed for recommendations made about risk assessments in maternity care.

3.2.4 Stakeholders with a national influence on the safe care of pregnant women/people during pregnancy and in the first 6 weeks after birth were identified. These stakeholders told the review about current national work in relation to risk assessments in antenatal, intrapartum and postnatal care. The stakeholders were:

- The Royal College of Obstetricians and Gynaecologists
- The Royal College of Midwives
- MBRRACE-UK (Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries across the UK)
- The British Association of Perinatal Medicine
- The National Institute for Health and Care Excellence.

4 Analysis and findings

This section describes the national learning report findings in relation to the risk assessment of pregnant women/people throughout the maternity pathway, including pregnancy, labour and birth. The findings are grouped according to six key themes:

- Risk assessment and language
- Risk assessment and clinical oversight
- Risk assessment and triage
- Risk assessment and place of birth
- Risk assessment and previous caesarean birth
- Risk assessment and induction of labour (IOL).

These themes have been analysed based on the evidence from individual HSIB maternity investigation programme reports.

4.1 Risk assessment and language

4.1.1 Risk assessments in maternity care may result in limited options for categorising risk – for example, 'low risk' or 'high risk'. The use of 'low risk' and 'high risk' has been described by healthcare professionals as part of our investigations as restrictive and may result in people thinking the level of risk cannot change. In addition, such terms can be seen as judgemental, and a 'label' of low/high risk may heavily influence the choices of a pregnant woman/person.

4.1.2 Terms such as 'midwifery led', 'obstetric led' or 'shared care' may not always be helpful. This language can influence the approach of healthcare professionals towards pregnant women/people, and lead to a potential for conflict among professionals.

4.1.3 The investigations reviewed included examples of when decisions were made about a model of care at the beginning of a woman/person's pregnancy, with no change to that care pathway when their risk level changed.

4.1.4 Risk assessments for women/people during pregnancy, labour and birth rely on healthcare professionals recognising changes in the individual's circumstances that may change their level of risk.

Risk assessment theme:

The language used to discuss and document risk assessments should encourage a dynamic and holistic assessment of the individual pregnant woman/person's risk ('dynamic' means the risk is continually assessed to allow for unknown factors and to handle uncertainty, while 'holistic' refers to looking at other factors that might be relevant) that promotes the need for maternity care to be provided by multi-professional teams.

Prompts for trusts to consider:

Are risk assessment and screening documents designed and presented in a consistent and logical way?

Does the language used in risk assessment and screening documents avoid binary definitions of risk, and instead promote dynamic and holistic risk assessments supporting a multi-professional approach?

4.2 Risk assessment and clinical oversight

4.2.1 Clinical oversight of a woman's care throughout pregnancy and during labour is an essential part of ongoing risk assessment, as it ensures that there is a holistic view of all the risks to both the pregnant woman/person and baby. Oversight may be provided by healthcare professionals with various levels of experience, as required by the identified risk factors.

4.2.2 The review identified 23 recommendations that were given to trusts regarding risk assessment and clinical oversight. The majority of these 23 recommendations related to care in labour, but some were applicable to the antenatal period. The findings leading to these recommendations linked to two broad themes:

- focus on a single risk factor
- poor communication and transfer of information between healthcare professionals.

Focus on a single risk factor

4.2.3 The thematic review found that clinicians would sometimes focus on a single risk factor, to the exclusion of making a holistic assessment of all the risk factors present. This phenomenon is recognised in the Royal College of Obstetricians and Gynaecologists (RCOG) 'Each baby counts' report (Royal College of Obstetricians and Gynaecologists, 2018).

A Woman was receiving care on the labour ward and her Baby's wellbeing was being assessed using a cardiotocograph. Concerns were identified with the Mother, who was showing signs of infection (suspected sepsis). The clinicians focussed on taking blood samples to test for sepsis and on starting treatment with antibiotics, as per national guidance. Because of the number of tasks that needed completing with respect to the Mother, changes in her Baby's wellbeing, as shown on the Baby's cardiotocograph trace, were not observed. When these changes were later identified, a decision was made for an emergency caesarean birth. The Baby was born in poor condition and required therapeutic active cooling treatment.

Communication and transfer of information between healthcare professionals

4.2.4 It is documented within the research literature that an accurate handover of clinical information is important to the continuity and safety of care (Smeulers et al, 2014; Royal College of Obstetricians and Gynaecologists, 2010).

4.2.5 As such, it is essential to record and transfer information relating to the risk factors of a pregnant woman/person and the developing fetus (National Institute for Health and Care Excellence, 2021b). Access to, and sharing of, this information enables everyone involved in the woman/person's care to be aware of, and alert to, any potential changes in risks, and ensures clinical decisions are made together. This includes involving the pregnant woman/person and enabling them to be an active partner in their care and to make choices based on an informed understanding of any and all of the risk factors present.

4.2.6 Review of the individual investigations revealed that a variety of tools are used to formalise the handover of clinical care, including situation, background, assessment, recommendation (SBAR) tools.

4.2.7 The investigations reviewed a mix of paper-based and electronic risk assessment tools. Some maternity care providers were found to use a mix of both, depending on whether the pregnant woman/person was seen in an antenatal clinic or on a labour ward. Previous HSIB investigations have identified issues with mixing paper-based and electronic record-keeping in antenatal and postnatal care (**Healthcare Safety Investigation Branch, 2022**).

4.2.8 The investigations identified a number of different tools used to record information on a pregnant woman/person's risks. There were inconsistencies in how risks were presented and how alerts for risk

factors were shared in individual Trusts. Examples included tick boxes on the booking assessment forms, specific fields for recording risk factors in antenatal notes, and assessment forms used in triage with boxes for recording risk factors.

4.2.9 The variety of risk assessment screening tools and methods for recording risk may compromise the ability of healthcare professionals to effectively communicate with each other regarding the cumulative picture of an individual's risks.

4.2.10 The investigations identified examples where verbal and written handovers between healthcare professionals during intrapartum care did not clearly communicate all of the risk factors. This compromised the safety of women/people and their pregnancies because the whole clinical picture was not known. There were several reasons for breakdowns in information transfer, including the following:

- SBAR handovers were shared verbally and not written down, resulting in the loss of important clinical information. The individual investigations noted that staffing pressures, including clinicians caring for a number of pregnant women/people who were very unwell, resulted in healthcare professionals not completing written SBARs.

- Unclear language was used in handovers in relation to risk factors (eg the cardiotocograph [CTG] "does not look good"). If the wellbeing of a baby is at risk and there is evidence of fetal compromise, the handover should include a systematic method of recording the characteristics of the CTG and the categorisation.

- There was unclear communication and understanding of critical information during some handovers. This appeared to happen when a high number of healthcare professionals were involved in caring for a pregnant woman/person, with no single identified lead person for their overall care.

4.2.11 Individual reports noted that structured handover tools were either not always used or completed in variable ways. The box below gives an example of how this impacted on the care of a pregnant woman.

A Woman had a high body mass index (BMI) in pregnancy. BMI is a measure that uses an individual's height and weight to work out whether their weight is healthy. The BMI was recorded in the Mother's handheld notes. She had attended her local maternity triage assessment on two occasions antenatally with reduced fetal movements; this was recorded in her electronic record. A plan of care was made antenatally with the Woman to receive obstetric-led intrapartum care on the labour ward.

The Woman presented to the hospital at 40 weeks in established labour. The clinician liaised with the labour ward and the birth centre and was told of the Woman's BMI. The handover did not include the history of reduced fetal movements or the previous plan of care for obstetric-led intrapartum care. It was agreed that the Woman would be transferred to the birth centre. A verbal handover was given at the birth centre, referring solely to the risk factor of the high BMI. The Baby's heart rate was assessed using intermittent auscultation, meaning the midwife used a device held to the Woman's tummy to listen to the Baby's heart rate. This happened at intervals of 15 minutes. A deterioration in the Baby's heart rate was noted and the Woman was transferred to the labour ward; cardiotocograph monitoring was commenced, which identified that the Baby was compromised. A caesarean birth was carried out and the Baby was diagnosed with hypoxic ischaemic encephalopathy, meaning their brain did not get enough oxygen.

Prompt for trusts to consider:

Does risk assessment and screening documentation support a holistic consideration and documentation of risk, or does it focus on only single risk factors?

4.3 Risk assessment and triage

Triage refers to the preliminary assessment of pregnant women/people to determine the urgency of their need for treatment and the nature of the treatment required. In maternity units, this often includes giving advice over the telephone on when the pregnant woman/person should go to the hospital/birthing centre, where they should go to give birth, and when they should call back for a further review. In addition, when a pregnant woman/person arrives at a unit then they undergo a face-to-face triage and are seen in order of clinical need.

The individual investigations made 20 recommendations to different trusts regarding risk assessments involving triage. These could be broadly split into two distinct categories: telephone triage and face-to-face triage.

Telephone triage

4.3.1 The investigations identified variations across England with regard to the risk assessment process for telephone triage.

4.3.2 Some maternity providers were found to have dedicated triage telephone lines. In most cases, this meant clinicians were specifically trained and able to use resources such as electronic patient records, guidelines and care pathways, and ensured calls were fully documented. Other maternity providers were found to not have dedicated telephone triage lines. This

meant that calls were taken in a variety of locations by differing healthcare professionals. In some cases, calls were answered by non-registered staff. This led to variable information and advice being given.

4.3.3 The review established that there were variations in the 'role' of those responding to telephone triage. In some areas, clinicians allocated to coordinate or provide one-to-one care were asked to undertake telephone triage in addition to their usual role. In another example, a non-registered member of staff was asked to communicate key information to clinicians and act as a messaging service.

4.3.4 The investigations found that pregnant women/people were given multiple different contact numbers, which made it difficult for them to reach the appropriate clinician when needed. The investigations found examples of pregnant women/people being unable to reach the telephone triage service either because they called the wrong telephone number (there were often up to eight different telephone numbers in a pregnant woman/person's maternity notes) or because there was no call-waiting system, divert system or answerphone.

4.3.5 Some telephone triage calls are answered away from the assessment or triage area, and in some cases away from the maternity unit entirely. The benefits of this are that the person answering the call is not interrupted or distracted, and their advice is not influenced by the busyness of the department.

4.3.6 Triage proformas may be used to conduct a structured assessment of the pregnant woman/person and baby over the telephone. These may contain parameters that specify what actions should be taken and the urgency of those actions. Some systems use colour-coded visual cues to aid the assessment. These may be electronic, paper based or a combination of both.

4.3.7 The investigations found that if a structured system was in place for proformas to be used, the proforma was not always available in the place where the call was taken. This led to an alternative or no method of recording the call.

4.3.8 The investigations found that paper-based triage systems often did not allow the person taking the call to a review the pregnant woman/person's medical record, including their medical history, call history and previously given advice.

4.3.9 Where electronic information systems had been introduced, these allowed telephone triage calls to be recorded and for the person taking the call to view the pregnant woman/person's history and clinical notes.

A Woman who was pregnant with her first Baby contacted maternity triage to report contractions at 37 weeks' gestation. There was no record of this call and there was no evidence of a structured assessment. The Woman had been diagnosed with a small-for-gestational age Baby and reduced liquor several days earlier and was awaiting induction of labour. This information was unknown at the time of the call. The Woman was advised to stay at home. She presented several hours later to the hospital and was diagnosed with pre-eclampsia and intrauterine fetal death.

Risk assessment themes:

Telephone triage services should support 24-hour access to a systematic structured risk assessment of pregnant women/people's needs.

Telephone triage services should be operated by appropriately trained and competent clinicians who are skilled in the specific needs required for effective telephone triage.

Prompts for trusts to consider:

Do telephone triage services facilitate 24-hour support for systematic risk assessment?

Are clinicians equipped with the appropriate training, skills and competencies to manage an effective telephone triage service?

Face-to-face triage

4.3.10 Face-to-face triage occurs when a pregnant woman/person attends in person at the maternity unit. There is no consistency in the location of face-to-face triage assessment, and individual maternity investigations reported triage being undertaken in labour wards, birth centres, triage units and day assessment units.

4.3.11 Some hospitals were found to have dedicated triage units, but not all of these operated 24 hours a day, 7 days a week. There is variation in where triage occurs or whether triage assessment tools used.

4.3.12 The review found examples in individual maternity investigation reports of inconsistencies in the clinical assessment of pregnant women/people attending triage, even within the same unit, and this was sometimes related to the time of day at which the triage took place. At one hospital, for example, pregnant women/people who presented with reduced fetal movements between 08:00 and 20:00 hours went to an assessment unit, where they underwent a computerised CTG in line with national guidance.

This did not happen if they presented after 20:00 hours, as the assessment unit was closed and the computerised CTG machines were not available on the labour ward.

4.3.13 Triage and assessment units can be busy, and there does not always appear to be a clear process for escalation prior to or following a face-to-face assessment. The review of investigation reports found that many trusts do not have a system for prioritising pregnant women/people who are attending for a triage assessment. In addition, the order in which pregnant women/people underwent review was sometimes unclear.

4.3.14 Some triage units may rely on the telephone triage proforma to prioritise, while others may see pregnant women/people in order of arrival or have an appointment-based system. This may lead to women/people waiting to be seen for potentially urgent problems.

4.3.15 The investigations observed examples of traffic-light triage tools, and some trusts have implemented the Birmingham Symptom-Specific Obstetric Triage System (BSOTS) (Academic Health Service Network. (2013). BSOTS is a maternity triage system that was designed to improve the safety of pregnant women/people and babies, and department management. It consists of a prompt and brief assessment (triage) of pregnant women/people when they present with unexpected problems or concerns, and then a standardised way of determining the clinical urgency in which they need to be seen.

4.3.16 The review found examples of 'symptom-specific' triage proformas in use. They saw examples of when using such specific tools limited a more holistic assessment of the pregnant woman/person, concentrating on the single problem as opposed to exploring other concerns.

4.3.17 Previous HSIB reports have recommended that healthcare providers consider guidance such as the 'Principles for effectiveness and usability' (Chartered Institute of Ergonomics and Human Factors, 2020) when developing risk assessment tools. The aim is to ensure that assessments are simple to use, which means that clinicians are more likely to complete them thoroughly and avoid tick-box fatigue.

4.3.18 There are currently no nationally recommended triage tools or guidance for maternity care, although HSIB is aware that the RCOG is producing guidance on triage for maternity units. This is expected to be published in 2023.

A Woman attended face-to-face triage after telephoning with abdominal pain, diarrhoea and reduced fetal movements for more than 12 hours. On arrival, she was asked to sit in a waiting room and pregnant women/people were seen in order of arrival, rather than clinical need. There was no system of immediate assessment on the triage unit. The Woman waited more than an hour to be seen. A cardiotocograph was started, but was not reviewed for a further hour – at which time it was noted that the CTG was abnormal and the Baby was likely to be short of oxygen (hypoxic) and required immediate birth.

Risk assessment theme:

Face-to-face triage in maternity units should use a structured approach to prioritise pregnant women/people to be seen in order of clinical need.

Prompt for trusts to consider:

Is a structured approach used so that pregnant women/people are seen in order of clinical need within your maternity face-to-face triage service?

4.4 Risk assessment and place of birth

4.4.1 Depending upon trust resources, pregnant women/people have up to four options of where they may wish to give birth: home birth, alongside midwifery unit or in standalone midwifery unit, for those assessed to be 'low risk'; and in an obstetric-led unit for those assessed to be 'high risk'.

4.4.2 Analysis of the individual maternity investigations indicates that the decision on the place of birth may be based on whether a pregnant woman/person is considered to be low or high risk, as indicated at their booking appointment, and may not be revisited during their pregnancy.

4.4.3 National guidance (National Institute for Health and Care Excellence, 2021b) recommends that discussions with pregnant women/people about 'birth preferences and the implications, benefits and risks of different options' start before 28 weeks and that after 28 weeks, the discussions give information about 'preparing for labour and birth, including information about coping in labour and creating a birth plan'. When completing an initial assessment of a pregnant woman/person in labour, national guidance recommends (National Institute for Health and Care Excellence, 2017) that 'any risk factors recorded in the woman's notes that indicate the need for obstetric led care' are considered, and if present the woman/pregnant person is transferred to obstetric led care.

4.4.4 'Place of birth' recommendations within the completed HSIB maternity investigation reports were reviewed. These recommendations could generally be divided by decisions about the place of birth:

- at the first antenatal risk assessment
- at the start of labour
- during labour.

Antenatal risk assessment for place of birth

4.4.5 The investigations observed examples of discussions at the early stage of pregnancy about the pregnant woman/person's options for giving birth. These discussions were introduced as a simple and binary low risk versus high risk. It is not always the case that a pregnant woman/person who is on an obstetric-led pathway during pregnancy requires obstetric-led care for birth. Likewise, those pregnant women/people on a midwifery-led pathway antenatally may have risk factors for birth that require an obstetric-led unit.

4.4.6 The investigations noted that part of the booking appointment involves identifying clinical risks and sharing options with the pregnant woman/person about where they can give birth. This discussion determines the initial decision regarding where a pregnant woman/person prefers to labour and birth. The investigations identified examples of where these decisions were not revisited when risks changed during pregnancy. This may have led to pregnant women/people being unaware of their choices regarding place of birth. For example, some pregnant women/people expressed a preference for a midwifery-led birth when the clinical risk assessment indicated that an obstetric-led place of birth may be the recommended option. This meant that the risks and implications for a pregnant woman/person and their baby related to place of birth were not fully explored to ensure an informed choice was made.

4.4.7 The investigations saw examples of trusts that held multidisciplinary clinics for pregnant women/people seeking individualised care that did not fall within guidelines. These clinics involved detailed discussions about how they could meet the needs of pregnant women/people who wished to give birth outside of recommended guidance, and create as safe conditions as possible to manage risk. In addition, the investigations saw examples of maternity providers that did not appear to support clinicians providing care for pregnant woman/person who choose care outside of guidance.

4.4.8 The Royal College of Midwives (2022) has recently published guidance on supporting women seeking care outside guidance.

A Woman attended for a booking appointment in her second pregnancy. Her blood pressure was found to be above the expected range. She reported that she had 'white coat hypertension' (a condition where blood pressure readings are higher in a clinic setting than they would normally be at home) and had previously been given a kit to monitor her blood pressure at home. The Woman was overweight, with a body mass index of more than 35kg/m2. She expressed a preference to labour and birth on the 'alongside midwifery-led unit'.

It was documented during the booking appointment that the Woman required an obstetric review, and that her antenatal care was to be shared between the midwifery and obstetric teams. She was not referred to an obstetrician and a home blood pressure monitoring kit was not provided. There was no evidence of a robust discussion with the Woman about her preferred place of birth. When the Woman went into spontaneous labour, she attended the alongside midwifery-led unit, but was transferred to the obstetric-led unit because of elevated blood pressure.

Location of care at start of labour

4.4.9 The investigations found evidence that risk assessments for pregnant women/people planning a home birth were not always undertaken at the beginning of intrapartum care. Clinicians caring for a pregnant woman/person outside the maternity unit were not always able to connect to the internet, and therefore could not access medical records, guidelines and tools. This meant that parameters for changing the direction of, or escalating care were not always fully understood.

4.4.10 The investigations saw examples of when pregnant women/people were invited into a low-risk birth setting when admission to an obstetric-led unit was indicated. An example of this was when a pregnant woman/person reported that her baby's movements were reduced or different that day to normal. This should have provided an opportunity to reassess the place of birth following a discussion between the pregnant woman/person and healthcare professionals. Not undertaking such a reassessment may be related to a tendency to 'stick to the original plan' or not recognising changes to the risk profile of the individual. A further example of this was when a pregnant woman/person remained in a midwifery-led unit despite finding that the symphysis-fundal height was smaller than expected, which may indicate that growth of the baby had slowed.

4.4.11 The investigations found examples of where a pregnant woman/person's risks were not always well-communicated across different teams in maternity units. Obstetric opinion was not always sought in a timely manner, or at all. The investigations found that these gaps impacted on safe care.

A Woman attended a booking appointment for maternity care. Her medical history included anxiety and depression, for which she was taking medication. She had a high body mass index. The Woman did not speak English and interpreting services were not consistently used in all antenatal appointments. She was booked for obstetric-led care.

At 41 weeks, she arrived at the midwifery-led birth centre as she was not sure where she was supposed to go when she thought she was in labour. As she appeared to be in advanced labour, she was admitted to the birth centre and remained there. Her maternity record was not reviewed, and the Woman was not risk assessed on admission as clinicians focussed on providing labour care.

The Baby was born and required extensive resuscitation; they were subsequently diagnosed with hypoxic ischaemic encephalopathy.

Location of care during labour

4.4.12 Clinical risk assessments completed when a pregnant woman/person is in labour are linked to whether that individual is in the safest place to give birth. The investigations identified that this process is not always dynamic and responsive. As a result, changes in a pregnant woman/person's clinical risk factors do not always prompt a timely change to the safest place for that individual to give birth.

4.4.13 A review of the individual investigation reports suggested that when a pregnant woman/person's waters are broken, either artificially or spontaneously, the colour of the liquor may be described as 'pink' or 'slightly blood stained'. Vaginal bleeding (and blood-stained liquor may imply this) is a reason for referral for a clinical assessment by the obstetric team, as per national guidance (National Institute for Health and Care Excellence, 2017).

4.4.14 The review identified examples in several investigation reports where the liquor was described as 'pink', but the pregnant woman/person remained in a low-risk environment and an obstetric opinion was not sought.

A Woman was admitted to an alongside midwifery-led unit in established labour. Following a vaginal examination, it was noted that her labour had slowed and her cervix was not dilating as expected. An artificial rupture of membranes was completed, and the colour of the Woman's liquor was documented as 'pink'. The Baby's heart rate continued to be monitored using intermittent auscultation and the Woman's labour continued. The Woman's liquor remained documented as 'pink'. Just over an hour later, a deceleration was heard on intermittent auscultation (that is, the Baby's heart rate decreased for at least 15 seconds) and the Woman was transferred to the labour ward, where a cardiotocograph was started. The cardiotocograph was categorised as pathological, and the Baby was born by category 1 caesarean birth. The Baby required extensive resuscitation and therapeutic cooling; they were diagnosed with hypoxic ischaemic encephalopathy.

4.4.15 Decisions about place of birth are made early in pregnancy, and are complex and multifactorial. These decisions are often taken before any pregnancy-related risks develop. HSIB investigations suggest that early expectations about the place of birth make it difficult to change the individual's pathway. National guidelines recommend that discussions about the pregnant woman/person's birth preferences should start before 28 weeks, including a conversation about the implications, benefits and risks of all the options (National Institute for Health and Care Excellence, 2021b).

4.4.16 The investigations identified other factors that might result in a pregnant woman/person not being transferred to an obstetric-led unit at the start of or during labour, including pressures of the unit in relation to staffing or available rooms or the requirement to demonstrate sufficient births taking place in a particular setting. There may also be consideration to pressures elsewhere in the maternity unit, prioritising the safety of the whole unit not one individual.

Risk assessment theme:

Clinicians should be enabled to proactively monitor and recommend the place of labour care and birth for pregnant women/people based on the individual's specific care needs during the course of their pregnancy and labour.

Prompts for trusts to consider:

Are there frequent opportunities to revisit and recommend the place of birth based on the pregnant woman/person's individual needs?

Does your risk assessment tool encourage clinicians to think about the most suitable place of birth when a pregnant woman/person in labour is admitted?

Do processes support holistic risk assessments to be revisited during labour to proactively assess the most suitable place for fetal monitoring and birth?

4.5 Risk assessment and previous caesarean birth

4.5.1 Research confirms that women with previous caesarean births are more likely to experience complications during future pregnancies and births (Royal College of Obstetricians and Gynaecologists, 2015). It is recommended that discussions regarding vaginal birth after caesarean birth (VBAC) start early in pregnancy, and that the birth plan – including place of birth, method of fetal monitoring and IOL – is agreed with the woman/person and documented in the maternity record before 36 weeks' gestation. These discussions should include any events that would prompt discontinuing the plan for a VBAC.

4.5.2 The investigations found evidence that information given to pregnant women/people regarding the risks and benefits of birth options after a caesarean birth is inconsistent, and often depended on the experience of the healthcare professional involved. In addition, there was inconsistency in when these conversations would take place during the pregnancy. This meant that the conversation could be had as part of planning the birth, or when the pregnant woman/person was already in established labour and trying to absorb information when fatigued and distressed. The national learning review observed that trusts used different risk assessment tools relating to caesarean birth, some of which were based on the tool provided in the RCOG guidance (Royal College of Obstetricians and Gynaecologists, 2015). There were also inconsistencies in how the tools were used.

4.5.3 Pregnant women/people who have had a previous caesarean birth can choose between an elective repeat caesarean birth or VBAC. Planned VBAC is a clinically safe choice for most people with a single previous caesarean birth. Those who have had two or more caesarean births may be offered VBAC after appropriate counselling with a senior obstetrician. National guidance on birth options after caesarean birth is available (Royal College of Obstetricians and Gynaecologists, 2016).

4.5.4 The review observed that individual HSIB investigations had made safety recommendations, which were shared with trusts, regarding the risk assessment of women who planned for a VBAC. These recommendations were divided into two distinct categories for purposes of this review: antenatal and intrapartum risk assessments.

Antenatal risk assessment for women who had previous caesarean birth

4.5.5 The RCOG states that pregnant women/people with an increased chance of uterine rupture should undergo an individualised assessment for the suitability of VBAC (Royal College of Obstetricians and Gynaecologists, 2015). The national recommendation is that a pregnant woman/

person should be informed that planned VBAC is associated with an approximately one in 200 chance of uterine rupture. The chance of uterine rupture depends on individual risk factors and is increased in the presence of more than one risk. Risk factors for uterine rupture include:

- women with previous caesarean birth who have not previously given birth vaginally (Royal College of Obstetricians and Gynaecologists, 2015)
- the indication for and the nature of the previous caesarean births (Royal College of Obstetricians and Gynaecologists, 2015)
- induced or augmented labour (ie labour that is started or helped along artificially)
- suspected macrosomia (birthweight of 4 kg or more is associated with an increased risk of uterine rupture) (Royal College of Obstetricians and Gynaecologists, 2015)
- body mass index (BMI) (raised)
- pregnancy interval of less than 6 months
- previous uterine rupture (Royal College of Obstetricians and Gynaecologists, 2015)
- previous uterine surgery (particularly if the uterine cavity has been breached), for example removal of part of the womb or removal of fibroids (Royal College of Obstetricians and Gynaecologists, 2015).

4.5.6 RCOG guidance suggests that, for the majority of individuals, counselling on the mode of birth can be conducted by a member of the maternity team soon after the woman/person's mid-trimester ultrasound, assuming there are no contraindications to planning a VBAC (Royal College of Obstetricians and Gynaecologists, 2015). The timing of this review is important, as it can facilitate information-sharing with a pregnant woman/person to ensure their awareness of all the risks, including the individualised chance of a successful VBAC and available options for labour and birth. The investigations found evidence that specific VBAC counselling was sometimes not offered prior to 36+0 weeks by either midwifery-led VBAC clinics or obstetric-led clinics.

4.5.7 The individual investigations found that while the overall risks and benefits of VBAC were discussed, a pregnant woman/person was often not given their individualised chance of success of VBAC or their individualised risk of uterine rupture. Individualised success rates for VBAC (Royal College of Obstetricians and Gynaecologists, 2015) are influenced by:

- reason for previous caesarean birth
- maternal BMI
- maternal age
- previous labours
- previous vaginal births
- previous successful VBAC.

4.5.8 The chance of a successful planned VBAC is 72–75% (Royal College of Obstetricians and Gynaecologists, 2015). The investigations observed that this figure was quoted to the majority of pregnant women/people. However, this percentage can vary greatly when individual risk factors are taken into consideration. For example, the RCOG advises that pregnant women/people with one or more previous vaginal births should be told that previous vaginal birth, particularly previous VBAC, is the single best predictor of successful VBAC and is associated with a planned VBAC success rate of 85–90% (Royal College of Obstetricians and Gynaecologists, 2015). However, the success rate decreases to 40% in those with induced labour, no previous vaginal birth, a BMI higher than 30kg/m2 and a previous caesarean for a slow labour (labour dystocia) (Royal College of Obstetricians and Gynaecologists, 2015). The investigations noted that when pregnant women/people are not told about these individualised risk factors, they are not able to be actively engaged and supported in their decision making. The investigations observed that the accompanying RCOG information leaflet given to pregnant women/people (Royal College of Obstetricians and Gynaecologists, 2015) does not reflect the lower success rates associated with some individualised risks, and therefore may not fully aid supported decision making.

4.5.9 The RCOG guideline makes reference to individualised risk assessment for a pregnant woman/person who wishes to undergo VBAC (Royal College of Obstetricians and Gynaecologists, 2015), but does not give specific guidance on how these individual risk assessments should be undertaken. The review is aware of online VBAC calculators (e.g. Gerhardy, 2022) that can help to calculate a pregnant woman/person's individual risks, based on factors including their age, height, weight and BMI, plus delayed progression in labour for prior caesarean birth and treated chronic hypertension.

4.5.10 The investigations observed examples of the use of checklist stickers in the notes for 'mode of birth after previous [caesarean birth]'. These checklists did not refer to individualised risk assessments. The RCOG has suggested a tool that enables individualised risk assessments (Royal College of Obstetricians and Gynaecologists, 2015). The RCOG tool was not used in the cases reviewed by the investigations.

4.5.11 The investigations observed phrases such as 'low threshold for [caesarean birth]' being used. These were recorded about pregnant women/people who wanted a VBAC. The investigations considered that a personalised care plan for labour would support clincians to understand a pregnant woman/person's personalised threshold for intervention in labour and minimise the risk of phrases being misunderstood. Guidance on the antenatal plan for a pregnant woman/person aiming for a VBAC is available, and states that the parameters for using oxytocin for inducing or augmenting labour should be discussed by a senior healthcare professional and the pregnant woman/person (Royal College of Obstetricians and Gynaecologists, 2015).

A Woman attended her booking appointment, and it was noted that she had previously had an unplanned caesarean birth at 39 weeks following unsuccessful induction of labour, and that her previous Baby was large for gestational age. The Woman received midwifery-led care. She did not undergo a review with a senior clinician, and so the risks of uterine rupture and success rates for VBAC were not individualised for this Woman or discussed in detail. The Woman wished to give birth in her home environment and a plan of care was agreed. The home birth service was suspended due to the COVID-19 pandemic, which led to the Woman engaging an independent midwife.

At 42+0 weeks, the independent midwife attended the Woman's home as she was experiencing very strong contractions. When the midwife arrived, she found the Woman was in established labour. She progressed to the second stage of labour within a few hours.

Intermittent auscultation was used to assess the wellbeing of the Baby throughout labour. After a few hours, the Woman experienced severe abdominal pain and the Baby's heart rate was heard to be below the expected range at 100bpm. The midwife suspected a uterine rupture and called an ambulance. The hospital was informed of the emergency, and the Woman was transferred and arrived on the delivery suite 20 minutes later.

A category 1 caesarean birth was performed, and uterine rupture was confirmed. The Baby was born with no signs of life and, following prolonged resuscitation, was pronounced stillborn.

Intrapartum risk assessment for women planning a VBAC

4.5.12 The review found that each pregnant woman/person should have an individualised care plan at every step of a VBAC IOL. This should include information-sharing of the risk and benefits of IOL or augmented labour to enable supported and informed decision making.

4.5.13 The investigations saw examples of incomplete clinical risk assessments in pregnant women/people who were known to be aiming for VBAC. This led to challenges when they attended hospital in spontaneous labour or to start IOL or augmentation of labour. Some of the risk assessments did not consider:

- a pregnant woman/person's individual risks
- the safe use of prostaglandins or oxytocin
- the parameters for assessing progress in labour and timely intervention.

4.5.14 The investigations found that risk assessments were not always carried out at the start of IOL. The risks and benefits of different methods of IOL were not discussed with pregnant women/people, which led in some cases to prostaglandins or oxytocin being used without a clear plan or supported decision making.

4.5.15 RCOG suggests that the decision to induce or augment VBAC labour should be determined following careful obstetric assessment and be made by senior obstetricians in consultation with the women. As part of informed consent, women should be made aware of the increased risks (uterine rupture and emergency caesarean delivery) associated with induction and/or augmentation of VBAC labour, and of the alternative option of caesarean delivery (Royal College of Obstetricians and Gynaecologists, 2015).

4.5.16 The investigations found that when oxytocin was commenced during labour, the pregnant woman/person was not always informed of the risks and benefits of its use and the alternatives. Some clinicians perceived the use of oxytocin in pregnant women/people with a previous caesarean birth as routine practice.

A Woman with a history that included gestational diabetes and a previous caesarean birth expressed a preference for a VBAC. Her waters broke at 40+3 weeks, and she attended the maternity unit. On admission, the Baby's heart rate was higher than the expected range. A plan was made for the Woman's labour to be augmented (i.e. sped up) with an intravenous oxytocin infusion. An updated dynamic/holistic individual risk assessment did not take place to help inform the Woman about her individualised risks to enable supported decision making. During labour, the Baby's heart rate dropped, the Woman was transferred to the operating theatre for an emergency caesarean birth and a uterine rupture was confirmed. The Baby was born requiring resuscitation and received therapeutic cooling for 72 hours.

Risk assessment theme:

Each pregnant woman/person should be helped to understand their individualised risk associated with a vaginal or caesarean birth after a previous caesarean birth, based on their specific risk factors and care needs.

Prompts for trust to consider:

In antenatal discussions with pregnant woman/people, are structured tools used to support individualised care planning and decision-making when planning a birth after a previous caesarean birth?

Is there an opportunity to revisit these discussions when there is a change in circumstance, such as induction of labour?

4.6 Risk assessment and IOL

IOL is the process of artificially starting labour. It can use a variety of medications and techniques. Usually, the first stage is to soften and prepare the pregnant woman/person's cervix by using prostaglandin tablets, pessaries or gels. Sometimes the cervix will be prepared using a mechanical method, such as a balloon. The next stage is to artificially break the waters (i.e., artificial rupture of membranes). If contractions are still not strong or regular enough, then oxytocin is given. Oxytocin is one of the hormones produced naturally by pregnant women/person in labour and helps to increase the frequency of contractions. Oxytocin is given through a drip, and the timing of the subsequent contractions is closely monitored. If the contractions are too sparse, or conversely become too frequent, then the amount of oxytocin given via the drip is changed.

4.6.1 The investigations provided 22 safety recommendations to different trusts regarding risk assessments and IOL. These recommendations fell into the following themes:

- individualised care plans
- holistic obstetric reviews
- communication of individualised risks.

Individualised care plans

4.6.2 Changes in national guidance (NHS England, 2019) have led to a national rise in IOL rates over the last few years, without a corresponding capacity and workforce increase.

4.6.3 The investigations saw evidence of insufficient capacity in some maternity units to accommodate the number of pregnant women/people who were planned for IOL. In England, 39% of pregnancies end in IOL (National Maternity and Perinatal Audit (NMPA), 2022). The investigations saw examples of some pregnant women/people being offered the next available appointment for IOL, rather than an appointment based on their individual risk assessment and reason for IOL. The investigations observed that this approach was more common for women who were considered 'low risk', for example if they were post-dates (greater than or equal to 41 weeks gestation).

4.6.4 In some of the cases reviewed, there were indications that pregnant women/people with complex pregnancies and increased risk factors (e.g. twins, polyhydramnios [an excessive accumulation of amniotic fluid in the uterus during pregnancy] or persistent reduced fetal movements) were often treated in the same way as pregant women/person with 'low-risk' pregnancies who were being induced. This did not take into account their individualised risks.

4.6.5 The investigations found evidence that when there were a number of pregnant women/people booked for IOL and there was insufficient capacity in the unit, pregnant women/people's risks were sometimes assessed relative to one another to prioritise people for IOL, as opposed to looking at the risk assessment for each individual.

4.6.6 It was reported that pregnant women/people requiring IOL are often considered as a group and counted each shift. An example of frequently heard comments in interviews included: "How many women do we have requiring IOL?" This means that the pregnant women/people requiring IOL were being treated as a number rather than their individual needs.

4.6.7 The investigations saw evidence that as pregnant women/people undergoing IOL are not in established labour and do not require one-to-one care, there is limited clinical oversight over them. In some areas their care was overseen by the labour ward team, where there was little detailed information regarding each pregnant woman's/person's specific risks and they were treated as a homogenous group.

4.6.8 The investigations saw evidence of pregnant women/people being on a generic IOL pathway, without a personalisation of care. In some cases, this meant that monitoring of pregnant women/people and babies was not as frequent as required.

Holistic obstetric reviews during IOL

4.6.9 The review found evidence that midwives are increasingly leading the care of pregnant women/people with a complex care pathway, with minimal obstetric oversight. This may mean that some pregnant women/people who experience prolonged IOL will have different methods used to induce the labour without revisiting the risk assessments and discussing the individual's choices. As these pregnant women/people are undergoing IOL, they may not form part of obstetric antenatal or labour ward rounds, and therefore miss out on individualised risk assessments and opportunities for discussion and choices.

4.6.10 The investigation saw evidence that two or more prostaglandins were sometimes administered for IOL outside of normal procedure. National guidance states the pregnant women/people who have had a previous caesarean birth must be advised about the increased risks of emergency caesarean birth and the increased risk of uterine rupture. The method of IOL offered needs to be guided 'by the need to reduce these risks'. Women and pregnant people must be advised that not all methods of IOL are suitable if they have a uterine scar (National Institute for Health and Care Excellence, 2021c).

Communication of individualised risks during IOL

4.6.11 Local guidance usually follows national guidance (National Institute for Health and Care Excellence, 2021c), which clearly states that 'the risks and benefits of induction of labour in specific circumstances, and the proposed induction methods' are to be discussed with pregnant women/people and documented.

4.6.12 The investigations found that discussions and communication with pregnant women/people about their individualised risks during IOL were variable. In several investigations, the evidence suggested that discussions

with pregnant women/people were either absent or not well documented. Families shared that they did not recall robust discussions about risk, either at the point the IOL was booked or when the IOL was underway.

4.6.13 The investigations found that it was not always clear why discussions with women had not taken place. The investigations have recommended that trusts review the barriers and reasons why these discussions either do not take place or are not clearly documented.

Risk assessment theme:

Pregnant women/people whose labour has been induced need clinical oversight and an individualised plan of care for maternal and fetal monitoring.

Prompts for trusts to consider:

Are clinicians encouraged to make individual plans, taking into consideration a pregnant woman/person's and baby's risk during the induction of labour process and including frequency of observations, fetal monitoring and place of induction?

Is there a system to prioritise pregnant women/people requiring induction of labour according to clinical need, and to ensure appropriate escalation and action when there are delays?

5 Summary of findings

This report has looked at recurring themes arising in HSIB maternity investigations relating to risk assessments, and how risk assessments are undertaken in maternity services.

Traditionally, risk assessments have been thought of as occurring at certain stages of pregnancy. However, it is very apparent that continual risk assessments are needed during pregnancy, labour and birth. This is reinforced by recent national reports, such as those arising from the Ockenden Review (Ockenden, 2020, 2022).

Risk assessments should not be tick-box exercises. Rather, they need to be dynamic and responsive to individualised risks and personal preferences. Maternity care should move away from a binary low-risk/high-risk model, and instead talk about the individual risks of the specific pregnant woman/person and their baby, and what these mean for that individual's pregnancy, labour and birth.

5.1 Risk assessment themes

HSIB has identified the following themes related to risk assessment in maternity care:

1 The language used to discuss and document risk assessments should encourage a dynamic and holistic assessment of the individual pregnant woman/person's risk ('dynamic' means the risk is continually assessed to allow for unknown factors and to handle uncertainty, while 'holistic' refers to looking at other factors that might be relevant) that promotes the need for maternity care to be provided by multi-professional teams.

2 Telephone triage services should support 24-hour access to a systematic structured risk assessment of pregnant women/people's needs.

3 Telephone triage services should be operated by appropriately trained and competent clinicians who are skilled in the specific needs required for effective telephone triage.

4 Face-to-face triage in maternity units should use a structured approach to prioritise pregnant women/people to be seen in order of clinical need.

5 Clinicians should be enabled to proactively monitor and recommend the place of labour care and birth for pregnant women/people based on the individual's specific care needs during the course of their pregnancy and labour.

6 Each pregnant woman/person should be helped to understand their individualised risk associated with a vaginal or caesarean birth after a previous caesarean birth, based on their specific risk factors and care needs.

7 Pregnant women/people whose labour has been induced need clinical oversight and an individualised plan of care for maternal and fetal monitoring.

Risk assessment prompts

This thematic review also includes prompts for NHS trusts to consider how these risks may be mitigated.

Prompts for NHS trusts to consider:

1 Are risk assessment and screening documents designed and presented in a consistent and logical way?

2 Does the language used in risk assessment and screening documents avoid binary definitions of risk, and instead promote dynamic and holistic risk assessments supporting a multi-professional approach?

3 Does risk assessment and screening documentation support a holistic consideration and documentation of risk, or does it focus on only single risk factors?

4 Do telephone triage services facilitate 24-hour support for systematic risk assessment?

5 Are clinicians equipped with the appropriate training, skills and competencies to manage an effective telephone triage service?

6 Is a structured approach used so that pregnant women/people are seen in order of clinical need within your maternity face-to-face triage service?

7 Are there frequent opportunities to revisit and recommend the place of birth based on the pregnant woman/person's individual needs?

8 Does your risk assessment tool encourage clinicians to think about the most suitable place of birth when a pregnant woman/person in labour is admitted?

9 Do processes support holistic risk assessments to be revisited during labour to proactively assess the most suitable place for fetal monitoring and birth?

10 In antenatal discussions with pregnant woman/people, are structured tools used to support individualised care planning and decision-making when planning a birth after a previous caesarean birth?

11 Is there an opportunity to revisit these discussions when there is a change in circumstance, such as induction of labour?

12 Are clinicians encouraged to make individual plans, taking into consideration a pregnant woman/person's and baby's risk during the induction of labour process and including frequency of observations, fetal monitoring and place of induction?

13 Is there a system to prioritise pregnant women/people requiring induction of labour according to clinical need, and to ensure appropriate escalation and action when there are delays?

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