



HEALTHCARE SAFETY
INVESTIGATION BRANCH

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Summary

National Learning Report Intrapartum stillbirth: learning from maternity safety investigations that occurred during the COVID-19 pandemic, 1 April to 30 June 2020

Independent report by the
Healthcare Safety Investigation Branch I2020/024

September 2021

Providing feedback and comment on HSIB reports

At the Healthcare Safety Investigation Branch (HSIB) we welcome feedback on our investigation reports. The best way to share your views and comments is to email us at enquiries@hsib.org.uk or complete our online feedback form at www.hsib.org.uk/tell-us-what-you-think.

We aim to provide a response to all correspondence within five working days.

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About HSIB

We conduct independent investigations of patient safety concerns in NHS-funded care across England. Most harm in healthcare results from problems within the systems and processes that determine how care is delivered. Our investigations identify the contributory factors that have led to harm or the potential for harm to patients. The safety recommendations we make aim to improve healthcare systems and processes, to reduce risk and improve safety.

We work closely with patients, families and healthcare staff affected by patient safety incidents, and we never attribute blame or liability.

Considerations in light of coronavirus (COVID-19)

We have adapted some of our national investigations, reports and processes to reflect the impact that COVID-19 has had on our organisation as well as the healthcare system across England. For this report, the way we engaged with staff and families was revised.

A note of acknowledgement to families

We would like to thank the families whose experiences are described in this report. We are grateful to those who generously gave their time under such difficult circumstances.

To protect the anonymity of the women and pregnant people and their families, clinical details of the woman and pregnant person's care and their experiences have not been described in this report.

Also to preserve anonymity, individuals are referred to as the woman, pregnant person, parent, baby or family member.

A note of acknowledgement to members of staff

We would also like to thank the healthcare providers and staff who participated in the maternity investigations and shared their perceptions of the incidents and the healthcare service with us, as well as expressing their empathy for the families involved.

A note to those pregnant or planning pregnancy

We appreciate that reading this report may be concerning for people who are currently pregnant, those planning a pregnancy or their families. It is important to acknowledge that during the time period covered by the report thousands of women and pregnant people and babies experienced a safe pregnancy, labour and birth.

Our investigations

Our investigators and analysts have diverse experience of healthcare and other safety-critical industries and are trained in human factors and safety science. We consult widely in England and internationally to ensure that our work is informed by appropriate clinical and other relevant expertise.

We undertake patient safety investigations through two programmes:

National investigations

Concerns about patient safety in any area of NHS-funded healthcare in England can be referred to us by any person, group or organisation. We review these concerns against our investigation criteria to decide whether to conduct a national investigation. National investigation reports are published on our website and include safety recommendations for specific organisations. These organisations are requested to respond to our safety recommendations within 90 days, and we publish their responses on our **website**.

Maternity investigations

We investigate incidents in NHS maternity services that meet criteria set out within one of the following national maternity healthcare programmes:

- Royal College of Obstetricians and Gynaecologists' 'Each Baby Counts' report
- MBRRACE-UK 'Saving Lives, Improving Mothers' Care' report.

Incidents are referred to us by the NHS trust where the incident took place, and, where an incident meets the criteria, our investigation replaces the trust's own local investigation. Our investigation report is shared with the family and trust, and the trust is responsible for carrying out any safety recommendations made in the report.

In addition, we identify and examine recurring themes that arise from trust-level investigations in order to make safety recommendations to local and national organisations for system-level improvements in maternity services.

For full information on our national and maternity investigations please **visit our website**.

Terms used in this report

Abdominal transducers are the devices placed on a woman and pregnant person's abdomen to measure contractions and the baby's heart rate.

Anomaly scan is the mid-pregnancy anomaly ultrasound scan (USS) looks for some physical abnormalities in a baby. The USS only looks for these problems and can't find everything that might be wrong. It looks in detail at a baby's bones, heart, brain, spinal cord, face, kidneys and abdomen. It allows the sonographer or doctor to look specifically for 11 conditions, some of which are very rare.

Carbon monoxide test tests for carbon monoxide (CO), a poisonous gas that reduces the amount of oxygen to both woman and pregnant person and baby. The CO test is a simple non-invasive breath test which gives a woman and pregnant person an immediate indication of the CO level in their body.

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 woman and pregnant 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 woman and pregnant person's abdomen.

Dating scan is an ultrasound scan completed around 10 – 14 weeks of pregnancy to check the duration of a pregnancy and the development of the baby.

Doppler device is the ultrasound equipment used during an ultrasound examination that measures blood flow in a baby and/or the placenta. It is used in a variety of situations to check on the health of a baby.

Established labour is when the woman and pregnant person's cervix is dilated to about 4 cms and they are having regular contractions.

Fetal and **fetus** is sometimes used in place of 'baby's' and 'baby'.

Fetal compromise refers to the restriction of blood flow to the baby during pregnancy.

Fetal scalp electrode (FSE) is a small clip placed on the unborn baby's head or bottom, if external monitoring produces an unreadable CTG. It is applied during a vaginal examination.

Growth scans is an ultrasound scan performed to check the overall wellbeing of a baby. It involves some combination of assessing a baby's size, the amount of fluid around a baby and the measurement of blood flow to the placenta and within a baby using Doppler ultrasound.

Histology is the study of human tissue using a microscope.

Histopathology is the study of changes in diseased human tissue using a microscope.

Intrapartum means the period of time from the onset of a woman and pregnant person's labour to when a baby is born.

Intrapartum stillbirth is when a baby was thought to be alive at the start of labour but was born, beyond 37 weeks of gestation, with no signs of life.

Intrauterine means within the woman and pregnant person's womb.

Latent phase of labour refers to the first part of labour, when there are painful contractions and there is some cervical change, including thinning out and opening of the cervix.

Meconium is a baby's first bowel motion, formed mainly of mucus and bile. It is usually passed after birth and can sometimes be found in the amniotic fluid ('waters') during labour.

Membrane sweeps where a midwife or doctor uses a single finger to sweep around the cervix in a circular motion to release hormones. This is designed to reduce the need for formal induction of labour.

Neonatal resuscitation the delivery of inflation breaths to a recently born baby with or without chest compressions.

Obstetric refers to care provided to a woman and pregnant person during labour and before and after a pregnancy.

Obstetric-led implies care will primarily be delivered by an obstetrician.

Perinatal refers to the period of time shortly before, during or after birth.

Placental pathologies refers to damage or insults to the placenta, the circulatory system between the woman and pregnant person and the fetus.

Resuscitaire is a medical device which has the capability to provide warmth, oxygen and resuscitation equipment to enable an emergency response to the birth of a baby.

Symphysis-fundal height is a measurement of the size of the uterus which is used to assess a baby's growth during pregnancy. It is measured from the top of the uterus to a woman and pregnant person's pubic bone.

Third trimester refers to the last 3 months of a pregnancy.



About this report

This national learning report highlights the themes identified within 37 HSIB maternity investigations into intrapartum stillbirth which occurred between April and June 2020. The report describes the context of the COVID-19 pandemic and how existing and emerging risks associated with maternity care may have impacted on the rate of referrals relating to incidences of intrapartum stillbirth that were made to HSIB during this time. Robust family engagement took place for each of the 37 maternity investigations; this report relies on evidence from the individual investigation reports and therefore independent consultation with families was not undertaken for this report.

The report is colour coded to reflect six themes representing the factors contributing to the risks managed within maternity care:

1 Guidance

2 Management of risk

3 Telephone triage

4 Interpretation services

5 Work demands and capacity to respond

6 Neonatal resuscitation (resuscitation of the newborn baby).

The figure on page 12 highlights how some risks are well recognised as existing in maternity care, and how some risks may have been exacerbated and others created by the COVID-19 pandemic.

Readers can choose to read all sections of the report or focus on specific contributory factors based on the colour-coded theme.

Executive Summary

Introduction

This national learning report reviews the findings of HSIB maternity investigations into intrapartum stillbirths referred between 1 April and 30 June 2020 (the first peak of the COVID-19 pandemic in England). 'Intrapartum' means the period of time from the onset of a woman and pregnant person's labour to when a baby is born. 'Intrapartum stillbirth' is when a baby was thought to be alive at the start of labour but was born, beyond 37 weeks of gestation, with no signs of life (see below for more details). In this report 'fetal' and 'fetus' is sometimes used in place of 'baby's' and 'baby'.

This report aims to:

- inform understanding about the range of factors that may have contributed to the increased referral rate to HSIB of incidences of intrapartum stillbirth
- promote and support learning discussions within organisations
- influence the development of systems and processes to optimise patient safety, particularly during times of increased pressure on the healthcare service
- identify potential safety risks that merit further HSIB investigation.

Method

A review of HSIB's maternity investigation reports identified 37 reports concerning cases of intrapartum stillbirth referred in this time period, where completed and checked reports were available and where families gave consent for publication. The reports were coded and analysed using recognised methods and themes were identified.

Definition of terms and investigation criteria

HSIB uses the definition of intrapartum stillbirth from the Royal College of Obstetricians and Gynaecologists (RCOG) Each Baby Counts national quality improvement programme: 'when the baby was thought to be alive at the start of labour but was born with no signs of life'. The HSIB criteria to investigate stillbirths includes full-term deliveries (beyond 37 weeks of gestation) following labour that resulted in an intrapartum stillbirth. This excludes cases that include the death of the woman and pregnant person and includes cases in which:

- labour was diagnosed by a health professional; this includes the latent phase of labour (when the woman and pregnant person's cervix is less than 4cm dilated)
- the woman and pregnant person called the unit to report any concerns of being in labour, for example (but not limited to) abdominal pains, contractions, or suspected ruptured membranes (waters breaking)
- the baby was thought to be alive at induction of labour (that is, at the time when labour was started artificially)
- the baby was thought to be alive following suspected or confirmed pre-labour rupture of membranes (that is, after the woman and pregnant person's waters had, or were suspected to have, broken before they had gone into labour).

Findings

No direct effects of COVID-19 infection were seen in any of the reports reviewed. Five of the women and pregnant people had clinical symptoms consistent with COVID-19 infection and none of them tested positive. Testing for COVID-19 was limited in the period covered by the review and not all women and pregnant people were tested. Of the 37 cases, 27 (73%) of pregnancies were at or beyond 40 completed weeks of pregnancy. The majority of deaths occurred due to problems with the placenta and compromised blood flow to the baby.

Of the women and pregnant people in the 37 reports, 16 (43%) had a first language other than English, and women and pregnant people from ethnic minority or socio-economically deprived backgrounds were over-represented.

Six main themes emerged from the analysis of the reports:

1 Guidance

2 Management of risk

3 Telephone triage

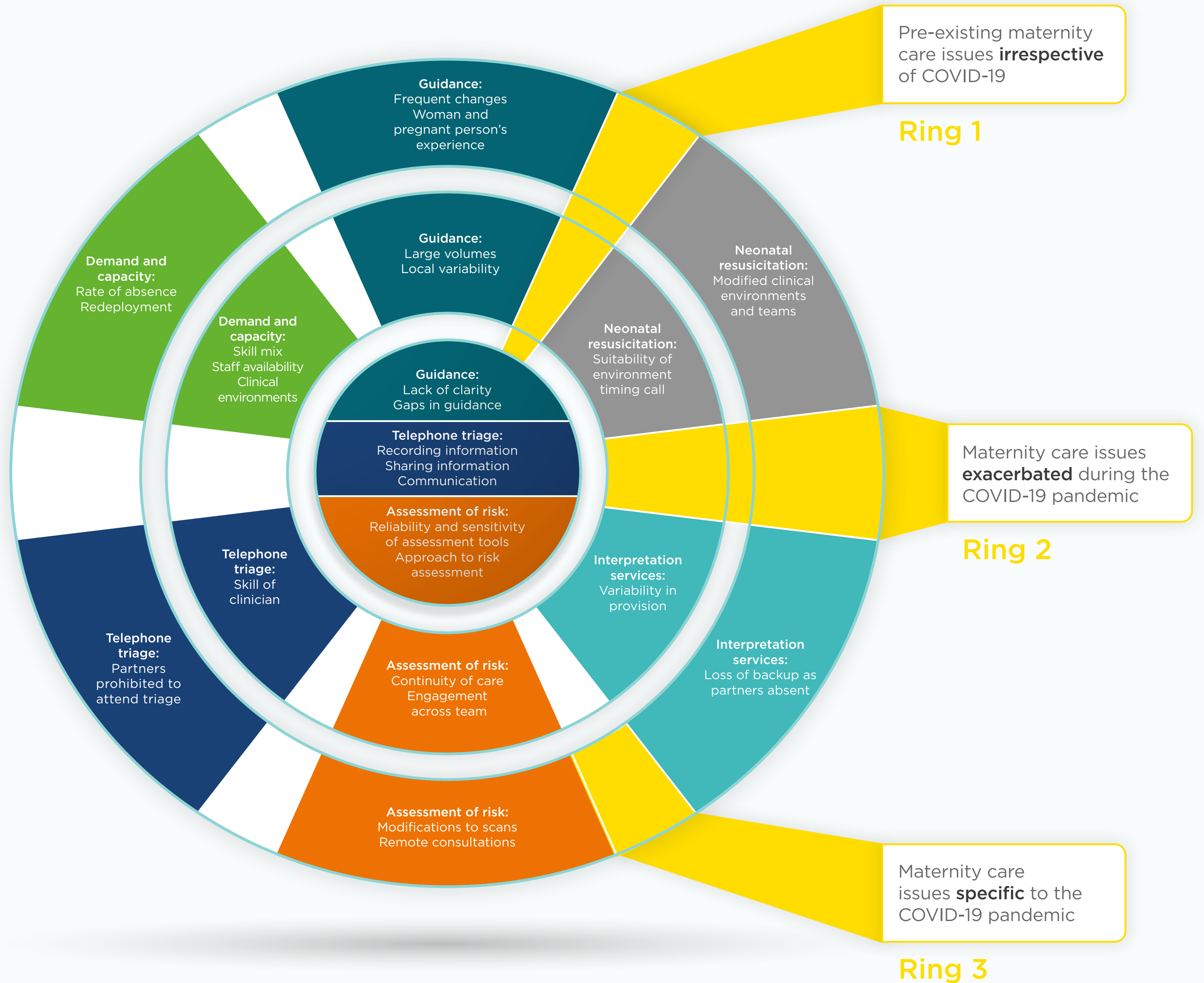
4 Interpretation services

5 Work demands and capacity to respond

6 Neonatal resuscitation (resuscitation of the newborn baby).

The figure below represents these themes, which are colour coded within the report, and reflect issues identified within the delivery of maternity care that either pre-existed, were exacerbated by, or were specific to, the COVID-19 pandemic.

- 1 Guidance
- 2 Management of risk
- 3 Telephone triage
- 4 Interpretation services
- 5 Work demands and capacity to respond
- 6 Neonatal resuscitation



1 Guidance

In response to the changing situation and developing understanding of risks during the first wave of the COVID-19 pandemic, a large volume of rapidly changing guidance was produced. Despite best efforts to make this accessible to staff, investigations found variation in local implementation, difficulty in assimilating the changes and in one instance an important discrepancy between two sets of current national guidance on the management of reduced fetal movements.

2 Management of risk

Although the NHS identified continued provision of maternity services as a priority, operational changes were made to reflect the need to reduce the risk of transmission of infection. In all the cases reviewed, the women and pregnant people received the recommended number of appointments and scans, and appropriate bereavement care was provided. Some face-to-face antenatal (pre-birth) visits were replaced with remote consultations, resulting in fewer opportunities to perform physical examinations such as symphysis-fundal height measurement (measurement of the size of the uterus which is used to assess a baby's growth during pregnancy), and carbon monoxide testing (a simple non-invasive breath test which gives women an immediate indication of the carbon monoxide level in their body) was paused. Some hospital ultrasound scans were stopped or delayed during this period.

3 Telephone triage

Difficulties in communication were identified, relating to the availability and presentation of clinical records, documentation and communication of information from triage calls, and availability of interpreters particularly in urgent circumstances. The usual reliance on family members to provide translation support, which is not in line with national guidance, was emphasised when policies were introduced requiring women and pregnant people to attend antenatal appointments alone.

4 Interpretation services

The review identified that family members do provide translation support when interpretation services cannot be provided by the local maternity service, even though this is not in line with national guidance. However, during the first wave of the pandemic, when women and pregnant people were required to attend antenatal appointments alone, the provision of interpretation services was even more critical.

5 Work demands and capacity to respond

Changes were identified in work processes, staffing levels and physical layout of the space in which staff were working, resulting from the pandemic. Membrane sweeps (a midwife or doctor uses a single finger to sweep around the cervix), designed to reduce the need for formal induction of labour, were stopped in some centres, to reduce the infection risk associated with more prolonged contact between patients and staff. Some of the necessary changes made to the physical space, for example to enable staff to don and doff (put on and take off) personal protective equipment, had unintended and unforeseen consequences in terms of the usability of equipment in its new position.

6 Neonatal resuscitation

The review highlighted gaps between how neonatal resuscitation (delivery of inflation breaths with or without chest compressions) is expected or imagined to work and how it actually happens. This issue has been highlighted in other types of national reports. The review identified that existing systems, equipment and environments to support neonatal resuscitation do not appear to consistently enable all staff to act and respond as required by the guidance.

Conclusion

This HSIB national learning report has identified significant efforts to maintain good care for patients during an unprecedented pandemic and the resulting changes in healthcare systems. HSIB makes safety recommendations to reduce variation and improve safety regarding remote consultation, communication, monitoring of fetal wellbeing, triage, and availability of interpretation services. Further safety recommendations relate to taking a proactive approach to the assessment of patient safety risks and the use of an overall safety management system in maternity care, as used in other safety-critical industries.

HSIB makes the following safety recommendations

Safety recommendation R/2021/144:

HSIB recommends that NHS England and NHS Improvement leads work to develop a process to ensure consistency and clarity across national maternity clinical guidance.

Safety recommendation R/2021/145:

HSIB recommends that future iterations of the Royal College of Obstetricians and Gynaecologists' guidance clarify the management of a reported change in fetal movements during the third trimester of pregnancy with due regard to national policy.

Safety recommendation R/2021/146:

HSIB recommends that NHS England and NHS Improvement leads work to collate and act on the evidence on the risks and benefits associated with the use of remote consultations at critical points in the maternity care pathway.

Safety recommendation R/2021/147:

HSIB recommends that NHSX develops specifications for electronic patient record (EPR) systems that require adherence to national interconnectivity standards for the exchange of core maternity healthcare information. The specifications should include functionality to enable both women and pregnant people and professionals to add to the record, and also support alerting functionality.

Safety recommendation R/2021/148:

HSIB recommends that the Department of Health and Social Care commission a review to improve the reliability of existing assessment tools for fetal growth and fetal heart rate to minimise the risk for babies.

Safety recommendation R/2021/149:

HSIB recommends that NHS England and NHS Improvement leads the development of minimum operating standards for pre assessment maternity telephone triage services to support safe and consistent telephone triage to ensure reliable identification of risks.

Safety recommendation R/2021/150:

HSIB recommends that NHS England and NHS Improvement develop minimum operating standards for interpretation services in maternity care which will include a communication risk assessment.

Safety recommendation R/2021/151:

HSIB recommends that NHS England and NHS Improvement develop a framework to support Trusts to anticipate operational risk in maternity services when delivering neonatal resuscitation.

HSIB makes the following safety observations

Safety observation O/2021/126:

It may be beneficial if further work is done to understand the specific aspects of the healthcare system which could explain the disparity in the experience and risk for women and pregnant people from Black, Asian and minority ethnic backgrounds and those with higher socio-economic deprivation.

Safety observation O/2021/127:

It may be beneficial if multidisciplinary simulation is considered as a tool to support prospective risk analysis for neonatal resuscitation.

Safety observation O/2021/128:

It may be beneficial if expertise applied within other safety critical industries is integrated into the development and implementation of a maternity-focused proactive safety management system.



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