Health Services Safety Investigations Body

Investigation report

Investigation report: Summary of themes arising from the Healthcare Safety Investigation Branch maternity programme

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Patient safety themes, Maternity

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Introduction

Since April 2018, HSIB has been responsible for initiating over 1,000 independent safety investigations in NHS maternity services in England. By December 2019 the programme had completed 280 investigations, with a further 145 investigations finalised and undergoing factual accuracy review by families and trusts. All completed maternity safety investigation reports are provided to the family and the NHS trust involved to ensure appropriate actions are taken.

In addition to producing reports, HSIB works with trusts and families to share information during the investigation to ensure areas that require immediate review are highlighted while the investigation is ongoing.

HSIB maternity programme has established quarterly review meetings with all trusts that provide maternity care to share issues identified during investigations and highlight relevant themes emerging locally and nationally.

This report summarises eight prominent themes that have emerged through analysis of completed maternity investigations, and how HSIB will explore these themes in more detail during the coming year.

1 Early recognition of risk

HSIB maternity investigations have highlighted complications in labour or birth which can be traced back to antenatal (pre-birth) care. Most mothers are categorised as being at low risk of complications at the beginning of their pregnancy. However, HSIB investigations have found that many mothers, as their pregnancy progressed, experienced events or changes in circumstances which increased their level of risk, but which were not recognised or factored into decision making about their care. These risks related to:

- multiple episodes of reduced fetal (baby) movements

- changes in maternal health that indicate the need for medical or mental health support
- lack of follow-up to ensure referrals to specialist services have taken place
- fundal height [1] measurements and/or ultrasound scan results not plotted on a chart to demonstrate the baby's growth is on the expected trajectory
- timely follow-up of test results.

HSIB found that these issues are not always recorded and considered by the maternity triage service, or the delivery suite staff when a mother is admitted. This can result in the mother's care being managed as low risk and the mother subsequently not receiving the appropriate level of care and monitoring that she requires.

Investigations frequently found that maternity staff were inclined to seek reassurance that symptoms were not a concern. Examples include:

- In one case, the Trust's staff were aware that a mother had presented on more than one occasion with reduced fetal movements, vaginal bleeding and other symptoms. On each occasion no significant problems were identified, and the staff and the mother were reassured. The mother had been identified as at low risk of complications, and staff found no reason to change this. Despite the mother's multiple attendances at the hospital, no review by a senior clinician occurred to assess the overall wellbeing of the mother and baby. The baby was unwell at birth, requiring admission to a neonatal intensive care unit.
- Investigations found a number of examples where there were multiple reassessments of a mother's progress in labour, or the cardiotocograph [2] (CTG) reading. At these reviews, clinicians indicated the need for further assessments, rather than intervention, in the expectation that the labour would progress normally or the CTG would improve and a vaginal birth would be achieved. In some cases, these multiple reviews accrued delays in decision making and prevented timely escalation of a mother's care.
- In some investigations the lack of consideration of a change of risk meant that the mother gave birth in a maternity setting with insufficient monitoring or without the ability of clinical staff to quickly intervene if required.

Further detail on this theme will be provided in an HSIB national learning report later in the year.

2 Safety of intrapartum care

HSIB investigations observed variance in the quality and comprehensiveness of advice given to mothers experiencing the initial signs or indications of labour and contacting a maternity unit. In some cases, assumptions were made that the mother was fully aware of her pathway of care and therefore a full assessment of her risk factors was not carried out.

Mothers who were assessed as being at high risk predominantly received appropriate care. For these mothers, there was usually good anticipation of changes in risk factors to ensure the provision of safe care. Investigations found that where a low risk admission categorisation was assigned there could be delayed consideration of alternative care pathways when indicated by changes in the mother's or baby's condition.

Some mothers made multiple contacts with maternity triage services; they frequently interacted with different clinicians each time. Initial documentation was often not adequate to ensure that subsequent clinicians were aware of all the previous information. This hampered clinicians' decision making, leading them to focus on the issue presented in isolation and not appreciate the cumulative nature of the concerns.

A significant number of investigations found emphasis on advising mothers to remain at home, and mothers not being invited into the clinical setting in what was perceived as 'early labour', without full assessment of the clinical picture.

An example from an HSIB maternity investigation report:

> 'A mother contacted the maternity triage line at a hospital, as advised, when she felt the onset of labour contractions. She was asked to describe her labour contractions including the frequency, and the movements of the baby were discussed on several occasions. She described that she was unable to feel her baby moving as her tummy was hard. Latent phase [3] of labour advice was given. She was advised to remain at home until the contractions were four every 10 minutes lasting for 40-50 seconds. The mother called the maternity triage line for a second time six hours later when her contractions were every three minutes and she mentioned she had not felt her baby move for some time. She was advised to attend and on listening for the baby's heartbeat the staff were unable to locate it. A further assessment made using an ultrasound confirmed the baby had no heartbeat and had died.'

For some mothers, delaying their clinical attendance based on a telephone triage process prevented them from receiving the care and assessment they needed to support safe management during labour and reduce the risk to their baby. From a thematic review of investigations, this appeared particularly true for mothers known to:

- be carrying group B streptococcus [4]
- have a baby who is small for gestational age
- have a history of lack of fetal movements.

In all these situations, early clinical attendance upon signs of labour is important for appropriate care and intervention. Babies who are at increased risk of complications during labour need to be assessed when the mother begins strong contractions, because the stresses of labour on the baby begin when strong contractions start, not when the cervix has reached a certain dilatation.

HSIB investigations observed that some maternity units appeared to place significant weight on cervical dilatation of greater than 4cm when deciding when to admit a mother to a labour ward: ‘the 4cm rule’. Clinical guideline CG190 (National Institute for Health and Care Excellence, 2017) states that the first stage of labour is established when there are ‘regular painful contractions and progressive cervical dilatation from 4cm’. While it may be reasonable to use these criteria for admission to a labour ward for healthy mothers with low risk pregnancies, investigations identified cases where earlier admission to a labour ward would have benefited the mother and baby.

In other cases, mothers were sent home to await the establishment of labour after strong pain relief. Some mothers received opioid**5** pain relief when attending for assessment in the initial stages of labour and close monitoring of mother and baby after taking pain relief of this strength did not take place. Once back home, mothers may not have known when to come back to hospital if asked to return ‘when labour is established’ as they thought they were in labour already. In these situations, mothers returned to hospital in advanced labour and the opportunity to identify and intervene for early signs of the baby showing signs of distress may have been missed. In some cases, this prevented the mother from having the one-to-one care and monitoring during labour that is expected.

HSIB has launched a national investigation into ‘Delays to intrapartum intervention once fetal compromise is suspected’ to explore the systemic factors associated with these delays and identify national safety recommendations in this area. The investigation is expected to publish the report in 2021.

3 Escalation

Escalation – where a clinician calls for support from a more experienced colleague – is a regular occurrence during a mother’s admission and labour. HSIB investigations observed maternity units where there are rigid processes for escalation; requests for support move stepwise through a hierarchy of seniority, instead of empowering the clinician to seek the medical support directly. In some cases, this led to a delay in accessing the appropriate expertise. Even when escalation occurred, the response from a more senior clinician was not always supportive or clear, leaving the staff not knowing what to do next. Investigations

frequently observed that if a trigger for escalation had already been met and escalation advice was unclear or did not resolve the issue, staff were unclear at what point further escalation was required.

Staff told HSIB that a clinician's experience of these interactions influences how they respond when presented with a similar situation again. This can cause individuals and teams to develop workarounds where they consider colleagues may not provide the support and advice they need or lead to a delay in escalation.

The following extracts are from HSIB maternity investigation reports:

> 'The midwife caring for the mother identified changes in the CTG trace. The midwife asked a doctor who was nearby to review the mother, which they did. Later the midwife was asked to speak to the labour ward coordinator who wanted to know why the midwife did not inform them first rather than going straight to the doctor. On the next occasion the midwife was concerned about the CTG trace she requested a review by the coordinator, who then requested a doctor to review the mother. This created a five-minute delay and the CTG has deteriorated further by the time the doctor arrived.'
>
> 'A mother required an immediate medical review while the team were in handover. The investigation was informed that staff had been told not to interrupt the handover and when they had done so on a previous occasion they were shouted at in front of the medical team. There were no other doctors available and they decided to wait for handover to be completed. This delayed the review by 30 minutes, when the medical review took place it was seen that the concern had been present for some time and the staff member was questioned as to why they didn't ask for a review sooner.'

The practice of seeking the opinion of a second clinician is often termed a 'fresh eyes' review and is intended to support clinicians with decision making and enable early escalation. Investigations observed that the approaches taken to implement these reviews does not always provide the intended outcome. In some investigations these 'fresh eyes' reviews considered the CTG trace in isolation, with the mother's overall progress not being considered. Investigations noted that reviews by colleagues can be subject to 'confirmation bias'. This is a situation described in human factors and psychology literature where people tend to favour information that supports previously conceived ideas and preferentially reject contradicting information.

Extract from an HSIB maternity investigation:

> ‘Abnormalities on a CTG were not identified and the overall CTG was categorised as normal. At the next CTG review a ‘fresh eyes’ review was requested: “Could you do a fresh eyes, all is looking normal”. Having been primed that the previous CTG was normal the staff member did not see the ongoing abnormalities and continued to categorise the CTG as normal.’

HSIB observed escalation problems particularly with respect to fetal heart monitoring in a large number of investigations. Safety risks associated with fetal heart monitoring will be the focus of a forthcoming national investigation.

4 Handovers

Quality of handover of care continues to be a finding in a number of HSIB national and maternity investigations. These handovers can be between individuals at shift change, between different groups of staff, during escalation of a patient’s care or between different clinical areas at transfer of care.

HSIB investigations identified occurrences where important information was lost at handovers. Even when trusts had good communication support tools to support handovers, these were sometimes not used effectively to ensure good information transfer.

There is a particular problem during midwifery or medical shift changes when clinicians are involved in the handover process. Often clinicians are discouraged from interrupting these formal handovers to ensure that all the necessary information is transferred. However, investigations found that reluctance to interrupt handover may result in support and intervention being delayed. This is an example where changes made to improve care have resulted in unintended consequences. The importance of the provision of adequate time and resource to carry out safe handover has been noted in the HSIB national investigation **‘Detection of retained vaginal swabs and tampons following childbirth’** (Healthcare Safety Investigation Branch, 2019).

Further detail on this theme will be provided in an HSIB national learning report later this year

5 Larger babies

Babies that are significantly larger than average are at increased risk of a birth injury, brain damage or, very rarely, death, because their shoulders get stuck during birth (National Institute for Health and Care Excellence, 2019). Investigations found that risks associated with the birth of larger babies were often not discussed with mothers, leaving them unable to make informed choices about the mode of birth for their baby.

Multi-professional training for emergencies during childbirth is provided to staff to manage these situations. Investigations observed that although this training supports staff to deal with the emergency, it may not provide adequate understanding of how to anticipate these events or how to prepare for them.

Investigations found that the requirement for a neonatal team [6] to be present at the birth of a large baby was not always recognised. The request for support was sometimes made after the baby was born and identified as being seriously ill rather than having the team present at the time of birth. HSIB identified cases where better preparedness for an anticipated obstetric (childbirth-related) emergency may have led to a better outcome for mother and baby.

Further detail on this theme will be provided in an HSIB national learning report later this year.

6 Neonatal collapse alongside skin-to-skin contact

The bonding of mother and baby immediately following childbirth is recognised as having beneficial effects on the health and wellbeing of mothers and their babies. Skin-to-skin contact is the practice of placing a newborn baby directly on a mother’s chest immediately after birth, often until their first feed. This assists in the bonding process and is recommended in the Unicef ‘Guide to the UK Baby Friendly Initiative standards’ (Unicef, 2017). The period immediately following childbirth is a very busy time with staff required to complete multiple simultaneous tasks including caring for the mother, who is often exhausted from the birth and may have received sedative painkillers. Investigations observed that midwives can be focused on looking after the mother and carrying out all the documentation required following birth and may get distracted from observing the baby.

A baby who is born apparently well, with good Apgar scores [7], can be safely laid skin-to-skin with the mother but still requires close observation in the first minutes after birth. Investigations identified situations where the mother was not physically able to see or reposition the baby due to her exhaustion or sedation. Investigations also noted that subtle changes to skin colour and breathing were not immediately noticed as babies were often covered to maintain their temperature. Some investigations identified that the baby’s positioning was not optimal, and this

led to the baby's airway becoming obstructed. The first sign of an issue may be identified when the baby begins to make a grunting noise, and unless urgent action is taken to reposition the baby, it may lead to significant harm.

Sadly, in these circumstances, investigations found a small number of babies initially born well sustained a brain injury or died following deterioration in their condition in the initial period after birth. Working with HSIB, the Unicef UK Baby Friendly Initiative maternity policy statement on safety during skin-to-skin contact has been updated. The changes made include more information on maternal position, ensuring ongoing thorough monitoring of the mother and baby and listening carefully to any concerns raised by the parents about their baby's condition.

Further detail on this theme will be provided in an HSIB national learning report later this year.

7 Group B streptococcus

Group B streptococcus (GBS) is a naturally occurring bacterium, often found in the mother's vagina, which can be dangerous for babies during labour and immediately after birth. The mothers carry this bacterium in the birth canal without any problem to themselves. Giving antibiotics to the mother during labour reduces the incidence of GBS infection passing on to the baby (National Institute for Health and Care Excellence, 2012).

There are no UK randomised clinical research trials assessing the efficacy of screening programmes for GBS. Internationally, the use of national screening programmes is variable. The UK National Screening Committee currently does not recommend routine screening for GBS in pregnancy. A large UK multicentre randomised study (GBS3) will start in 2020 to evaluate the impact of screening mothers during pregnancy or testing for the presence of GBS at the onset of labour.

The Royal College of Obstetricians and Gynaecologists (RCOG) has produced guidance on the treatment of mothers who are found to be carrying GBS (Royal College of Obstetricians and Gynaecologists, 2017). HSIB investigations found that mothers are not always provided with all the information recommended by RCOG in relation to GBS. Investigations found that in some cases this limited their ability to make decisions relating to the use of antibiotics during labour and their timely attendance to the hospital.

As in theme two (safety of intrapartum care), investigations observed maternity triage services encouraging mothers to stay at home for as long as possible. In some cases, this was due to information not being shared between clinicians, the right questions not being asked by the call receiver or problems with the documentation of a mother's GBS status. RCOG guidance suggests that mothers identified as carrying GBS should be seen earlier to allow antibiotic therapy to be given.

In addition, investigations found problems where positive tests for GBS were not communicated to the mother or noted clearly in the case records. As a result, the recommended care and antibiotic treatment in labour was not given. Also, the identification and escalation of care for babies who show signs of GBS infection after birth was missed. This has resulted in severe brain injury and death for some of the affected babies.

Further detail on this theme will be provided in an HSIB national learning report in the next few months.

8 Cultural considerations

The 2018 report by MBRRACE-UK (Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries across the UK) highlighted ‘a five-fold difference in maternal mortality rates amongst women from Black ethnic backgrounds and an almost two-fold difference amongst women from Asian ethnic backgrounds compared to white women’ (MBRRACE-UK, 2018). The impact of culture, ethnicity and language of parents needs to be discussed and considered during the antenatal risk assessment process, during initial assessment and during follow up. HSIB investigations found a disproportionate number of misunderstandings and miscommunications between staff and parents from black, asian, minority and ethnic communities. This can lead to the mother receiving inappropriate care during her pregnancy and influence the choices she makes, sometimes with serious or catastrophic effects on mother and baby.

In some cases where parents were of non-English speaking background these misunderstandings may have been due to language barrier. Investigations found that although translation services are available, they may not be available or utilised by staff at the relevant time. Investigations also noted that family members or staff who speak the relevant language were used as interpreters, which may have resulted in some misunderstandings. There is often an assumption that if the mother can speak ‘good English’ she understands all the aspects of the discussion regarding her care. This can lead to a mismatch between what the mother has been told and what she understands.

Cultural considerations may not be purely down to language differences; women from different backgrounds may have different expectations about what they are required to do and what options are available to them. They may not know the support available or how to access it. This can prevent them from, for example, requesting pain relief and making choices that support the safe care of themselves and their babies. Investigations found that some mothers did not feel they could challenge clinicians or ask questions and assumed that everything being done was correct.

Extracts from HSIB maternity investigations:

> ‘A mother laboured quietly in the antenatal ward as she believed she should not make any noise, when she was checked upon by the midwife several hours later, she was in established labour and in significant distress. She was unaware that she needed to inform the staff. This prevented adequate monitoring of the baby and the mother receiving pain relief or care in the appropriate environment.’
>
> ‘A mother was assessed as low risk and planned to give birth in the midwifery led birthing unit (MLU). English was not the mother and father’s first language but as they seemed able to understand most of the conversation, they were considered not to require a translator at the antenatal appointments. They were aware of the assessment that the mother could give birth in the MLU, however they didn’t understand what this meant and were not given the opportunity to visit the environment during the mother’s pregnancy. On arrival to the MLU they were shown into a room and confused that no bed was there. They questioned why there was no bed and when they could expect to see a doctor. This created considerable distress for the mother and impacted on her experience of birth.’

Further detail on this theme will be provided in an HSIB national learning report later this year.

National learning reports 2020/21

HSIB will publish a series of reports on the above eight themes in 2020/21; these themes are not exclusive of each other. As the HSIB maternity programme progresses and more information becomes available, HSIB will use this data to inform future national investigations and national learning reports.

7 References

Healthcare Safety Investigation Branch. (2019) Detection of retained vaginal swabs and tampons following childbirth [Online]. Available at: **https://www.hsib.org.uk/investigations-cases/retained-vaginal-swabs-and-tampons/final-report/** [Accessed 25 January 2020].

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Unicef. (2017) Guide to the Unicef UK Baby Friendly Initiative standards [Online]. Available at: **https://www.unicef.org.uk/babyfriendly/wp-content/uploads/sites/2/2014/02/Guide-to-the-Unicef-UK-Baby-Friendly-Initiative-Standards.pdf** [Accessed 25 January 2019].

Endnotes

[1] Fundal height is the measurement from the mother's pubic bone to the top of the uterus.

[2] CTG is electrical monitoring of the baby's heartbeat and mother's uterine contractions, usually by a sensor placed on the mother's abdomen.

[3] The latent phase of labour is the start of labour, with painful contractions and with cervical dilatation less than 4cm. It may last several hours before contractions become frequent and regular.

[4] Group B streptococcus is a naturally occurring vaginal bacterium which can be dangerous for babies during labour and immediately after birth.

[5] Opioids are strong painkillers that produce similar effects to morphine.

[6] A small team of clinicians with specific skills in resuscitating and caring for unwell newborn babies

[7] Apgar scores are used to assess a baby's wellbeing immediately after birth and at 5 and 10 minutes after delivery. Components of the score are skin colour, response, heart rate, breathing and muscle tone.

Providing feedback and comment reports

We welcome feedback on our investigation reports. Please complete our online feedback form or email enquiries@hssib.org.uk.

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

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