Sandwell and West Birmingham Hospitals NHS
NHS Trust

Report of an external review of five Maternal Deaths

August 2019

1. INTRODUCTION

1.1. Since 2017, five women have sadly died who were cared for by the Trust and were defined as a maternal death.

1.2. A maternal death is defined as any woman who dies during pregnancy or within the first year after the birth. The death does not have to be directly related to the pregnancy.

1.3. Four of the women died whilst pregnant or during childbirth and one within a month after giving birth.

1.4. Within the Trust, deaths are reviewed, either through a mortality review process or through the serious incident process. Both processes aim to identify good care and care that falls below standard with the aim to learn and improve care for future patients.

1.5. Following the internal reviews, it was decided that the Trust would request external assistance to ensure that there were no missed opportunities for learning.

2. SCOPE OF REVIEW

2.1. The full terms of reference for the review can be found at **Appendix A.** The main remit being to identify opportunities for the Trust to improve on the care provided, handling of similar situations and our responsibilities for the bereaved families.

2.2. The review seeks to understand:

- The calibre of the Trusts investigations
- The care of each deceased mother
- The expected care pathways
- Any observed pathway deviations
- An estimate of impact of any deviations
- Whether any impact was causative

2.3. To enable the review to be truly independent the Royal College of Obstetricians and Gynaecologists was approached to find an Obstetrician who would be willing to undertake the review.

2.4. NHS Improvement agreed to provide a midwife to assist with the review and Northampton General Hospital was approached through the Trusts Deputy Director of Governance to see if they had an obstetric anaesthetist who would be part of the review.

2.5. The reviewers were asked to assess the information available against four questions;

- Was the care pathway in accordance with local and national guidelines?

- Did the care pathway meet best understood practice?

- Were there any deviations from the care pathway and, in the event of a deviation, was the deviation a contributory factor to the eventual outcome?

- Were areas for quality improvement identified during the Trust investigation and was a plan of action made to address any quality improvement issues?

2.6. To enable the reviewers to answer these questions, copies of local guidelines used, healthcare records, post mortem reports and the investigation reports of all five women were made available.

3. FINDINGS

3.1. The report findings were discussed in a Maternity workshop in July 2019 and the outputs from this are summarised below.

Question/Initials	A	D	E	C	B
Was the care pathway in accordance with local and national guidelines?	Yes	Yes	Yes	Yes	No
Did the care pathway meet best understood practice?	Yes	Yes	No	No	No
Were there any deviations from the care pathway and, in the event of a deviation, was the deviation a contributory factor to the eventual outcome?	No	No	No	Yes - patient preference Yes	Yes – MOH Possibly
Were areas for quality improvement identified during the Trust investigation and was a plan of action made to address any quality improvement issues?	No	No	No	No	Yes

3.2. The matrix shows that two of the five cases may give rise to lessons and possible quality improvements.

3.3. The records for patient C show that her care transferred late in pregnancy and, accepting that she had views on how she wanted her pregnancy to carry on under her terms, the question remains whether we could have done anything differently.

3.4. With patient B, there are deviations from pathways most of which were not direct contributory factors.

3.5. Within the external review reports, and identified by the workshop participants, some notable practices were identified.

3.6. Cardiology responded very quickly when called and undertook imaging, anaesthetic support in the antenatal period was noted as good. Multidisciplinary working was evidenced, as was good support for families.

3.7. There was evidence of excellent follow up from the Community midwives as well as good continuity of carer with respect to obstetric input. Where necessary, there was evidence of use of an interpreter.

3.8. Senior support for staff was given in some of the incidents, with evidence that this is ongoing. There were elements of care in all five women, which was commended by the external reviewers.

3.9. The external reports and workshop identified some areas for improvement, themes and lessons learnt:

3.9.1. The woman's journey through the maternity service is complicated by multiple attendances on consecutive days rather than consolidation of care affording a single attendance with a one stop shop approach.

3.9.2. The Trust guidelines for managing diabetes in pregnancy, with clinically indicated mitigation, deviates from the NICE guidance.

3.9.3. There was a lack of real time coagulopathy results to support decision making within an emergency situation. This could be rectified with point of care testing.

3.9.4. There was a variation between findings and actions arising from SI reports.

3.9.5. There was a lack of a formalised process in monitoring and managing late bookings against expected booking process.

4. RECOMMENDATIONS

By **December 2019** the maternity department will have:

4.1. The maternity department will provide an options appraisal for the use of point of care testing more especially ROTEM which is point of care testing machines which allow access to rapid coagulation results and guide blood product management. Early data elsewhere suggests that the use of these machines has led to a decrease in administering blood products for PPH (post-partum haemorrhage).

The department will utilise a four stage approach with regards to PPH:

- Risk assessment
- Early identification by measuring blood loss
- Multidisciplinary team working (training – explicit instigation)
- Introduction of ROTEM

Whilst the department does the first three this needs to be consolidated with the addition of ROTEM as a four stage approach which this is recognised in the UK and internationally as an exemplar. Plus review the policy for instigation of the MOH is enacted in a timely manner and includes senior decision makers at the point of care.

4.2. Review of Trust guideline of Diabetes in pregnancy benchmarked against the NICE guidance, including explicit reasoning if there are deviations at local level from what NICE recommends.

4.3. All of the SI reports in maternity over the last 2 years will be reviewed in relation to findings and actions and to ensure quality improvements can be mapped. This will then be relayed to teams via QIHD, risk and governance newsletter and MDT training.

4.4. An algorithm will be formulated and shared with the teams to ensure consistency in booking for late bookers.

By **March 2020**

4.5. For high-risk women an early antenatal appointment will map out the patients journey, identifying all relevant risk factors and ensuring the right specialist care is provided without duplicating attendances or unnecessary appointments.

5. CONCLUSIONS

5.1. The external reviewers saw notable practice in all five cases and all provided opportunities to learn and improve the care and treatment provided to women booked for the Trust's Maternity service.

5.2. The recommendations and learning will be reviewed by the service to address areas for improvement over coming months.

5.3. The main similarities within the cases relate to two, in which there is unclear timings in activating the MOH, documentation of this and recognising DIC with a diagnosis of Pulmonary Embolus (PE) /Amniotic Fluid Embolus (AFE).

5.4. The service needs to review the MOH pathway, ensuring simulation and team training using these cases to take account of the unexpected DIC in a suspected diagnosis of PE against real diagnosis of AFE.

5.5. It is recognised that access to a cardiologist and echocardiogram is excellent practice to assist in care and treatment in these complex emergencies however, staff need also to read the signs and symptoms emerging in each case and review likely scenarios for treatment options.

5.6. The incidence of Amniotic Fluid Embolism in the UK (2017 data) is 1.7 per 100,000 maternities. Maternity teams are aware of the pathways of care and practice for such occurrences on skills drills.

5.7. Despite the Trust having two inpatient cases recently, this remains a very rare event.

5.8. The external report from the Consultant Obstetrician identifies practices which they themselves would not carry out, such as an assisted rupture of membranes in a multip undergoing induction of labour at 2cm dilated.

5.9. The Trust has accepted the reviews of the external reviewers but also recognises that there will be clinical variations in practices, which are not wrong, just professional preferences and do not go against best practice guidance.

Recommendation	**Professional Challenge**	**Rationale**
An ARM(Artificial rupture of membranes) performed was not indicated at 2cm cervical dilatation as the decision for delivery was based on the abnormal CTG trace	ARM in a multiparous woman, who has achieved vaginal delivery prior, can expedite delivery without the risks associated with major abdominal surgery	To expedite delivery in a multiparous woman who had previously achieved vaginal birth.
External Obstetric opinion: annexIt appeared that both amniotic fluid embolus and pulmonary embolus were considered by the clinicians who favoured a pulmonary embolus as the probable diagnosis based on echocardiogram findings The diagnosis of a pulmonary embolus appears to have been based solely on the echocardiogram findings rather than in the context of the labour process. Based on this erroneous diagnosis, thrombolysis treatment was given with subsequent worsening of haemorrhage.	External Anaesthetic opinion: It is commendable that there is rapid access to consultant cardiology support and advice as well as echocardiography. There is evidence of discussion about the likely diagnosis and due consideration of the risks and benefits of thrombolysis in the event that there was or was not a pulmonary embolism. This decision making is clear and I believe to be correct.	The clinicians utilised expert knowledge and opinion to treat the expert's opinion on causation.

Recommendation	Professional Challenge	Rationale
Continuity of care pathway (CoC)	The National timeframe for the introduction of and 20% of women being booked onto a CoC pathway was for March 2019, this falls outside the timeframe of care.	This falls outside the scope of the review and introduction of such pathways. The Trust is actively involved in the implementation of the National requirements on CoC, in conjunction with the Black Country Local Maternity System, as set out in Better Birth's (2016)
The Trust should review the Fetal Monitoring guideline to ensure that the fresh eyes element of the guideline is in line with the Saving Babies Lives Care bundle	The Trust guideline is compliant against Saving Babies Lives Care Bundle version 1 (2016): *All staff who care for women in labour are required to undertake an annual training and competency assessment on cardiotocograph (CTG) interpretation and use of auscultation. No member of staff should care for women in a birth setting without evidence of training and competence within the last year.* ***2.*** *Buddy system in place for review of cardiotocograph (CTG) interpretation, with a protocol for escalation if concerns are raised. All staff to be trained in the review system and escalation protocol.*	This falls outside the scope of the review and are compliant against Saving Babies Lives Care Bundle version 1 (2016). The Trust is actively involved in the implementation of the requirements , in conjunction with the Black Country Local Maternity System, as set out in Saving Babies Lives Care Bundle version 2 (2019)

5.10. What is apparent is that these women were high risk for varying reasons and co-morbidities making their care pathway more complex, identifying that a multidisciplinary approach is required for such women to have clear oversight.

Appendix A

SANDWELL AND WEST BIRMINGHAM NHS TRUST

Final terms of reference for Learning Enquiry into maternal deaths

1. Context

1.1 The Trust has had no external alerts into the quality of maternity services in 2018-19. Continued discussions have taken place with 'Dr Foster' over puerperal sepsis mortality and that has previously been explored through the Learning from Deaths committee, and responses issued via the Medical Director.

1.2 Five deaths have taken place in the period August 2017 to January 2019. Two deaths continue to be investigated and are within the SI review window set nationally. Post mortems into the other three deaths have reported, without raising elevated concern on poor practice to either the coroner or the Trust. All deaths and investigations are shared contemporaneously with our lead CCG commissioners, NHS Improvement and NHS England.

2. **Review purpose and scope**

2.1 The explicit intention of the review is to search for similarities, and where appropriate any causative or contributory similarities, between the deaths concerned. The purpose is to **identify learning** from these deaths to improve future care. This includes not merely preventative actions, but how risk and unexpected deaths are handled by the Trust, and addressed with the bereaved. In so far as families wish to be involved in the review, we will ensure that they are.

2.2 The review will see to understand:

i. The calibre of investigations already undertaken into each death
ii. The care of each deceased mother
iii. The expected care pathway of each deceased mother
iv. Any deviations from that care pathway which can be observed
v. The estimated impact of those deviations
vi. Whether that impact was contributory to death in any way

2.3 Having completed this study the enquiry is asked to advise the Trust on:

- Whether the expected care pathways were sufficiently collectively understood
- Whether the expected care pathways meet current best understood practice
- Whether any of the deaths give rise to concern about other deaths or harms within this service which might merit investigation or study
- Whether there are areas for quality improvement arising from the enquiry for which the Trust as yet does not have a convincing plan of action

2.4 In the course of undertaking the enquiry, those involved will have access to any information or employed individuals of their choosing to complete the purpose identified. Arising from this, the Trust would welcome observations and any recommendations on the organisation's local maternity

or corporate and central approach to investigation, safety or learning. Any identified, but omitted, best practice should be highlighted.

3. Learning from the outcome of the enquiry

3.1 The enquiry report will be shared within the Trust, with families affected, and with commissioning and regulatory bodies. The Trust will consider the outcome in its Quality and Safety Committee, and discuss the findings with the public Board.

3.2 In line with our extant maternity governance process the lessons learned will be shared within our QIHDs, and applied using other tools within the Board's approved welearn toolkit for 2019-20.

3.3 We would expect, arising from the report, to revise the information by which we monitor service safety, such that we can consider any future maternal deaths in light of the outcome of this enquiry. It would be of value for the drafting of the report to bear in mind this intention, and make relevant recommendations.

4. Conduct of the enquiry

4.1 The enquiry team will work alongside the deputy director of governance, who will facilitate their work. The lead Trust director of purposes of the enquiry shall be the Chief Nurse. The report, through her, will be discussed with the maternity safety meeting attended by the medical director. The report will also be provided in draft to the Board's quality and safety committee chair, and the Chief Executive.

4.2 We will seek to commence any desk top work before the end of April and complete the work by the end of June. We would expect to review the outcomes in our August Board meeting.

4.3 Should, during the course of the enquiry, the reviewers wish to amend or amplify the terms of reference, then this will be discussed in the first instance with the Chief Nurse and Chief Executive. Such a request will be agreed to unless there is a prevailing and evident alternative approach in train.

4.4. Our enquiry team, sourced externally and with advice from NHS Improvements, includes a senior midwife, and a senior obstetrician, with at least one other member. One member of the team is deliberately from outside the West Midlands.

April 2019