Agenda Item	**20/21/144**

MEETING	**Quality Committee**
PAPER/REPORT TITLE:	**Lessons Learnt from Mortality**
DATE OF MEETING:	Monday, 23 November 2020
ACTION REQUIRED	**Assurance**
EXECUTIVE DIRECTOR:	Andrew Loughney, Medical Director
AUTHOR(S):	Devender Roberts, Deputy Medical Director, Allan Hawksey, Risk and Patient Safety Manager, Louise Robertson, Consultant Obstetrician, Rebecca Kettle, Consultant Neonatologist
STRATEGIC OBJECTIVES:	***Which Objective(s)?*** **1.** To develop a well led, capable, motivated and entrepreneurial ***workforce*** ☒ **2.** To be ambitious and ***efficient*** and make the best use of available resource ☐ **3.** To deliver ***safe*** services ☒ **4.** To participate in high quality research and to deliver the most ***effective*** Outcomes ☒ **5.** To deliver the best possible ***experience*** for patients and staff ☒
LINK TO BOARD ASSURANCE FRAMEWORK (BAF):	***Which condition(s)?*** ***1.*** *Staff are not engaged, motivated or effective in delivering the vision, values and aims of the Trust……* ☒ ***2.*** *Potential risk of harm to patients and damage to Trust's reputation as a result of failure to have sufficient numbers of clinical staff with the capability and capacity to deliver the best care. ……* ☒ ***3.*** *The Trust is not financially sustainable beyond the current financial year……* ☐ ***4.*** *Failure to deliver the annual financial plan ……* ☐ ***5.*** *Location, size, layout and accessibility of current services do not provide for sustainable integrated care or quality service provision ……* ☒ ***6.*** *Ineffective understanding and learning following significant events……* ☒ **7.** *Inability to achieve and maintain regulatory compliance, performance and assurance…… ……* ☒ ***8.*** *Failure to deliver an integrated EPR against agreed Board plan (Dec 2016) ……* ☐
CQC DOMAIN	***Which Domain?*** ***SAFE-*** *People are protected from abuse and harm* ☒ ***EFFECTIVE -*** *people's care, treatment and support achieves good outcomes, promotes a good quality of life and is based on the best available evidence.* ☒ ***CARING -*** *the service(s) involves and treats people with compassion, kindness, dignity and respect.* ☒ ***RESPONSIVE –*** *the services meet people's needs.* ☒ ***WELL-LED -*** *the leadership, management and governance of the organisation assures the delivery of high-quality and person-centred care, supports learning and innovation, and promotes an open and fair culture.* ☒ ***ALL DOMAINS*** ☒

LINK TO TRUST STRATEGY, PLAN AND EXTERNAL REQUIREMENT	**1.** Trust Constitution ☒ **2.** Operational Plan ☒ **3.** NHS Compliance ☒	**4.** NHS Constitution ☒ **5.** Equality and Diversity ☒ ***6.*** Other: **Click here to enter text.**
FREEDOM OF INFORMATION (FOIA):	1. This report will be published in line with the Trust's Publication Scheme, subject to redactions approved by the Board, within 3 weeks of the meeting	
RECOMMENDATION: ***(eg: The Board/Committee is asked to:-….)***	The Committee members are asked to review the contents of the paper and take assurance that there is adequate process in place for learning from deaths.	
PREVIOUSLY CONSIDERED BY:	**Committee name**	Not Applicable
	Date of meeting	

Executive Summary

This is the 2020/21 Quarter 2 (Q2) learning from deaths report for the Trust.
There are processes in place for review in all three types of death at the Trust. Unlike other Trusts, **every** death in the Trust, including expected adult deaths, are reviewed.

Key areas the report addresses:

- All adult deaths, stillbirths & neonatal deaths have a mortality review conducted.
- No in-hospital or LeDeR related adult deaths occurred in Q2 of 2020/21.
- The Q2 stillbirth rate of 4.1/1000 (3.9/1000 excluding fetal abnormalities) is lower than reported in Q1.
- No cases were identified where care was adversely affected by COVID 19 related restrictions and/or amended guidance or due to mothers delaying accessing maternity healthcare
- The Neonatal mortality rate has spiked in Q2 but this is due to the high number of babies with cardiac abnormalities and in-utero transfers in this quarter.
- The overall standard of care in stillbirth and neonatal deaths was good.
- The Trust demonstrates a high level of learning from mortality reviews. Themes are identified and action plans in place to address issues that arise.

Learning from deaths 2020/21

Strategic context

Learning from the care provided to patients who die is a key part of clinical governance and quality improvement work (CQC 2016). In February 2017 the CQC set out new requirements for the investigation of deaths to run alongside the local existing processes. The National Quality Board has subsequently provided further guidance and recommendations for learning from deaths entitled 'National Guidance for Learning from Deaths – A Framework for NHS Trusts and NHS Foundation Trusts on Identifying, Reporting, Investigating and Learning from Deaths in Care'.

A quarterly Adult and Perinatal Mortality report is presented to the Quality Committee as a core requirement of the National Guidance for Learning from Deaths. This report is the 20/21 Q2 Board

assurance report regarding compliance with review process and learning from deaths. **It is set within the context of the Coronavirus Covid-19 pandemic.**

Local context

The number of adult deaths in the Trust is low. Deaths are usually expected, end of life care related. Due to the low level of mortality numbers encountered and the complexity of the patients cared for by the Trust, adult mortality data is presented as pure data, not standardised mortality such as SHMI.

The use of pure data and not standardised mortality rates has been previously agreed with the CCG as the Trust's approach to monitoring adult mortality rates.
Stillbirths and neonatal mortality rates are reported in absolute numbers and /1000 births. Stillbirths are reported as overall rate and rate excluding terminations. Neonatal deaths are reported as overall rate and rate for in-booked babies.

Table 1. Overall mortality rate in the Trust 2020/21

	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	TOTAL
ADULT Obstetrics	0	0	0	0	0	0							0
Gynaecology (Oncology)	0	0	0	0	1	1							0
Gynaecology (non-Oncology)	0	0	0	0	0	0							0
STILLBIRTHS Total stillbirths	1	5	4	2	3	1							16
Stillbirths (excl.terminations)	1	5	4	2	2	1							15
Births	597	582	639	658	677	681							3829
Overall Rate per 1000 births	1.67	8.59	4.27	3.0	4.1	1.5							4.1
Rate (excluding TOP) per 1000	1.67	8.59	4.27	3.0	3.0	1.5							3.9
NEONATAL MORTALITY Total Mortality	3	0	4	9	3	9							7
Deliveries	597	582	639	658	677	681							3829
Mortality Rate per 1000 Deliveries	5.1	0	6.3	13.6	4.4	13.2							7.4
Mortality for LWH in-booked babies	1	0	3	6	1	3							4
Mortality rate per 1000 LWH in-	1.7	0	4.7	9.1	1.5	4.4							3.7

booked babies													

1. ADULT DEATHS:

The Trust's policy for analysis after an adult death relies upon the following activities:

- Gathering detailed intelligence on all individual instances of adult mortality in the Trust
- Identifying local issues arising from each of those events individually
- Exploring themes that may be emerging from groups of events

Adult deaths - Mortality reviews Q2		
	Maternity (Direct)	**Gynaecology**
No of Adult Deaths	0	2
No of Mortality Reviews completed	0	2
No of deaths requiring RCA's	0	0
No of deaths due to deficiencies in care	0	0
Mortality Themes	N/A	N/A
Progress v Smart Plans	N/A	N/A
Mortality Outcomes	N/A	N/A
Measures for ongoing scrutiny	N/A	N/A

No care issues were identified in the 2 end of life deaths in Q2.

Out of hospital adult deaths 2020/21

Out of hospital deaths in Maternity are considered as Community deaths and not allocated to the Trust. The Trust does however, review care provided in all these cases to determine any thematic points for learning.

GYNAECOLOGY

There were no out of hospital Gynaecological deaths in Q2.

MATERNITY

The maternal death of suspected suicide at 10 weeks reported in Q1 is currently being investigated by HM Coroner. The Trust has commenced a review but had not provided any care for this lady immediately prior to her death.

There were no reported out of hospital maternal deaths related to women who died within 12 months of delivering a baby at LWH in Q2.

LEARNING FROM ADULT DEATHS

Due to the low level of adult death within the Trust, this report seeks to gain triangulation from the work of the Safety and Effectiveness Senates in reducing the risk of mortality. This is shown in Appendix 1.

2. PERINATAL DEATHS

All Perinatal deaths in the Trust are subject to review using the Perinatal Mortality Review Tool. The tool grades care as shown in the table below.

Table 2: MBRRACE - UK Care Grading

Care Grade	Description
Grade A	No improvements in care identified
Grade B	Improvements in care identified that would not have changed the outcome
Grade C	Improvements in care identified that **may** have changed the outcome
Grade D	Improvements in care provided that **would** have changed the outcome

Any cases graded D are automatically reported as a Serious Incident and added to StEIS. A root cause analysis, (RCA), investigation is completed, and the family are informed of the findings.

Stillbirth reviews and Key Themes

Table 3. Grading of antenatal care for babies in Q2 2020-21

Grade	Care in antenatal period
A	**3**
B	**1**
C	**0**
D	**0**
UNK	**1**

There were no cases graded C or D in this quarter. There were no cases identified where care was adversely affected by COVID 19 related restrictions and/or amended guidance or due to mothers delaying accessing maternity healthcare in relation to COVID 19 changes – see Appendix 2.

Table 4. Details of the deaths for this period and consequent actions taken

Gestation	Cause of death	Issues	Actions
25 weeks	Fetal Vascular malperfusion	No issues identified	NA
25 weeks	SGA no placental pathology	No Issues identified	NA
26 weeks	Placental abruption	No 16 or 25 week CMW appointment. Ability to book follow up CMW appointments at the booking visit – not currently possible	Discuss with Deputy HOM ability to do this with new K2 system
36 weeks	Cord accident with associated fetal vascular mal-perfusion	No issues identified	NA
30 weeks	PM outstanding	To be reviewed	To be reviewed

Actions taken to address the findings for Q2

Deputy HOM has confirmed that booking follow up CMW appointments at booking will not be possible with the new K2 system at present due to the primary care appointment booking systems.

Progress on previous actions

- SOP for management of thrombocytosis has been completed
- Covid policies for growth scans have been reviewed and were compliant with national guidance.
- Criteria for midwife referral to Consultant led clinic will be reviewed with the implementation of the new K2 system
- A service evaluation to ensure the service is meeting the needs of non-English speaking women with particular reference to interpreter services and communication is currently paused due to Covid-19.
- The RFM guideline is being updated to a timeframe for CTG when reduced fetal movements are reported as an inpatient.
- NEST team leader is linking with other specialist midwifery teams to evaluate language barrier solutions and present these findings at Maternity Risk meeting in December 2020. This will tie in with the overall action plan for improving the perinatal journey of non-English speaking and other vulnerable women.

Neonatal reviews and key themes Q2

The data provided in Table 1. refers to LWH NICU in-hospital mortality before discharge.

There have been a higher than usual number of deaths in July (9) and September (9) giving an overall rate of 7.4/1000 compared to 3.9/1000 in Q1 (see Table 1). No clear themes have been identified on initial review. All deaths will be reviewed through the PMRT process however at this point it is not possible to comment further as not all deaths have been reviewed to date.

Out of hospital neonatal deaths Q2 2020/21

Some babies who are born and / or cared for in NICU are subsequently transferred to Alder Hey for ongoing management. If a baby dies after transfer to AH the case is reviewed through the AH mortality review process by the hospital mortality review group with neonatal input from the LWHNSFT. If a baby is transferred to hospice for end of life care the case is reviewed through the LWH PMRT process. Table 5. shows the detail of these babies.

Table 5: Mortality after discharge from NICU

	Apr 20	May 20	Jun 20	Jul 20	Aug 20	Sep 20
Alder Hey Children's Hospital	1 (non-LWH booked)	1 (non-LWH booked	1 (LWH booked)			1 (LWH booked)
Hospice				1 (LWH booked)	1 (non-LWH booked)	
Repatriation to booking hospital			1			
Home						

All deaths after transfer to Alder Hey in Q1 have been reviewed through AH HMRG (hospital mortality review group). All were prenatally known to have congenital cardiac anomalies. No specific neonatal issues were identified at AH mortality review.

In Q2, three babies died after transfer to a different care setting. One to Alder Hey with a prenatal diagnosis of congenital cardiac anomaly; two babies died after transfer to hospice for end of life care - One with severe hypoxic ischaemic encephalopathy and one baby born preterm with an inoperable cardiac anomaly.

Neonatal mortality is highly dependent on gestation at birth. See table 6 for mortality by gestation for all babies including the out of hospital deaths (n=24)

Table 6: All mortality by gestation Q2 20/21

	LWH booked mortality	Non-LWH booked mortality	All mortality
Extremely preterm (<28 weeks)	8	5	**13**
Very preterm (28-32 weeks)	1	2	**3**

Moderate preterm (32-37 weeks)	0	5 (including 1 unbooked)	**5**
Term (>37 weeks)	3	0	**3**

The highest mortality group are the extremely premature babies. Of the 8 deaths in the moderate preterm and term babies, six had congenital anomalies and two were due to hypoxic ischaemic encephalopathy.

Table 7 details the primary cause of death as stated on the death certificate. Overall for Q2 the highest group were congenital anomalies (9/24). One case this quarter was referred to the coroner and has been ruled as a natural cause of death with underlying congenital anomaly.

Table 7: All mortality by cause Q2 20/21

	LWH Booked	**In-utero transfers (non-LWH booked)**	**Ex-utero transfers (non-LWH booked)**	**Unbooked**	**Total**
Prematurity	5		2		**7**
Infection	2	1			**3**
Hypoxic ischaemic encephalopathy	1		1		**2**
Congenital abnormality	3	5		1	**9**
Respiratory					**0**
Cardiovascular		1			**1**
Abdominal / Renal	1				**1**
Neurological		1			**1**
Other					**0**

Number of reviews	
No. of Neonatal Deaths	21
No. of Mortality Reviews completed	10
No. of deaths were care issues may have or were likely to have affected the outcome (grade C/D)	
Antenatal	1 (D)
Neonatal	1 (C)
Care of the mother after death of baby	

Learning from Deaths

Of the 10 cases reviewed in Q2, five had neonatal care issues identified and five had antenatal care issues identified; there were 2 cases where care issues of the mother after the death of the baby were identified.

Neonatal care

Of the 5 cases with neonatal care issues identified 4 were graded B (care issues identified which would not have made a difference to the outcome), whilst through the detailed review process care issues have been identified and afford opportunities for learning and improvement, they have not impacted on the outcome for the babies.

Care issues identified which did not impact on the death of the baby included:

- Not achieving targets of initial management on admission
- Prolonged handling after admission in extreme preterm baby
- Multiple line insertions in a challenging baby, a necessary intervention however these were not fully documented and the parents found this experience particularly difficult – communication, documentation and support of the parents could have been improved.

- Multiple intubations for a baby on several occasions – care could have been improved with a better oversight and acknowledgement of the history and consideration of more experienced first intubator on the later occasions.
- Several hours of high peak pressures on the ventilator before consideration of optimising respiratory support with high frequency oscillation ventilation.
- Sub-optimal documentation – this was identified in several reviews but in different areas of documentation.

Actions proposed to address the issues above include:

- Working group to review of initial management of preterm babies on admission *(in development)*
- Include initial management and admissions procedures in Junior doctor induction 6 monthly with LOTW reminder *(induction session completed september 2020, LOTW pending)*
- Feedback to wider NICU team at clinical governance day regarding patient experience and importance of documentation *(November 2020)*
- LOTW for ventilation key points – for both medical and nursing staff *(pending)*
- LOTW for documentation *(w/c9/11/20)*

1 case was graded C (the care issue may have made a difference to the outcome) having identified that an extremely premature infant became hypothermic on NICU during the admission process. This will be looked into in more detail at a table top review to understand how this occurred and how to prevent similar issues in the future, however a review and optimisation of the initial management of preterm by a mutli-disciplinary working group is expected following an ongoing audit and feedback from the recent GIRFT review. A summary of the table-top findings and any actions will be included in the Q3 report.

Antenatal Care

Progress on action from Q1:

- A more detailed updated screening proforma for assessing risks for preterm labour has been introduced which specifically asks about types of cervical surgery and uterine anomaly. Referrals are made accordingly.
- The process for FU in the community will hopefully be improved by the K2 electronic patient record.
- LOTW on the use of partogram in the intrapartum management in preterm labour, initiation of MgS04 and IV antibiotics, and sending placental for histology.

Actions for findings from Q2:

- The neonatal case graded D for intrapartum care was an HSIB case. An SI investigation with full details of recommendations and actions has been completed. The HSIB report is currently awaited.
- The process for management of abnormal MSU including asymptomatic bacteriuria through ANC is in progress. An update will be provided in the next report.

Care after the death of the baby

For 2 families, we identified lack of Honeysuckle support in the first days after the death due to no cross cover for annual leave and delayed communication with a booking hospital regarding the death of the baby.

Action:

- Bereavement checklist to be reviewed and pathways of communication confirmed

Progress on actions from Q1

In Q1 mortality report we had identified concerns over femoral arterial lines, with 2 cases having been investigated as SIs. Both cases involved a known complication of an intensive care procedure, decision to insert and handover of key information were identified as issues along with subsequent escalation of perfusion concerns in a timely manner.

The recommendations following these reviews include:

- Reflective discussions and feedback to be given to staff involved
- The policy for arterial line insertion is being amended to include:
    - a requirement for 2 consultants to review the decision to insert these lines.
    - rewording to state that a line should be removed immediately that there is any concern about limb perfusion, even in the absence of pallor.
    - Amendment to clearly state contraindications of arterial line insertion
- Staff to be reminded to report incidents when they occur
- Consultants to be reminded of the requirements of Duty of Candour
- The ongoing audit of femoral line insertion will be completed and may identify other contraindications to insertion that will be reflected in the policy.
- Review of system for entering Clinical reviews in the Badger system.

Learning will be shared via senior nursing and MDT meetings and disseminated to the wider NICU team via the November clinical governance meeting.

Benchmarking

We continue to benchmark against NNAP (National neonatal audit programme) data for neonatal mortality, MBRRACE UK and internationally through the VON (Vermont Oxford Network) collaboration.

Following work done by the NWODN (North West neonatal operational delivery network) on preterm (24-31+6 weeks) mortality over the 3 year period July 2015- June 2018 we are working with the network to benchmark our mortality rates regionally and invited an external review looking specifically at the lower gestational ages in this time period. The external review included 10 randomly selected 24 week infants in the time period. The review has been presented to the department, key findings and themes identified at the review include:

1. Femoral arterial lines
2. Liberal use of sodium bicarbonate
3. Missed opportunities to palliate sooner
4. Tidal volumes to reduce ventilator induced lung injury

One case included in the review has been escalated to an SI based on findings of the external review, full report is pending.

A paper detailing the review (appendix 3) in more detail has been prepared by Dr Dewhurst, Neonatal Clinical Director, including the LWH response to the issues identified and an action plan generated to address the themes and will be presented to the quality committee.

3. Conclusion:

The Board is asked to note that:

- All adult deaths, stillbirths & neonatal deaths have a mortality review conducted.
- No in-hospital or LeDeR related adult deaths occurred in Q2 of 2020/21.
- The Q2 stillbirth rate of 4.1/1000 (3.9/1000 excluding fetal abnormalities) is lower than reported in Q1.
- No cases were identified where care was adversely affected by COVID 19 related restrictions and/or amended guidance or due to mothers delaying accessing maternity healthcare
- The Neonatal mortality rate has spiked in Q2 but this is due to the high number of babies with cardiac abnormalities and in-utero transfers in this quarter.
- The overall standard of care in stillbirth and neonatal deaths was good.
- The Trust demonstrates a high level of learning from mortality reviews. Themes are identified and action plans in place to address issues that arise.