Agenda Item	**21/22/46**

MEETING	**Quality Committee**
PAPER/REPORT TITLE:	**Learning from deaths, Q4 2020/21**
DATE OF MEETING:	Monday, 24 May 2021
ACTION REQUIRED	**Assurance**
EXECUTIVE DIRECTOR:	Lynn Greenhalgh, Medical Director
AUTHOR(S):	Andrew Drakeley, Acting Deputy Medical Director, Allan Hawksey, Risk and Patient Safety Manager, Louise Robertson, Consultant Obstetrician, Ai-Wei Tang, Consultant Obstetrician and 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 processes and progress against the requirements laid out by the National Quality Board	
PREVIOUSLY CONSIDERED BY:	**Committee name**	Not Applicable
	Date of meeting	

Executive Summary

This is the 2020/21 Quarter 4 (Q4) learning from deaths report for the Trust. There are processes in place for review in all three types of death at the Trust. Every death in the Trust, including expected adult deaths, is reviewed.

Key areas the report addresses:

- All adult deaths, stillbirths & neonatal deaths have a mortality review conducted.
- There was 1 death within gynaecology oncology and 1 mutual aid colorectal surgery case for Q4 (categorised as gynaecology (non-oncology)). Both cases were subject to 72-hour reviews and there were no immediate deficiencies in care identified. Both cases were subsequently declared as Serious Incidents by Liverpool University Foundation Trust.
- The Q4 stillbirth rate of 3.7/1000 (3.2/1000 excluding fetal abnormalites) was lower than Q3 (4.0 and 3.5/1000 respectively). The annual stillbirth rates were 3.9/1000 (3.4/1000 excluding fetal abnormalites).
- Q4 mortality rate for all LWH neonatal deaths is 6.4/1000 births
- Q4 mortality for LWH booked babies is 3.2 /1000 births
- Overall, 20/21 mortality rate for all LWH neonatal deaths is 6.2/1000 births
- Overall, 20/21 mortality for LWH booked babies is 3.2/1000 births
- 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 Q4 Quality Committee 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.

Data is presented for adults, maternity/perinatal and neonatal deaths:

1. Adult:

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

The report is part of the regular reporting schedule of the Trust to ensure that there is oversight and assurance monitoring of the mortality rates related to the clinical activity of the Trust.

The data contained in this report is pure data and is not standardised mortality data such as SHMI, due to the low level of mortality numbers encountered and the complexity of the patients cared for by the Trust.

The use of pure data and not standardised mortality rates has been previously agreed with the CCG as the Trusts approach to monitoring mortality rates.

Key findings:

- There was 1 death within gynaecology oncology and 1 within colorectal mutual aid for Q4 (categorised as gynaecology (non-oncology)). Both cases were subject to a 72-hour reviews and there were no immediate deficiencies in care identified. Both cases were subsequently declared as Serious Incidents by Liverpool University Foundation Trust.
- The Safety and Effectiveness Senates have clear overview of and show evidence of responsiveness to potential areas of risk to adult mortality.

Table 1: Obstetric Mortality

This includes all obstetric activity in-hospital.

Obstetrics	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	TOTAL
Total Mortality	0	0	0	0	0	0	0	0	0	0	0	0	0
Discharges	1490	1632	1689	1835	1921	1806	1850	1690	1684	1721	1661	1870	20808

Table 2: Gynaecology Mortality (non-oncology)

Gynaecology (non oncology)	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	TOTAL
Total Mortality	0	0	0	0	0	0	0	0	0	0	1	0	1
Discharges	258	203	293	470	546	554	614	637	477	487	563	648	5756

Table 3: Gynaecology Oncology

Gynaecology Oncology	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	TOTAL
Total Mortality	0	0	0	0	1	1	1	0	1	1	0	0	5
Discharges	70	60	66	76	72	65	67	64	62	75	62	76	815

<u>Out of hospital deaths 2020-21 Quarter 4</u>

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.

There were no reported out of hospital maternal deaths related to women who died within 12 months of delivering a baby at LWH in Q4.

There was a case of a lady who had delivered her baby at the Trust in September 2020. She was sadly murdered on 29 January 2021. A suspect has since been charged with her murder and the case remains ongoing.

There were no out of hospital Gynaecological deaths in Q4.

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.

Table 4 Mortality reviews and Key Themes

Mortality reviews in Q4		
	Maternity (Direct)	**Gynaecology**
No of Adult Deaths	0	2 (following discharge)
No of Mortality Reviews completed	0	0 (patients passed away at another Trust)
No of deaths requiring RCA's	0	2 (72 hour reviews, declared as Serious Incidents by an external Trust)
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

Unexpected adult gynaecology deaths trigger a 72- hour report and are recorded on Ulysses (Trust risk management and incident recording system).

There were 2 unexpected gynaecology deaths recorded in this quarter.

Oncology - On 29 December 2020, the patient underwent a Laparotomy, Total Abdominal Hysterectomy (TAH), Bilateral Salpingo Oophorectomy (BSO) and omental biopsy for an ovarian mass and a raised CA125 (443). They had an uneventful recovery and were progressing well. They were discharged on 01 January 2021 following review. Later the same day the patient was taken by ambulance to the Accident & Emergency (A&E) Department at the Royal Liverpool Hospital. The patient had been experiencing chest pain and abdominal pain and 999 were called. On arrival to A&E the patient was in cardiac arrest and a team decision was made to stop resuscitation efforts and the patient passed away.

Non-oncology - In February 2021, a patient had been admitted for planned Colorectal surgery as part of the Covid support work agreed with Liverpool University Foundation Trust (LUFT). They had an uneventful recovery and were progressing well, aiming for discharge home to daughter's residence for recuperation. They then became unwell on the 19 February – they were seen by a colorectal surgeon with a plan for CT. They were reviewed again with a plan put in place for transfer to the Royal Liverpool

Hospital for CT and ongoing management. They subsequently deteriorated and passed away unexpectedly at the Royal Liverpool Hospital.

All **direct maternal deaths** trigger serious incident investigation. No direct maternal deaths were recorded in this quarter.

Learning from Deaths

There have been 2 Gynaecology unexpected deaths, reported in Q4 and subject to 72-hour reviews. There were no immediate issues identified following the reviews. Both cases remain subject to ongoing Serious Incident investigations, having been declared and led by LUFT. The Trust remain actively involved in both cases. Any associated learning, if applicable, will be shared once the investigations have been completed.

Risk Assurances in relation to Mortality

As part of the Trusts assurances processes the Effectiveness and Safety Sub – Committee work to gain assurance as to actions taken in relation to Serious Incident reviews, Lessons Learnt, External Alerts and National guidance on Quality and Safety.

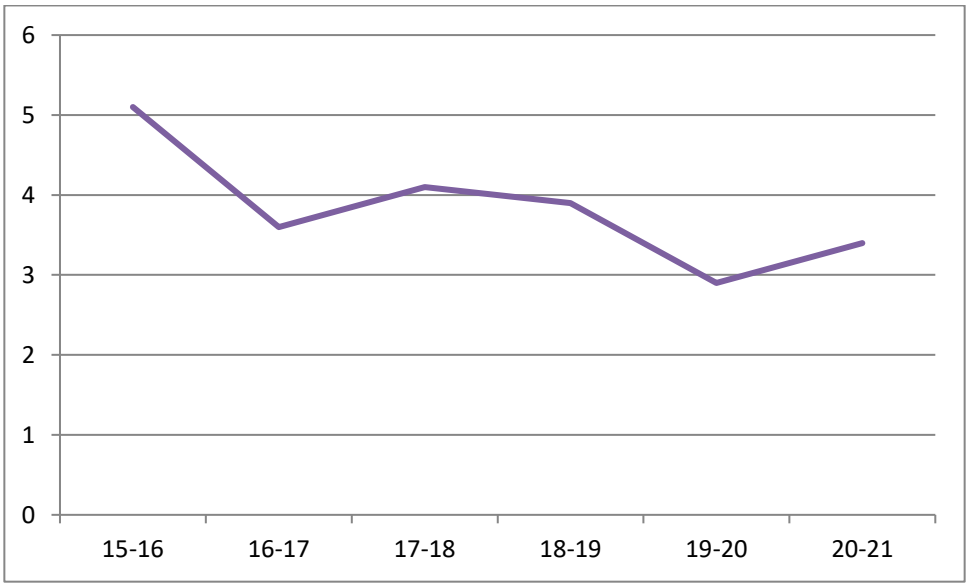
2. Maternity / perinatal

Table 5. perinatal deaths

PERINATAL DEATHS

	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	TOTAL
ADULT Obstetrics	0	0	0	0	0	0	0	0	0				0
STILLBIRTHS Total stillbirths	1	5	4	2	3	1	4	1	2	4	0	3	30
Stillbirths (excl. terminations)	1	5	4	2	2	1	2	1	2	3	0	3	26
Births	596	579	638	658	677	681	669	605	605	604	615	650	7573
Overall Rate per 1000 births	1.68	8.63	6.27	3.03	4.43	1.47	5.98	1.65	3.31	6.6	0	4.6	3.9
Rate (excluding TOP) per 1000	1.68	8.63	6.27	3.03	2.95	1.5	1.47	1.65	3.31	4.9	0	4.6	3.4

Figure 1: rate since 2015-16 per 1,000 births



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. This report encompasses all babies >23+6 weeks.

Table 6: 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.

All our parents are invited to submit questions for the review panel to answer through the Honeysuckle team.

Stillbirth reviews and Key Themes

Table 7: 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.

All our parents are invited to submit questions for the review panel to answer through the Honeysuckle team.

Stillbirth reviews and Key Themes

Table 8. Grading of antenatal care for babies in Q4 2020-21

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

Three babies are still to be reviewed. One is awaiting formal review and two had outstanding pathology reports at the time of the May PMRT meeting.

Table 9. Details of the deaths for this period and consequent actions taken

Gestation	Grading of care	Cause of death	Issues	Actions	Parental involvement
24 (reviewed during Q4 report)	B	Placental abruption	No 16-week appointment	Audit of 16-week appointments in Summer once K2 has been in place long enough to effect	Questions submitted and answered. Debrief conducted
35	C	Fetal vascular malperfusion	Growth scan guideline not followed	Cardiac clinic to consider FMU follow	Invited but no questions submitted.

				up for growth for high risk babies	Debrief arranged
37	B	Delayed villious maturation	Missed ANC not followed up	Out of area women need robust follow up system	Invited but no questions submitted. Debrief arranged
32	A	Fetal abnormality and fetal vascular thrombosis	None	None	Invited but no questions submitted. Debrief arranged
26		To be reviewed June			Questions submitted
34		To be reviewed June			Invited to submit questions
32		To be reviewed June			Invited to submit questions

Actions taken to address the findings for Q4:

- Cardiac clinic to consider risk assessment of their women who would benefit from FMU follow up for fetal wellbeing.
- It is proposed K2 and continuity of carer will reduce the number of missed 16-week appointments. An audit of this needs to be undertaken in Summer to support this.

Progress on previous actions

- DNA Audit has been provisionally reported by consultant midwife. The current guideline and pathway does not encompass the new online notes system. New guidance needs to be developed.

Revised March 2021 CNST requirement targets

The trust was in receipt of the revised maternity invective scheme guidance which has included updated timescales and deadlines for the reporting and reviewing of stillbirths and neonatal deaths.

All CNST targets have been met for perinatal mortality as described within the guidance. The trust board were updated as per maternity incentive scheme lead in May 2021.

This quarterly report (and previous quarterly reports) will continue to be discussed with the maternity safety champion.

2020 – 2021 Summary of findings

In 2021 we have seen a slight reduction in the number of babies for whom different care could have led to a different outcome from 26% to 22%.

Table 10: 2020 – 2021 Grading of care (only 23/26 babies reviewed)

Grading of AN care	Number of babies	Percentage
A	9	39%
B	9	39%
C	**4**	**17%**
D	**1**	**4%**
Total	23	100%

Table 11: 2019 – 2020 Grading of care

Grading of AN care	Number of babies	Percentage
A	11	48%
B	6	26%
C	**4**	**17%**
D	**2**	**9%**
Total	23	100%

Table 12 outlines the issues associated with the stillbirths for babies in 2020 -2021 raised through PMRT. Not all are significant to the outcome.

Table 12: Issues identified with care

Issue	Number of babies
Aspirin prescription	1
CTG interpretation	1
DNA	7
Domestic violence enquiry	7
Growth detection	6
Booked late	1
Fetal anomaly not diagnosed AN	2
Missed ANC	2
Partogram not used	4
Baby transferred elsewhere for PM	11
No pre-conceptual counselling for previous GDM or HTN	2
No referral to consultant care	2
Stillbirth diagnosed in a satellite unit	1
Scan request declined	1
Screening for GDM not undertaken	2
Covid 19	**6**

There has been a significant improvement in the number of babies where an issue was identified with partogram use (12/23 in 2019-20 to 4/23 in 2020-21) and DV enquiry (12/23 in 2019-2020 and 7/23 in 2020-21). This reflects the learning from previous reports and we envisage it will continue to improve.

PMRT highlights transferring a baby to another unit for post-mortem as an issue. This an imported risk from the structure of healthcare in Liverpool. We ensure that parents are informed of the transfer and that babies are well cared for throughout the journey. We also invite the pathologists to the review panels which means we gain greater insight into the cause of death.

COVID has impacted all of our stillbirths in the sense it has impacted on all of our lives and the healthcare we provide. We have been unable to provide as much face-to-face care and we have had to pause CO screening. We identified 6 babies where it was a specific issue.

- 4 mothers' partners were not present with the mother at significant points such as when the stillbirth was diagnosed.
- 1 mother had COVID at the time of the stillbirth. This baby is undergoing SI review. The report is not yet completed.
- 1 mother was unable to access her 20-week anomaly scan within the expected time frame as she was isolating on return from holiday abroad.
- 1 couple were unable to take their baby home due to COVID restrictions.

DNA was associated with 7 of our stillbirths in 2020-21. We have identified that the current DNA management guideline does not fit with the new online note system. A new guideline will be developed to encompass the new system. A large proportion of the DNA is at 16 weeks. The previous system relied upon women booking this appointment through primary care and we have found that this does not regularly occur. The new continuity of carer midwifery case loading model is proposed to be a framework to improve access to care for women.

Fetal growth detection and subsequent management has been highlighted as an issue and we note this is a recurring theme. This is multifactorial.

- 2 babies the symphysis fundal height was incorrectly plotted and 2 babies the estimated fetal weight was not plotted correctly.
- 1 baby the growth scan policy was not adhered to.
- 1 baby growth scans were undertaken but they did not identify small for gestational age despite images of adequate quality. This is a known limitation of growth scans.
- 1 mother did not attend her 25-week appointment therefore she did not undergo SFH measurement and the potential to identify a small baby was missed.

<u>Parental involvement</u>

Parental involvement in reviews is central to our stillbirth review process. All our parents are informed of and invited to participate in the review process through submitting questions. Each baby is assigned a Honeysuckle bereavement midwife who is the point of contact. In 2020-21 16/26 (62%) parents submitted questions to us for the review.

Progress on issues and actions for 2020-21

- An aspirin PGD has been approved to improve access to aspirin for women early in pregnancy.

- Formal process for referral to consultant led clinic for raised platelets has been implemented.
- Stillbirth investigation process SOP is live, enabling us to provide a consistent approach to stillbirth investigations.
- Current DNA policy has been identified as out of date and in need of updating to capture the new online notes system.
- Continuity of carer is anticipated to reduce the number of DNA, particularly at 16 weeks. We propose an audit of 16-week contacts in the summer to evidence the predicted improvement.

Recommendations

It is recommended that the committee:

- take assurance that the rate of stillbirth remains on the downward trajectory.
- take assurance that we put parents at the centre of our investigation process.
- take assurance that all stillbirths undergo a robust review process where learning is identified and shared.
- take assurance on progress against nationally mandated initiatives such as CNST year 3, PMRT and MBRRACE-UK.

3. Neonates

This section updates the Board regarding the Trust systems and processes to review and learn from deaths of neonates under their care. This is in accordance with recommendations by the National Quality Board and the Care Quality Commission. It outlines the work taking place within the department which is reported to the neonatal NWODN (North West operational delivery network) and reviewed at CDOP (child death overview panel).

Key findings:

- Q4 mortality rate for all LWH neonatal deaths is 6.4/1000 births
- Q4 mortality for LWH booked babies is 3.2 /1000 births
- Overall 20/21 mortality rate for all LWH neonatal deaths is 6.2/1000 births
- Overall 20/21 mortality for LWH booked babies is 3.2/1000 births

1. Mortality Dashboard

It has been agreed with the Head of Governance and Deputy Medical Director, that the following table showing the total mortality and the rate of death per 1000 births will be used as the mortality dashboard metric. Tables 13 and 14 refer to LWH NICU in-hospital mortality before discharge. The end of year annual neonatal mortality report will detail all neonatal deaths (<28 days), both on NICU

and labour ward, all deaths before discharge, deaths at home or in another organisation after delivery and / or care in LWH neonatal unit.

Table 13: NICU Mortality

NICU	Apr 20	May 20	Jun 20	Jul 20	Aug 20	Sep 20	Oct 20	Nov 20	Dec 20	Jan 21	Feb 21	Mar 21	Total
Discharges	110	99	78	102	108	91	94	98	90	91	92	89	1142
Total Mortality	3	0	4	9	3	9	0	3	4	6	4	2	47
Births	584	572	631	658	677	681	669	605	605	610	618	658	7568
Mortality Rate per 1000 births	5.1	0	6.3	13.6	4.4	13.2	0	4.9	6.6	9.8	6.5	3.0	6.2

There have been a higher than usual number of deaths in July, September and January 20/21. A full annual report will be completed in the next month, with comparison over previous years, benchmarking data and identifying themes and learning to address going forward.

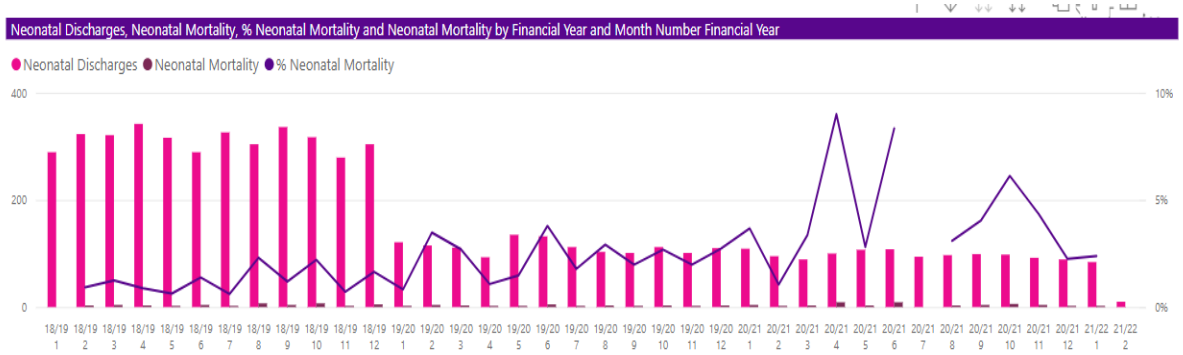


Figure 2 details over time, month by month from 18/19 to 20/21, the discharges and neonatal mortality as bar charts, with the percentage neonatal mortality as the purple line chart. This demonstrates the change we have seen over the last year in the neonatal mortality rates in LWH.

Table 14 details the mortality for babies booked at LWH only, excluding in-utero and post-natal transfers. Tables 15 and 16 detail the breakdown of the deaths by gestation and cause. As a regional tertiary surgical and cardiac NICU we accept in-utero and post-natal transfers of high-risk babies requiring intensive care after birth and have an increased risk of mortality.

Table 14: NICU Mortality (booked LWH)

NICU (LWH BOOKED)	Apr 20	May 20	Jun 20	Jul 20	Aug 20	Sep 20	Oct 20	Nov 20	Dec 20	Jan 21	Feb 21	Mar 21	Total
Discharges	110	99	78	102	108	91	94	98	90	91	92	89	**1142**
Total Mortality	1	0	3	6	1	3	0	2	2	4	2	0	**24**
Births	584	572	631	658	677	681	669	605	605	610	618	658	**7568**
Mortality Rate per 1000 births	1.7	0	4.8	9.1	1.5	4.4	0	3.3	1.5	6.6	3.2	0	**3.2**

Some variation is to be expected month on month, however July is noted to be higher than usual. There was an initial overview of the cases for any clear themes, pending full review through the PMRT process for issues and identifiable themes.

Some babies who are born and or cared for in NICU are subsequently transferred to Alder Hey (AH) 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 a hospice for end of life care the case is reviewed through the LWH PMRT process.

Table 15: Mortality ***after*** discharge from NICU

	Apr 20	May 20	Jun 20	Jul 20	Aug 20	Sep 20	Oct 20	Nov 20	Dec 20	Jan 21	Feb 21	Mar 21
Alder Hey Children's Hospital	1 (non-LWH booked)	1 (non-LWH booked	1 (LWH booked)			1 (LWH booked)		3 (2 booked				
Hospice				1 (LWH booked)	1 (non-LWH booked)					2	1	
Repatriation to booking hospital			1									
Home												

Babies who died after transfer to AH are reviewed through the LWH PMRT process which will then feed into the AH HMRG (hospital mortality group) for a complete review of the mother and babies' care.

In Q4, 3 babies died after transfer to another care setting, in all cases this was transfer to hospice for end of life care.

Table 16: All mortality by gestation Q4 20/21

	LWH booked mortality	Non-LWH booked mortality	All mortality
Extremely preterm (<28 weeks)	3	4	**7**
Very preterm (28-32 weeks)	1	3	**4**
Moderate preterm (32-37 weeks)	2	0	**2**
Term (>37 weeks)	0	2	**2**

The highest mortality group remains the extremely and very premature babies. Of the 4 deaths in the moderate and term babies, 3 had congenital anomalies: trisomy 18, bilateral lung hypoplasia and LUTO (lower urinary tract obstruction). The fourth baby in this group died from HIE (hypoxic ischaemic encephalopathy).

Table 17 details the breakdown by primary cause of death as stated on the death certificate, overall for Q4 the majority of deaths were due to prematurity, accounting for 5 out of the 10 deaths this quarter. There were also a significant proportion of deaths attributable to congenital anomalies, which is similar to the proportion seen in the last quarter, although the overall number was higher.

Table 17: All mortality by cause Q4 20/21

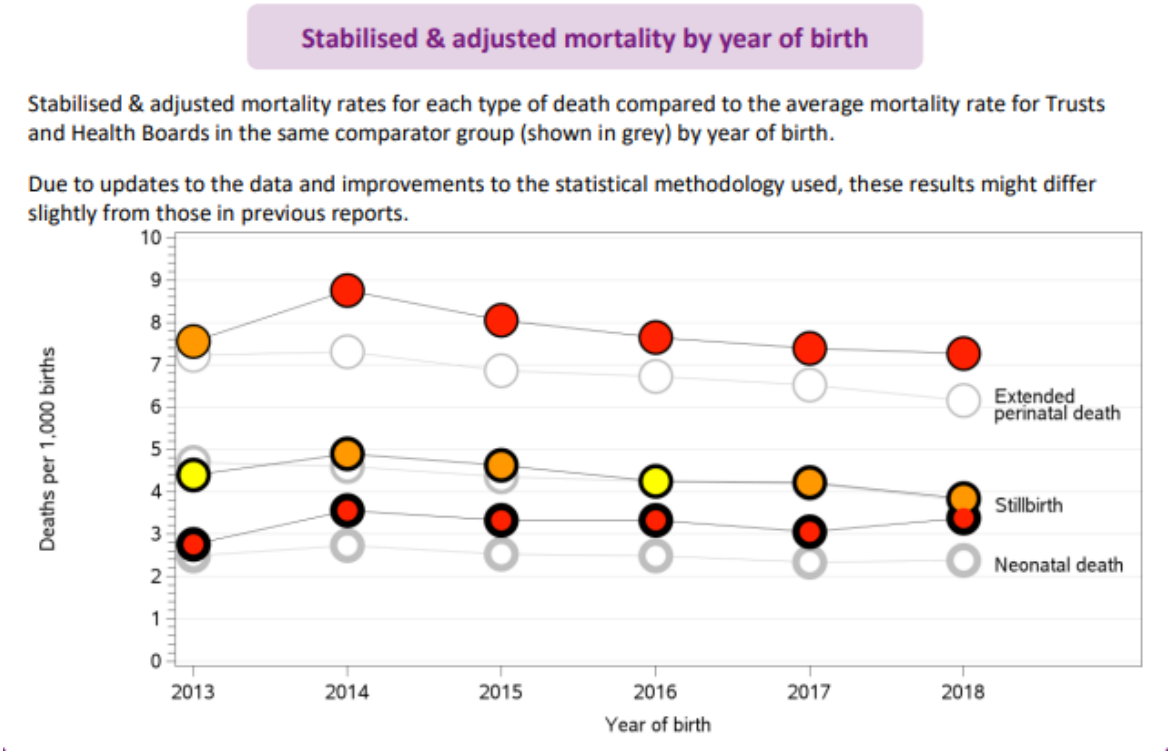
	LWH Booked	In-utero transfers (non-LWH booked)	Ex-utero transfers (non-LWH booked)	Unbooked	Total
Prematurity	2				**2**
Infection		1			**1**
Hypoxic ischaemic encephalopathy	1		1		**2**
Congenital abnormality	1	2	1		**4**

Respiratory		1	1		**2**
Cardiovascular					
Abdominal / Renal	1		1		**2**
Neurological	1		1		**2**
Other					

Benchmarking data

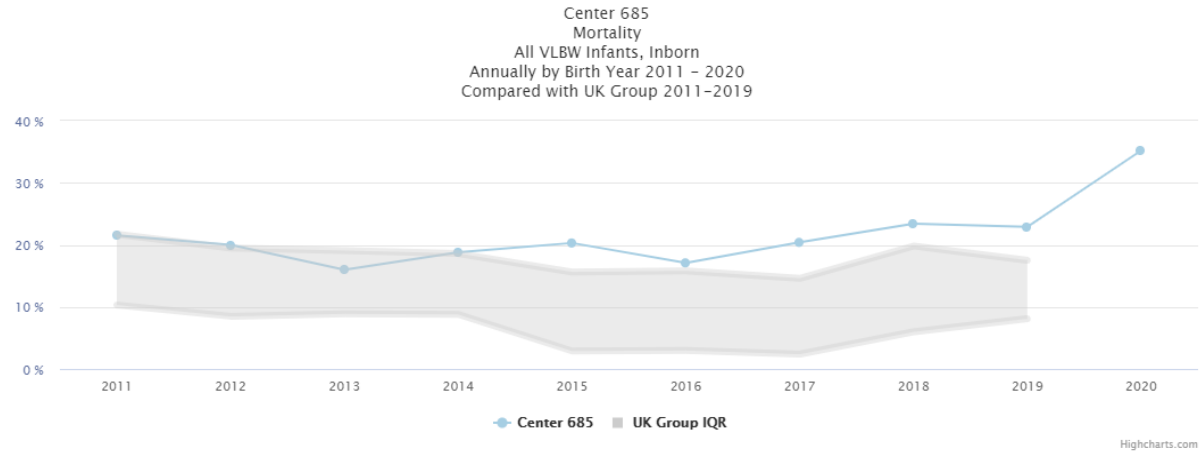
We benchmark our mortality through MBRRACE nationally and the international VON network. MBRRACE has reported most recently on 2018 data, figure 3 demonstrates mortality rates over time, the grey lines demonstrate UK average for the LWH comparator group i.e. other NICUs with neonatal surgery.

Figure 3.



We also benchmark through an international group VON, we can compare within the UK members of this network for various aspects of care, figure 4 is the mortality rates specifically for those born, VLBW (<1500g) babies over time. The 2020 increase is notable, there is yet to be a trend analysis the whole comparator group for 2020, this is usually available in June of the following year. Previously we have remained at the upper end of or above the interquartile range for mortality but have mostly followed the trend.

Figure 4



2. Mortality reviews

All neonatal deaths on NICU are reviewed using the standardised national perinatal mortality review tool (PMRT). There is a monthly multi-disciplinary review meeting with representation from neonatal, obstetrics, bereavement support and palliative care teams. Reviews are planned for 6-8 weeks after the baby has died. Where there has been an in-utero transfer or a baby has been transferred post-natally for higher level care, the hospital of booking and or/ birth along with other care providers involved are invited to the meeting to complete a joint review encompassing all aspects of care. Each case is then assigned a grade (A-D, see below) for each of the following areas: antenatal care, neonatal care and care after the baby has died.

Table 18. Perinatal mortality review tool (PMRT)

A	no issues with care identified up to the point that the baby was confirmed as having died
B	care issues which the panel considered would have made no difference to the outcome for the baby
C	care issues which the panel considered may have made a difference to the outcome for the baby
D	care issues which the panel considered were likely to have made a difference to the outcome for the baby

Cases where a grading of C or D has been assigned will be then reviewed further as a table-top review, or if deemed appropriate a formal review or serious incident. Local mortality review outcomes and

learning are shared within the department and at the Clinical Effectiveness Group for Cheshire and Mersey NWODN. The PMRT outcomes are reported to the regional child death overview panel (CDOP).

The PMRT process encourages parental engagement, all parents are informed of the review process at the time the baby dies, followed up with a letter detailing the process and how they can engage is provided. Any comments / questions / concerns which the parents send in are addressed as part of the review and parents are offered an appointment to discuss the response thereafter and a letter detailing the PMRT outcome is provided following the appointment.

Table 19: 20/21 Neonatal Mortality Summary

	Q1	Q2	Q3	Q4	Total
NICU deaths	7	21	7	12	
LWH booked NICU deaths	**5**	**10**	**4**		
Mortality rate /1000 births	3.9	10.4	3.7		
LWH booked mortality rate / 1000 births	**2.2**	**4.7**	**2.1**		
PMRT Reviews completed	7	21	7	11 (incl.3 non-NICU deaths)	
No. of deaths where any care issues were identified (i.e. grades B/ C/D)					
Antenatal	*6*	*7*	*2*	*3*	
Neonatal	*6*	*14*	*6*	*7*	
Care of mother after death of baby	*2*	3	*1*	*1*	
No. of deaths where care issues may have or were likely to have affected the outcome (grade C/D)					
Antenatal	*1*	*1(D)*	*2*	1	
Neonatal	*1*	*1(C)*		3	
Care of mother after death of baby					
Non-NICU deaths of babies cared for on NICU	4	3	*3*	*3*	

Learning from Deaths from Q4

– 11/15 reviews completed

In Q4 there were 12 NICU deaths and 3 deaths after transfer to another care setting (hospice), all 15 cases will be reviewed through the PMRT process, to date 11 have been fully reviewed.

Neonatal care

Of the reviews held to date, we identified care issues in the neonatal management in 7 of 11. In 4 of those cases the care issues identified did not affect the outcome. Three of the cases were deemed to have neonatal care issues which may have affected the outcome for the baby. For 1 of those cases the care issues identified related to management in the birth hospital prior to transfer to LWH for higher level intensive care, the birth hospital will address this issue. Two cases were found to have issues with neonatal care at LWH which may have affected the babies' outcome. Both cases will have in depth tabletop reviews of the issues contributing to the C grading, which for both was early respiratory management in extreme preterm babies although in different ways. The tabletop reviews are pending.

The issues identified which did not have affect the outcome for the baby (grade B) include:

- Unplanned extubation
- Prolonged handling for central line insertion
- Delay in performing septic screen
- Hypothermia on admission (birth hospital actions)

Actions to address the above issues:

- Unplanned extubation audit and QIP – commenced May 2021
- New admission and early management protocol for extreme preterm babies – education and training commenced May 2021, launching June 2021
- LOTW May 2021 – golden hour septic screen for administration of antibiotics within 1 hour of decision to screen
- Hypothermia – related to equipment issue and will be addressed by the birth hospital

Antenatal Care

This report only includes cases where antenatal care was provided in LWH, and there were no care issues identified in the majority of cases reviewed. In Q4, there were 2 cases where care issues were identified, both relating to the management of abnormal mid-stream urine (MSU) results, where there was lack of appropriate follow-up for repeated samples. This is a recurrent issue which has been escalated and currently on the risk register. Actions from previous reviews have been implemented, and further outcomes will be monitored through the Matron in charge of this risk on the register.

Care after the death of the baby

One case in Q4 had an issue identified with the care of the mother (and family) after the death of the baby but did not affect the outcome. Unfortunately, the community midwifery team were not aware of the baby's death when contacting the mother. The notification process will be reviewed to avoid this happening in the future.

Revised Feb 2021 CNST requirement targets

The trust was in receipt of the revised maternity invective scheme guidance which has included updated timescales and deadlines for the reporting and reviewing of stillbirths and neonatal deaths.

The neonatal PMRT team are aware of the changes to the guidance and can provide assurance that standards required will be met.

This quarterly report (and pervious quarterly reports) will continue to be discussed with the maternity safety champion.

Overall summary: Learning from Deaths

There have been 1 gynae oncology related death and 1 mutual aid colorectal surgery death in Q4 and are subject to a mortality review and ongoing SI investigation. There were no benign gynaecology patient deaths.

There have been no maternal deaths.

There were 6 stillbirths in Q4. This is one more than Q3.

NICU experienced 6 deaths in Q4, one fewer than Q3. In Q4, 3 babies died after transfer to another care setting. In all cases this was transfer to hospice for end of life care.

The Board members are asked to review the contents of the paper and take assurance that there are adequate processes and progress against the requirements laid out by the National Quality Board and to take assurance that there are effective processes in place to assure the Board, regarding governance arrangements to drive quality and learning from deaths in receipt of care at the Trust.