UHL Mortality and Learning from Deaths Report

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QOC Paper J

Purpose of report:

This paper is for:	Description	Select (X)
Decision	To formally receive a report and approve its recommendations OR a particular course of action	
Discussion	To discuss, in depth, a report noting its implications without formally approving a recommendation or action	
Assurance	To assure the Board that systems and processes are in place, or to advise a gap along with treatment plan	x
Noting	For noting without the need for discussion	

Previous consideration:

Meeting	Date	Please clarify the purpose of the paper to that meeting using the categories above
Mortality Review Committee (MRC)	02/02/21	Discussion
Executive Board	EQB 09/02/21	Discussion
Trust Board Committee – QOC		
Trust Board		

Executive Summary

1. Context

1.1 UHL's crude and risk-adjusted mortality rates, and the work-streams being undertaken to review and improve review these, are overseen by the Trust's Mortality Review Committee (MRC), chaired by the Medical Director

1.2 MRC also oversee UHL's "Learning from Deaths" framework which includes learning identified through the:

- Medical Examiner Process
- Bereavement Support Service
- Specialty Mortality Reviews using the national Structured Judgement Review tool
- LLR Child Death Overview Panel reviews and Perinatal Mortality Review Group reviews using the national Perinatal Mortality Review Tool
- Clinical Team reviews and reflections
- Patient Safety Incident Reviews, Investigations and Complaints
- Inquest findings and Prevention of Future Death letters

1.3. One of the national Learning from Deaths requirements is for Trusts to publish their Learning from Deaths data on a quarterly basis and this is also one of the requirements of the Clinical Negligence Scheme for Trusts' (CNST) Maternity Incentive Scheme.

2. Questions

2.1 What are the data telling us around UHL's mortality rates and what actions are being taken to improve these?

2.2 Are we making good progress with our Learning from Deaths framework and what learning has taken place?

2.3 Are we meeting the national reporting requirements?

3. Conclusion

3.1 A summary of UHL's mortality rates, both risk adjusted and crude, are set out in the slide deck (Appendix 1). As anticipated in the previous report we have seen an increase in our SHMI and HSMR. Our latest SHMI, which covers the 12 months Oct 19 to Sept 20 has increased to 100 and remains within the expected range. The latest HSMR (as published by Dr Foster Intelligence) covers the 12 months Nov 19 to Oct 20 and UHL's HSMR is 105 and is now above expected. It is important to remember that both the SHMI and HSMR methodologies have changed during the COVID pandemic and that all COVID activity is excluded from the SHMI. The HSMR differs from the SHMI in that it includes COVID activity and deaths where COVID is a secondary diagnosis. The implications of these changes are not yet fully understood.

In terms of crude mortality, over the past 3 months we has seen a month on month increase and in January there were 557 deaths (In Patient and ED) with 61% of these being COVID related. This increase has meant that our 20/21 (YTD) crude mortality rates is now 1.9%.

To further understand the drivers behind our increasing SHMI and HSMR, the Trust has been working closely with our Doctor Foster Intelligence (DFI) Consultant. DFI have developed a new 'Euclidean' peer group of hospitals (using robust statistical methods) that they feel mirror UHL more closely than previous peer groups.

UHL's crude mortality rate is in line with these peers and is in fact below the DFI peer group average. However, our 'expected mortality rate' (as calculated in the SHMI and HSMR risk adjustment models) is lower than others in that group and is lower than our observed mortality which therefore means we are seeing an increase in our SHMI and HSMR.

This reasons behind these differences has been discussed in detail at the Mortality Review Committee meeting and several factors have been noted, the significance of which requires further evaluation: overall reduction in activity due to cancellation of elective activity and a reduction in the overall number of emergency admissions, different approaches to inclusion and exclusion of COVID activity between the HSMR and SHMI, reduced depth of coding in UHL for the first 4 months of 2020 followed by a change in coding practice with Coders working remotely and using electronic records rather than case notes and a reduction in the rate of palliative care coding.

It has therefore been agreed to commission DFI to undertake a more detailed analysis of our mortality data in order to better understand whether the changes in our comparative mortality data represent a deterioration in the quality of care we provide for our patients and if so which diagnosis groups or pathways warrant further clinical review, or whether the figures are a consequence of the altered methodology or differences in our population of patients (case mix) not captured by the existing risk adjustment methodology.

It should be noted that the recently published GIRFT report highlighted the relatively good outcomes in patients admitted to UHL with COVID and which is also reflected in our COVID related mortality when compared to our peer group.

3.2 The 20/21 (Q1 & Q2) "Learning from Deaths" activity is summarised in Appendix 2.

The number of deaths in Quarter 3 was similar to Quarter 2 but there were 400 inpatient deaths in December and most of these were towards the end of the month which coincided with the Christmas Holiday and therefore had an adverse effect on timely 'cause of death discussions'. Although the Medical Examiner office extended its opening hours (including Boxing Day Bank Holiday) the certifying doctors obviously had to prioritise their clinical duties or were off duty having worked the weekend. We have been very fortunate that some of our Medical Examiners have been able to work additional hours so we have been able to create additional capacity particularly at the end of January/February when we saw the greatest number of deaths. However the high number of deaths in January (557 Inpatient/ED) has led to some delays with scrutiny of case notes (mainly of deaths at the LGH and Glenfield) and a back log with data inputting and sending out requests for further reviews.

All Adult deaths and most Child death were discussed with the Medical Examiner during Quarter 3. MEs are also discussing Neonatal deaths (on NNU). 92% of all adult deaths in Quarter 3 are known to have been screened to date.

Following discussion with LOROS, we have put on hold providing an ME Service for LOROS this was to support the piloting of an ME Service for Primary Care. This service was piloted with a small number of Practices during December and January but due to the increased workload of the ME Service, it has been agreed to suspend the pilot until later in the Spring.

One of the ED Paediatricians has been appointed, on a 6 month secondment basis, as a Paediatric ME to support both the MEs develop confidence with discussing Child Deaths and also to work with the Children's Hospital to implement the Child Death Review process in line with the national CDOP requirements

We have continued to try and improve the ME screening process for LGH and Glenfield Deaths but this has been challenging during December and January due to the increased activity. However, we recommenced using the Coroner's ePortal for submitting referrals following supporting the development work in collaboration with the Coroner's team.

There has been ongoing close liaison with the Muslim Burial Council to support Urgent Release of the Deceased both in office hours and at weekends/ the Christmas period. We have seen a higher number of deaths of Muslim patients in Q3 (55) than in previous Quarters (14 in Q1, 41 in Q2).

The Medical Examiners have also been supporting the COVID Wards and Intensive Care Units with the Death Certification process, in collaboration with the Bereavement Services Office, either by completing MCCDs on behalf of the Certifying Doctor or facilitating completion of the MCCD on the Ward/Unit rather than having to come to the BSO/ME Office.

The ME team have also continued to complete the COVID Death Notification Forms and advise families of the need to submit data to NHSIE.

Speaking to the bereaved relatives has been a very important part of the ME's role during this COVID pandemic as they often have many questions due to the communication difficulties whilst the patient was on the Ward. Concerns about getting through to the Ward, not knowing what was going on has been a regular feature of such calls. Another issue has been where patients became COVID positive some days after admission, albeit they won't have met the 'probable' or 'definite' Hospital Acquired COVID criteria. Particularly distressing for relatives is where patients were previously discharged and then are found to be positive for COVID and so other members of the family are then infected. We have also now had several families where more than one member has

died in UHL, with two couples dying on the same day which is again particularly distressing for the bereaved.

The Bereavement Nurses have been working closely with the MEs to provide follow up support where needed and trying to help the bereaved with unanswered questions or to talk through their grief. This is often exacerbated due to lack of visiting or not feeling able to visit because they themselves are shielding plus being isolated during their bereavement because of lockdown. Helpfully there have been several agencies offering additional support for bereaved families during lockdown and the Bereavement Nurses have found Rainbows has been particularly good at reaching out to families.

There have been a lower proportion of cases referred for further review than in Quarter 2 but similar to Quarter 1 when we had the first COVID peak. Wherever possible the Medical Examiners have tried to clarify any queries themselves or have asked the Bereavement Nurses to look into a relatives concern or to undertake a fuller review of the case notes in order to keep requests of further review by the clinical teams to a minimum.

Where SJRs were requested in Quarters 1 and 2, most of these have now been completed – Specialty M&Ms have made good use of Microsoft Teams to hold their meetings. We may see a drop in performance for SJRs requested in Quarter 3 due to the need to suspend most M&M meetings for clinical pressures. Cardiac Surgery continues to be the Specialty with the most outstanding SJRs (they review all deaths) but the new M&M Lead is looking at how to address the backlog with support from the Head of Service.

There has been no additional 20/21 deaths thought to be due to a problem in care. Emerging themes from Bereaved Relatives, ME Screening and Specialty Reviews are similar to those in previous years and are summarised in Slide 14 with examples of improvement actions in Slide 15.

The priority for Quarter 4 is to address the data inputting backlog in order to support both internal and external reporting requirements and to follow up on all requests for further reviews.

We will also be liaising with the Regional Medical Examiner office to keep abreast of any national guidance, specifically in respect of plans for developing the ME service within Primary Care as this will obviously impact on our plans going forwards.

3.3 Appendix 3 is the latest quarterly report from the Perinatal Mortality Review Group (PMRG) and includes the updated PMRG action log. The 2018 MBRRACE-UK Perinatal Report has now been released and the Executive Summary and Local Review are given in Appendix 4.

It has been previously reported that the number of stillbirths in 2020 was significantly above that of the previous 2 years. An excess of approximately 10 stillbirths was noted in the first quarter of 2020 (ie before the COVID pandemic), with a return to normal rates for the remainder of the year but this increase will impact on our overall mortality rate for the full year. A detailed analysis of the January stillbirths was included in the last Quarterly Mortality report.

The COVID-19 pandemic resulted in significant changes to the maternity services from the end of March onwards and will be lifted gradually over the coming weeks. COVID 19 and associated changes to our services do not appear to have had an adverse impact so far on our perinatal mortality rate

The stillbirth rate for UHL for 2018 was below the national average, and was the lowest among our peer group. We had a higher neonatal mortality rate than the peer group average in 2018. The only

unusual feature identified among the neonatal death was the unusually high number of neonatal deaths amongst women who transferred their care to deliver at UHL for clinical reasons, in order to use the neonatal services (including the surgical and cardiac surgical facilities)

Both reports were received and discussed at the Perinatal Mortality Oversight Group, chaired by the Clinical Director for Women's & Children and subsequently at the UHL Mortality Review Committee. It was noted that the PMRG had a robust process for individual case reviews and that there had also been a number of 'cluster reviews' undertaken to look for potential themes.

Input Sought

To receive and note the content of this report.

For Reference** (edit as appropriate)**:

This report relates to the following UHL quality and supporting priorities:

1. Quality priorities

Safe, surgery and procedures	[Yes]
Safely and timely discharge	[Yes]
Improved Cancer pathways	[Yes]
Streamlined emergency care	[Yes]
Better care pathways	[Yes]
Ward accreditation	[Not applicable]

2. Supporting priorities:

People strategy implementation	[Yes]
Estate investment and reconfiguration	[Not applicable]
e-Hospital	[Yes]
More embedded research	[Not applicable]
Better corporate services	[Yes]
Quality strategy development	[Yes]

3. Equality Impact Assessment and Patient and Public Involvement considerations:

- What was the outcome of your Equality Impact Assessment (EIA)? N/A
- Briefly describe the Patient and Public Involvement (PPI) activities undertaken in relation to this report, or confirm that none were required N/A
- How did the outcome of the EIA influence your Patient and Public Involvement ? N/A
- If an EIA was not carried out, what was the rationale for this decision? N/A

4. Risk and Assurance

Risk Reference:

Does this paper reference a risk event?	Select (X)	Risk Description:
Strategic: Does this link to a ***Principal Risk*** on the BAF?	Yes	Principal Risk 2
Organisational: Does this link to an ***Operational/Corporate Risk*** on Datix Register		
New Risk identified in paper: What ***type*** and ***description***?		
None		

5. Scheduled date for the **next paper** on this topic: May 2021

6. Executive Summaries should not exceed **5 sides** [My paper does comply]]

Appendix 1

UHL's Crude and Risk Adjusted Mortality

February 2021

What are UHL's current overall crude and risk adjusted mortality rates?*

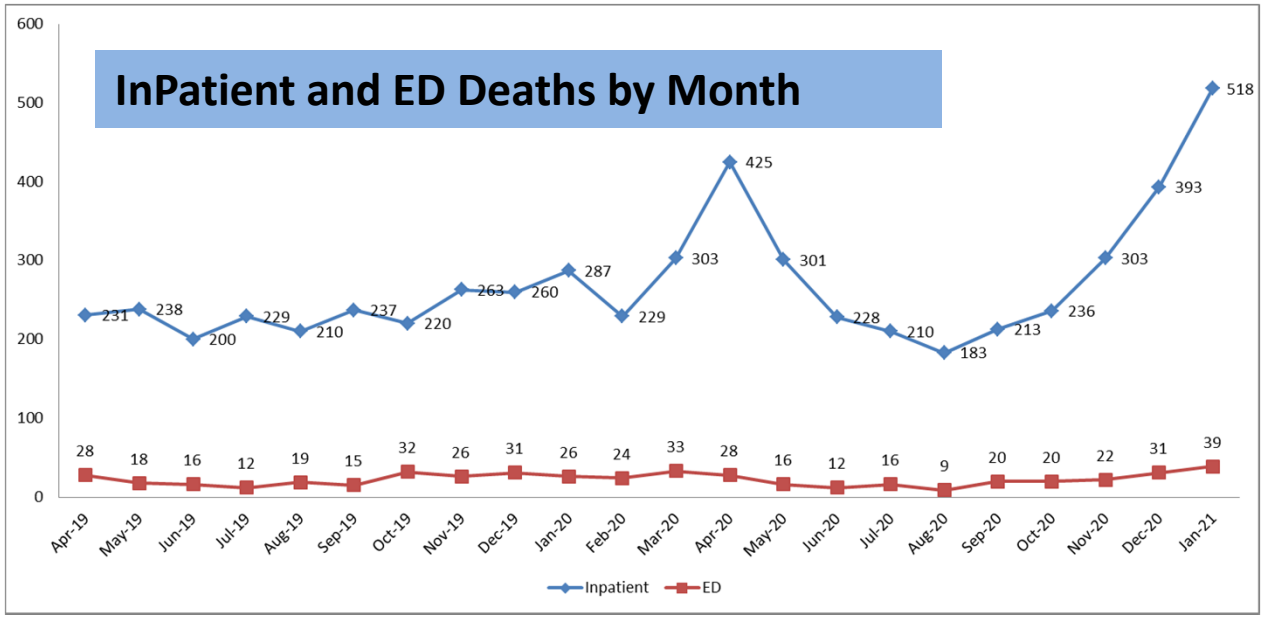
Crude mortality:
i.e. number deaths and proportion of discharges where death is the outcome

***Excludes Deaths in the Emergency Department**

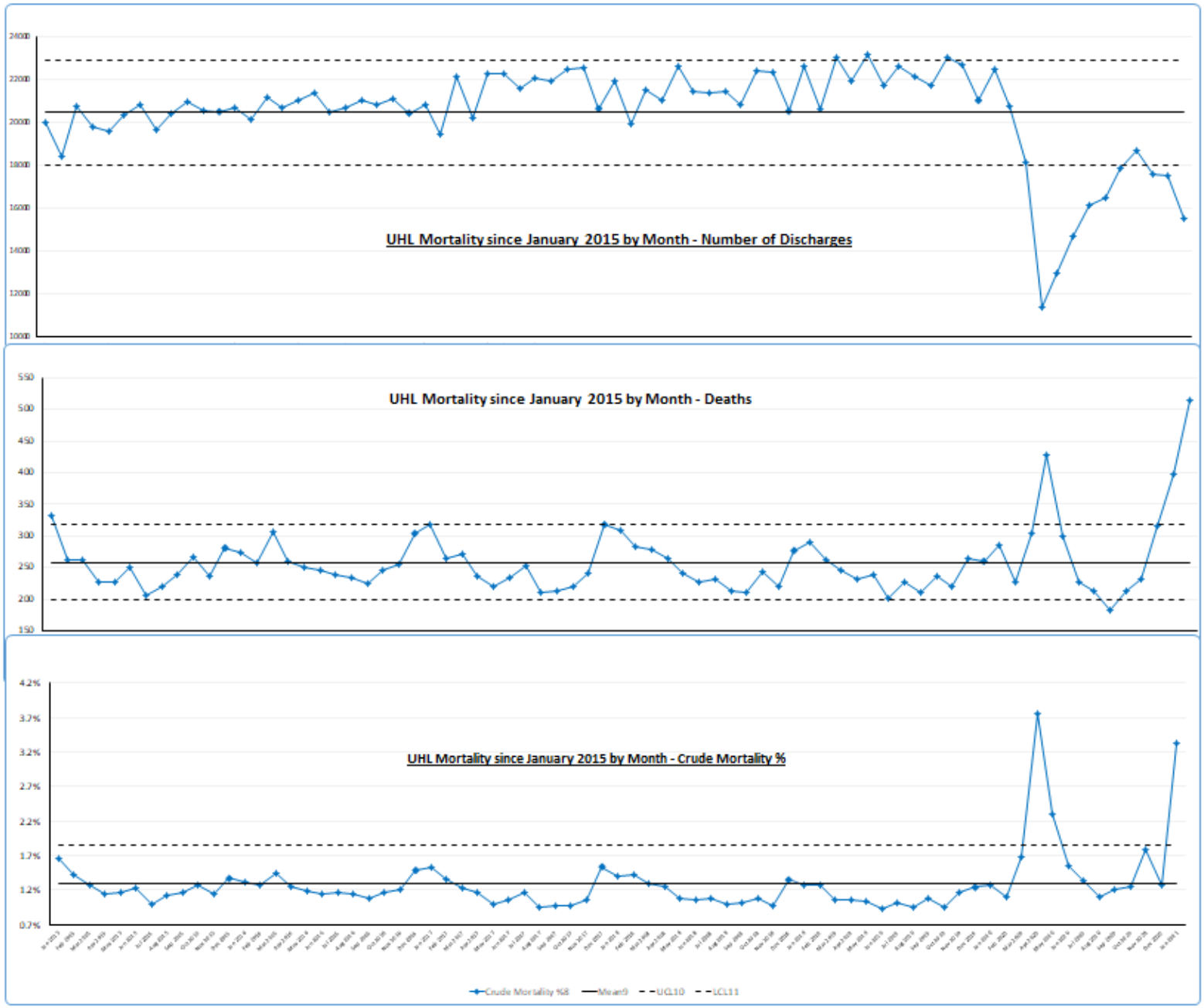
Crude InPatient Mortality

Discharged During…	All Discharges (incl Day Case)	All In-Patient Deaths	In-Patient Crude Mortality Rate
2020/21 YTD (Apr 20 - Jan 21)	**158,884**	**3025**	**1.9%**
FY 2019/20	261,647	2906	1.10%
FY 2018/19	260,301	2921	1.12%
FY 2017/18	259,539	3016	1.20%
FY 2016/17	250,233	3114	1.20%
FY 2015/16	244,776	2993	1.20%
FY 2014/15	234,889	2997	1.30%

As anticipated the 'second wave' of the Coronavirus pandemic during the winter months has had a significant impact on our inpatient mortality – see next slide for SPC chart



UHL's InPatient Activity, Deaths and Crude Mortality Rate



From April to October 20 we saw a month on month increase in activity and reduction in deaths.

Since October the number of admissions has reduced but the number of deaths has now overtaken the previous April peak and our crude mortality rate is again outside the SPC limits

Impact of COVID on our Mortality

Month	All In Patient and ED Deaths	COVID Deaths	% COVID
Mar-20	336	38	11%
Apr-20	453	246	54%
May-20	317	131	41%
Jun-20	240	57	24%
Jul-20	226	29	13%
Aug-20	192	7	4%
Sep-20	233	12	5%
Oct-20	256	35	14%
Nov-20	325	143	44%
Dec-20	424	212	50%
Jan-21	557	338	61%
All	**6410**	**1248**	**19%**

The above table includes both those patients who had a Positive COVID swab within 28 days of death and those where no Positive Swab but COVID is on the MCCD.

In April, 54% of the 453 deaths were COVID related, in December this increased to 61% of the 557 deaths.

SHMI: Summary Hospital Mortality Index

ie risk adjusted mortality where patients die either in UHL or within 30 days of discharge (incl those transferred to a community trust)

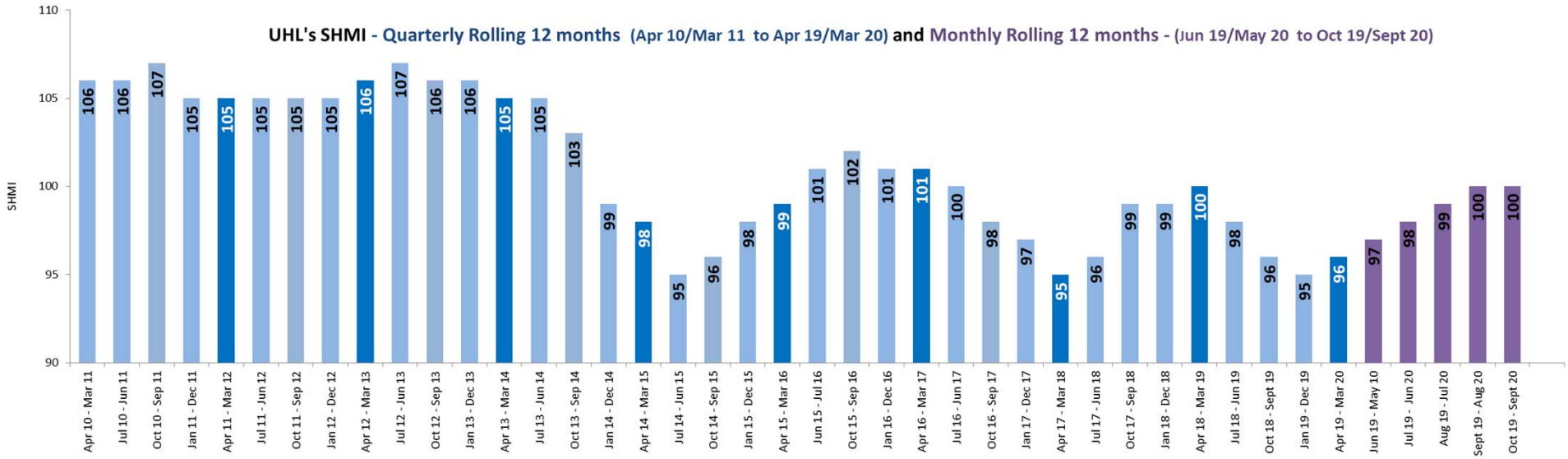
The SHMI is the ratio between the actual number of patients who die following hospitalisation at the trust and the number that would be expected to die on the basis of average England figures, given the characteristics of the patients treated there.

It covers all deaths reported of patients who were admitted to non-specialist acute trusts in England and either die while in hospital or within 30 days of discharge. **COVID-19 deaths are excluded from the SHMI**. The expected number of deaths is calculated from statistical models derived to estimate the risk of mortality based on the characteristics of the patients (including the condition the patient is in hospital for, other underlying conditions the patient suffers from, age, gender, method of admission to hospital, month of admission and birthweight).

The data used to produce the SHMI are generated from data the trusts submit to the Secondary Uses Service (SUS). The data are processed by NHS Digital to create Hospital Episode Statistics (HES) data, which are then linked with death registrations data from the Office for National Statistics (ONS) to allow deaths which occur outside of hospital to be captured. A combination of finalised and provisional HES data is used in the calculation of the SHMI to ensure that the indicator is as timely as possible.

The SHMI is not a measure of quality of care. A higher than expected SHMI should not immediately be interpreted as indicating poor performance and should instead be viewed as a 'smoke alarm' which requires further investigation. Similarly, an 'as expected' or 'lower than expected' SHMI should not immediately be interpreted as indicating satisfactory or good performance. The SHMI cannot be used to directly compare mortality outcomes between trusts and it is inappropriate to rank trusts according to their SHMI.

UHL's SHMI – as published by NHS Digital

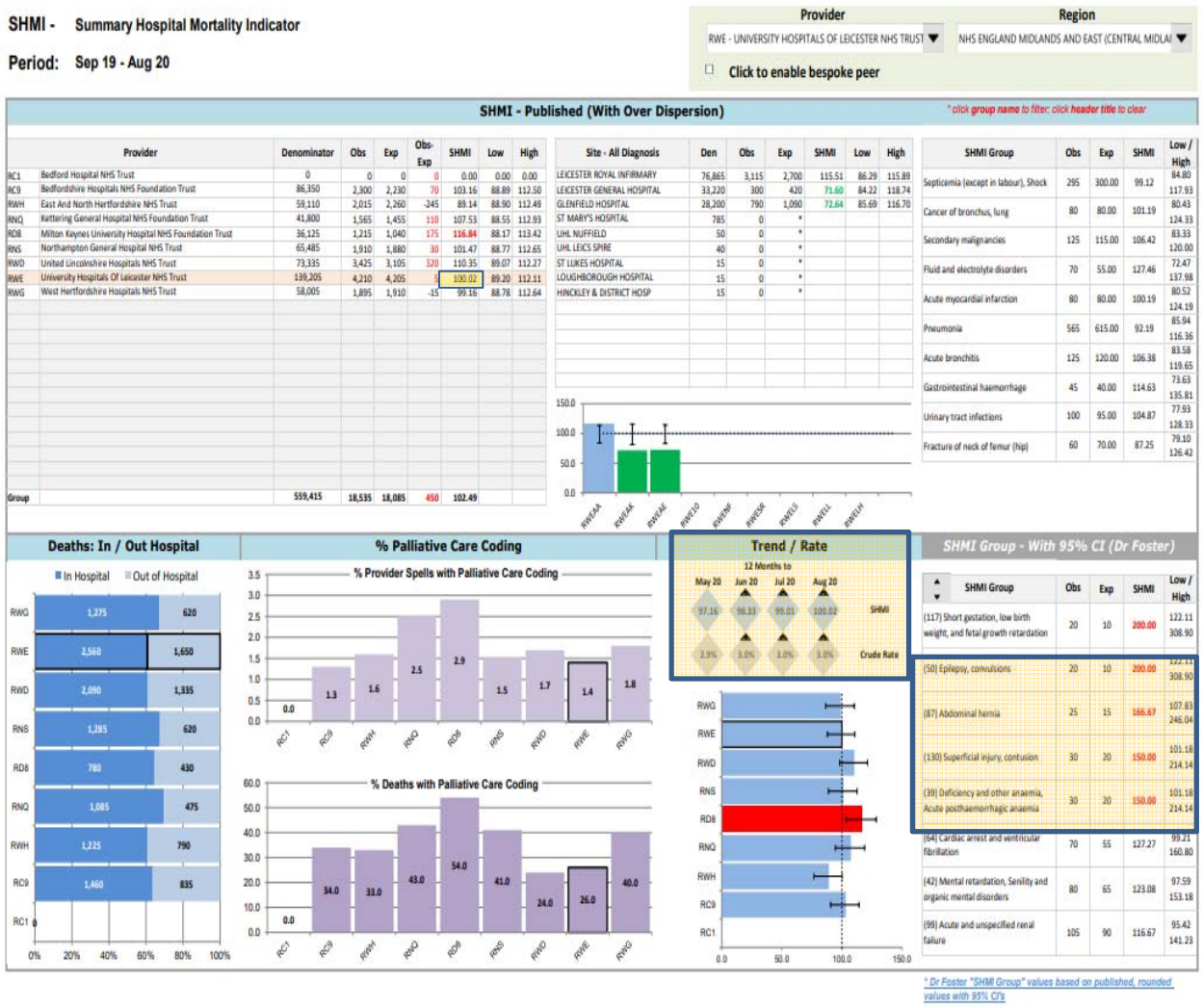


We have seen a steady increase in our SHMI for each 'Rolling 12 month' period since the Jan to Dec 19 SHMI was published. The latest SHMI for Oct 19 to Sept 20 is due to be published later in February and remains at 100 (within expected).

All COVID activity and deaths are excluded from the SHMI dataset (both where COVID ICD code used or COVID on the Death Certificate)

It should be noted that the latest SHMI does not take into account the recent increase in crude mortality.

SHMI Summary – (Dr Foster Analysis)



DFI have reviewed our latest published SHMI data (Sept 19 to Aug 20).

All of the 10 diagnosis groups with a 'published SHMI value' are 'within expected'.

There has been a drop in number of patients with a palliative care code during this period (Note: Palliative care coding not included in the SHMI methodology but is within DFI's HSMR and SMR)

Deaths within these diagnosis groups are being cross referenced with our Learning from Deaths data

HSMR:
Hospital Standardised Mortality Ratio

HSMR is risk adjusted mortality where patients die in hospital (either in UHL or if transferred directly to another NHS hospital trust) **over a 12 month period within 56 diagnostic groups***
(which contribute to 80% of in-hospital deaths).

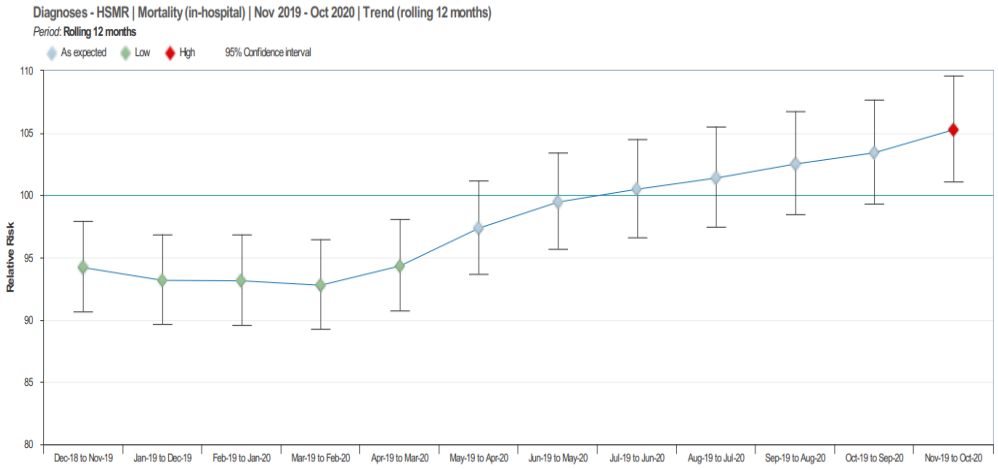
The HSMR methodology was developed by the Dr Foster Unit at Imperial College (DFI) and is used as by the CQC as part of their assessment process

HSMR Trends (October 20)

The latest DFI HSMR (105.3) covers the 12 months Nov 19 to Oct 20 and is now higher than expected. This increase appears to be due to a significant fall in activity & change in case-mix from March 20.

The HSMR differs from the SHMI in that it includes COVID activity and deaths where COVID is a secondary diagnosis . Also, unlike the SHMI, the HSMR will not exclude cases where COVID is recorded on the Death Certificate (unless activity coded as COVID)

Rolling 12 month HSMR



Monthly HSMR

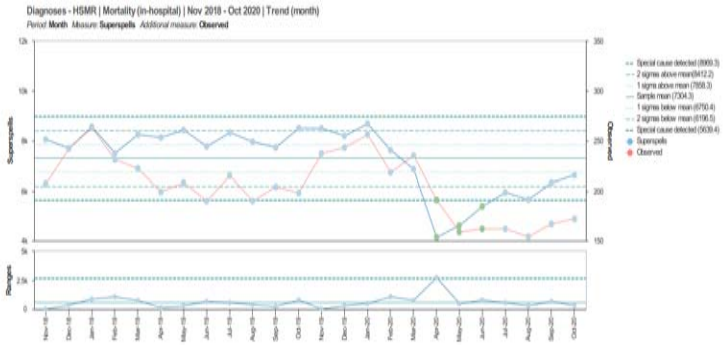
Basket: **HSMR** Metric: **Mortality (in-hospital)** Time period: **Last available 24 months**

Patients: **89,963** Superspells: **175,304 (194.9)** First / Last: **Nov 2018 / Oct 2020** Deaths: **4,925 (2.8%)** LOS: **5.6**

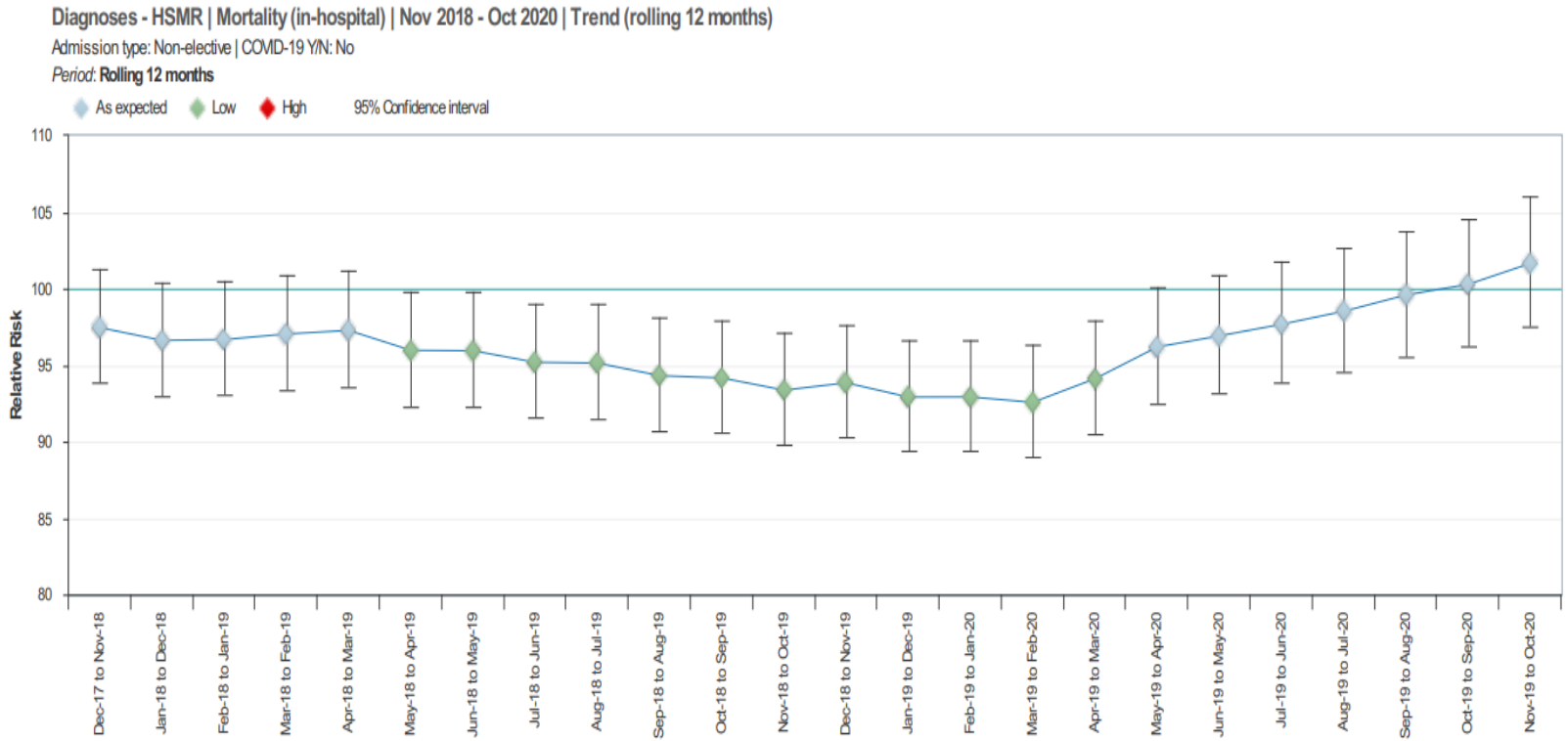
Expected: **4978.5 (2.8%)** O-E: **-53.5 (-0.0%)** Relative Risk: **98.9 (96.2â€"101.7)** Model: **Month: Jul 2020** C-Statistic: **Multiple**

Trend (month)	Superspells	% of All	Spells	Observed	Crude rate (%)	Expected	Expected rate (%)	Observed-expected	Relative risk	95% lower confidence limit	95% upper confidence limit
All	175,304	100.0%	175,882	4,925	2.8%	4978.5	2.8%	-53.5	98.9	96.2	101.7
Nov-18	8,046	4.6%	8,068	207	2.6%	222.1	2.8%	-15.1	93.2	81.0	106.8
Dec-18	7,688	4.4%	7,720	242	3.1%	248.5	3.2%	-6.5	97.4	85.5	110.4
Jan-19	8,552	4.9%	8,568	263	3.1%	281.9	3.3%	-18.9	93.3	82.3	105.3
Feb-19	7,492	4.3%	7,526	231	3.1%	229.1	3.1%	1.9	100.8	88.2	114.7
Mar-19	8,241	4.7%	8,278	222	2.7%	245.9	3.0%	-23.9	90.3	78.8	103.0
Apr-19	8,124	4.6%	8,149	199	2.4%	227.6	2.8%	-28.6	87.4	75.7	100.5
May-19	8,420	4.8%	8,448	208	2.5%	224.8	2.7%	-16.8	92.5	80.4	106.0
Jun-19	7,762	4.4%	7,786	190	2.4%	191.9	2.5%	-1.9	99.0	85.5	114.2
Jul-19	8,321	4.7%	8,350	215	2.6%	213.9	2.6%	1.1	100.5	87.5	114.9
Aug-19	7,951	4.5%	7,968	190	2.4%	214.3	2.7%	-24.3	88.7	76.5	102.2
Sep-19	7,724	4.4%	7,751	204	2.6%	208.2	2.7%	-4.2	98.0	85.0	112.4
Oct-19	8,496	4.8%	8,530	198	2.3%	232.3	2.7%	-34.3	85.2	73.8	98.0
Nov-19	8,488	4.8%	8,508	237	2.8%	241.9	2.8%	-4.9	98.0	85.9	111.3
Dec-19	8,190	4.7%	8,218	243	3.0%	277.5	3.4%	-34.5	87.6	76.9	99.3
Jan-20	8,673	4.9%	8,696	256	3.0%	276.7	3.2%	-20.7	92.5	81.5	104.6
Feb-20	7,614	4.3%	7,647	218	2.9%	225.5	3.0%	-7.5	96.7	84.3	110.4
Mar-20	6,853	3.9%	6,890	235	3.4%	213.4	3.1%	21.6	110.1	96.5	125.2
Apr-20	4,140	2.4%	4,154	191	4.6%	132.3	3.2%	58.7	144.4	124.7	166.4
May-20	4,614	2.6%	4,626	159	3.4%	120.5	2.6%	38.5	131.9	112.2	154.1
Jun-20	5,385	3.1%	5,406	162	3.0%	138.7	2.6%	23.3	116.8	99.5	136.2
Jul-20	5,938	3.4%	5,951	162	2.7%	141.1	2.4%	20.9	114.8	97.8	133.9
Aug-20	5,656	3.2%	5,668	154	2.7%	150.8	2.7%	3.2	102.1	86.6	119.6
Sep-20	6,316	3.6%	6,336	167	2.6%	151.4	2.4%	15.6	110.3	94.2	128.3
Oct-20	6,620	3.8%	6,640	172	2.6%	168.2	2.5%	3.8	102.3	87.5	118.7

Activity / Observed Mortality.



UHL's Non-elective HSMR (excluding COVID)



When COVID activity is removed from the HSMR, UHL's Relative Risk has still increased but is no longer above expected.

Euclidean Peer Group

Background

The Covid-19 pandemic has changed both the cohort of patients and activity that hospitals across the country have seen. This has raised concerns over the impact of the pandemic on mortality indicators (e.g. the HSMR). To aid the interpretation of mortality indicators over the period we have created peer groups of trusts that have seen a similar cohort of patients, have had a similar number of Covid-19 spells and have similar baseline capacity.

Methodology

Variable Selection

A set of variables thought to be important determinants of the impact faced by a trust over the pandemic were selected for the analysis. These variables are related to casemix, Covid-19 activity and trust baseline capacity (Table 1).

Peer Group Selection

Principal Component Analysis (PCA), a commonly used dimension reduction technique, was conducted to help minimise issues related to including multiple highly correlated variables. This method yields a new set of variables known as principal components (PCs). These PCs were used to calculate the Euclidean distance between trusts. Peers were then allocated to each trust based on the Euclidean distance between them.

Cut-off Distance

The 10th percentile of all calculated distances was deemed a 'cut-off' to identify trusts close enough to be classed as peers. Trusts that were a distance away from each other lower than the cut-off distance were labelled 'true peers'. In cases where a trust was allocated less than 10 peers based on this cut-off, the next closest trusts were added to their peer group. The percentile which each distance falls into can be used as an indicator of how far a peer, which did not meet the cut-off criteria, is away from the provider.

Table 1. Variables selected to compare trusts and the time period over which they were measured.

Variable	Details	Time period
Age	Proportion of patients 65+	P
Sex	Proportion of male patients	P
Deprivation	Proportion of patients in the three most deprived deciles (IMD)	P
Ethnicity	Proportion of BAME patients	P
Frailty	Proportion of frail patients (According to Global Frailty Index flag: 'IsFrail = 1')	P
Baseline comorbidities	Proportion of patients who have at least 1 comorbidity (from list of high risk conditions)	P
Covid-19 Spells	Number of spells with U07.1/ U07.2	P
Covid-19 spells which included critical care	Number of spells including both Covid-19 and a critical care episode over the pandemic period	P
Bed capacity at baseline	Number of General and Acute beds	LQ
Critical Care capacity at baseline	Number of Critical Care beds	LQ
Staff at baseline	Staff to bed ratio	LQ
Urban/ Rural	Proportion of urban patients	LQ
Trust volume	Average monthly volume the trust over the same period last year	PY
Admission method	Average proportion of elective admissions at the trust over the same period last year	PY

Time Period Key: P = Pandemic affected months (1 March 2020 – 31 May 2020)
LQ = Last unaffected quarter (1 October 2019 – 31 December 2019)
PY = Pandemic affected months in the previous year (1 March 2019 – 31 May 2019)

Peer group selection

Provider	Peer Name	PeerNumber	Percentile	Peer Ord
University Hospitals Of Leicester NHS Trust (RWE)	Nottingham University Hospitals NHS Trust (RX1)	Peer 1	True Peer	1
University Hospitals Of Leicester NHS Trust (RWE)	King's College Hospital NHS Foundation Trust (RJZ)	Peer 2	True Peer	2
University Hospitals Of Leicester NHS Trust (RWE)	Leeds Teaching Hospitals NHS Trust (RR8)	Peer 3	True Peer	3
University Hospitals Of Leicester NHS Trust (RWE)	Mid and South Essex NHS Foundation Trust (RAJ)	Peer 4	20	4
University Hospitals Of Leicester NHS Trust (RWE)	University Hospitals Of North Midlands NHS Trust (RJE)	Peer 5	20	5
University Hospitals Of Leicester NHS Trust (RWE)	Sheffield Teaching Hospitals NHS Foundation Trust (RHQ)	Peer 6	20	6
University Hospitals Of Leicester NHS Trust (RWE)	University Hospitals Of Derby and Burton NHS Foundation Trust (R	Peer 7	30	7
University Hospitals Of Leicester NHS Trust (RWE)	Manchester University NHS Foundation Trust (R0A)	Peer 8	30	8
University Hospitals Of Leicester NHS Trust (RWE)	Royal Free London NHS Foundation Trust (RAL)	Peer 9	30	9
University Hospitals Of Leicester NHS Trust (RWE)	Frimley Health NHS Foundation Trust (RDU)	Peer 10	30	10

Covid-19 Peer Groups

This table provides the 'Covid-19 Peer Groups' allocated to each provider.

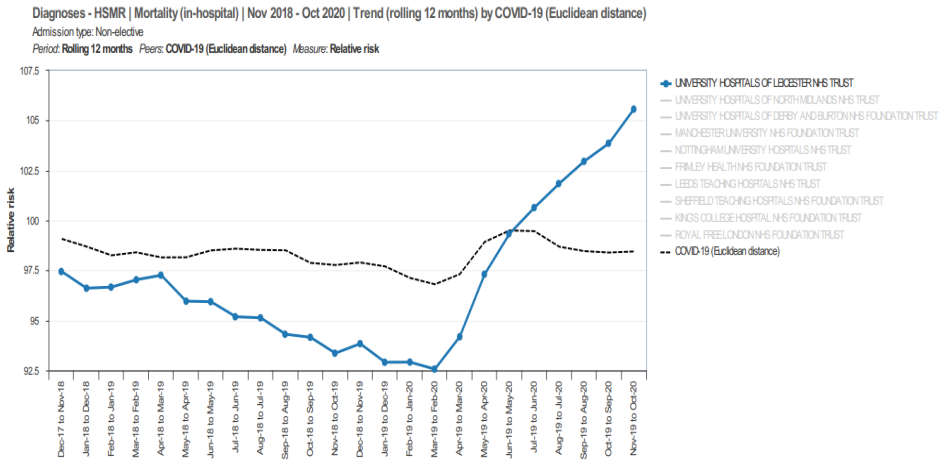
Peers have been allocated based on the Euclidean distance between trusts which was calculated from a set of variables chosen to compare them. The 10th percentile of all of the calculated Euclidean distances was chosen as the 'cut-off' point and trusts which are a distance away from each other lower than the cut-off distance have been called 'true peers'.

If providers have more than 10 true peers, all have been included in their peer group in order of how close the peers are (Peer 1 being the closest to the provider). Where trusts did not have 10 true peers the next closest available trusts have been included in their peer group. The 'Percentile' column of the table can be used as an indicator of how far a peer, which did not meet the cut-off criteria, is away from the provider.

Explanation of Percentile column values:

- 'True Peer' - distance from provider to peer is within the lowest 10% of all distances.
- '20' - distance from provider to peer is between the 10th and 20th percentiles of all distances.
- '40' - distance from provider to peer is between the 30th and 40th percentiles of all distances.

Non-elective HSMR Trend V COVID Peers



September 2020 data (Dec 20 refresh)

Non-elective HSMR Superspells	COVID-19 (Euclidean distance)		UNIVERSITY HOSPITALS OF LEICESTER NHS TRUST	
Trend (month)	Superspells	Reduction	Superspells	Reduction
Jan-19	35361		4597	
Feb-19	31651		3928	
Mar-19	33615		4297	
Apr-19	33050		4274	
May-19	33938		4283	
Jun-19	31991		3936	
Jul-19	33442		4189	
Aug-19	32059		4058	
Sep-19	31633		3981	
Oct-19	35001		4488	
Nov-19	34926		4541	
Dec-19	35811		4668	
Jan-20	36088		4748	
Feb-20	31534		4055	
Mar-20	28828		3759	
Apr-20	18636	44%	2633	38%
May-20	22844	33%	2749	36%
Jun-20	25208	21%	3142	20%
Jul-20	27838	17%	3399	19%
Aug-20	26763	17%	3227	20%
Sep-20	25835	18%	3445	13%
		25%		25%

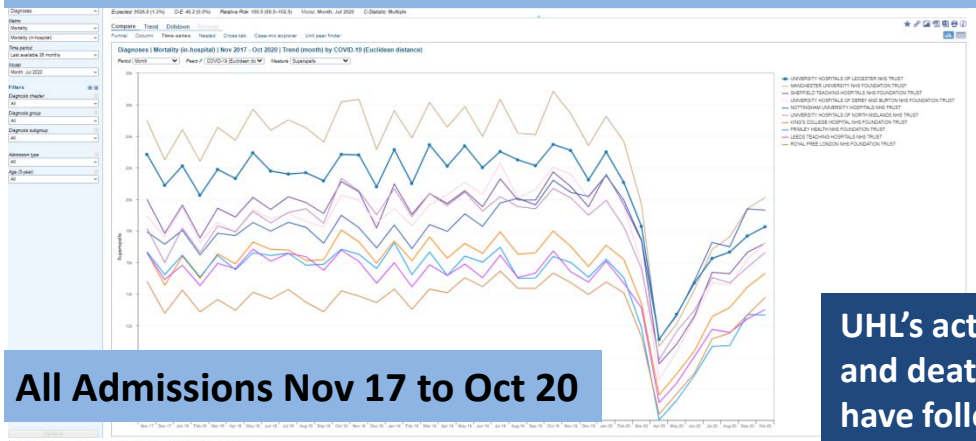
Non-elective HSMR Mortality	COVID-19 (Euclidean distance)		UNIVERSITY HOSPITALS OF LEICESTER NHS TRUST	
Trend (month)	Observed	Reduction	Observed	Reduction
Jan-19	2307		256	
Feb-19	2001		228	
Mar-19	1950		214	
Apr-19	1850		195	
May-19	1873		208	
Jun-19	1738		183	
Jul-19	1765		206	
Aug-19	1793		187	
Sep-19	1722		201	
Oct-19	1911		198	
Nov-19	1964		233	
Dec-19	2181		240	
Jan-20	2261		252	
Feb-20	1954		216	
Mar-20	2016		229	
Apr-20	1614	13%	211	-8%
May-20	1342	28%	159	24%
Jun-20	1356	22%	162	11%
Jul-20	1282	27%	159	23%
Aug-20	1392	22%	150	20%
Sep-20	1291	25%	157	22%
		23%		15%

The Trust's HSMR has increased at a quicker rate than overall Peer during the COVID pandemic. This in part will relate to the fall in activity where the Trust has matched the national / peer group reduction, however observed mortality within the HSMR basket fell at a slower rate.

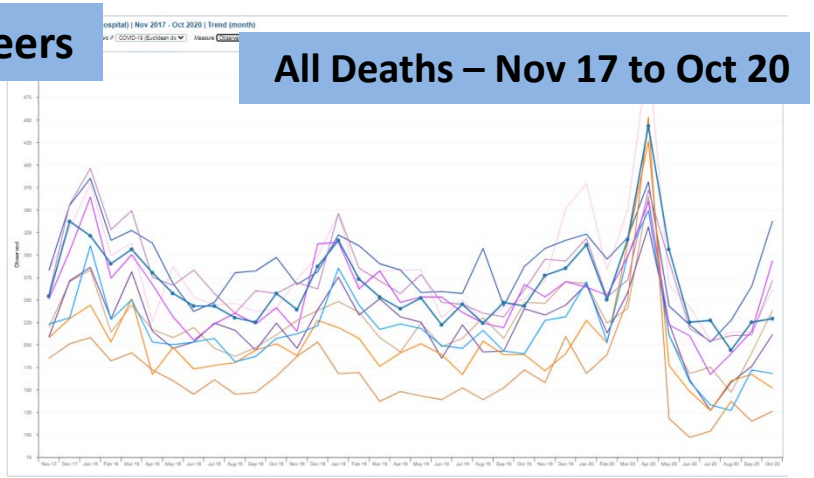
Within the Non-Elective HSMR cohort across the Euclidean peer group there was a 23% reduction in mortality across the 7 months to September where UHL saw only a 15% fall.

**A similar pattern is apparent across the full HSMR basket.*

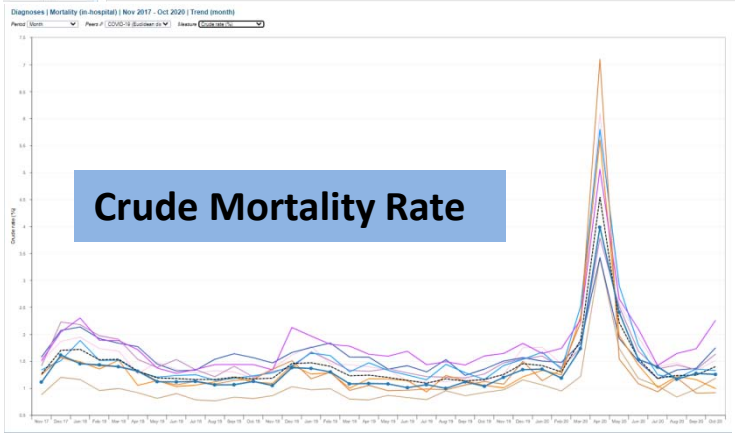
UHL's Activity and Deaths compared with Euclidean Peers



All Admissions Nov 17 to Oct 20

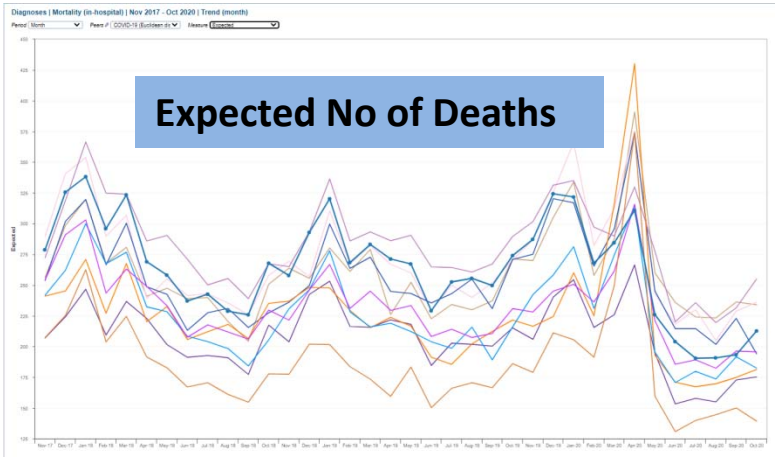


All Deaths – Nov 17 to Oct 20

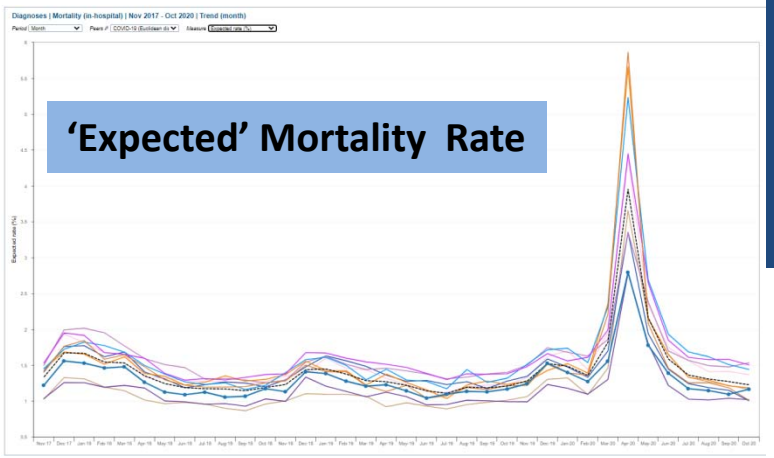


Crude Mortality Rate

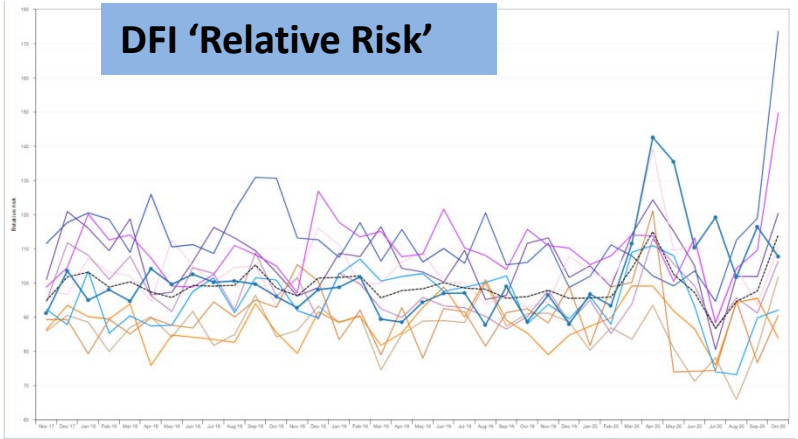
UHL's activity and deaths have followed a similar pattern to Euclidean Peer Trusts and our crude mortality is one of the lowest of our Peers but our 'expected' mortality rate is lower than all our Peers so we have a higher Relative Risk



Expected No of Deaths



'Expected' Mortality Rate



DFI 'Relative Risk'

COVID-19 Activity and Mortality – Nov 19 to Oct 20

COVID-19 (Euclidean distance) ***COVID-19 PRIMARY DIAGNOSIS***	Superspells	Spells	Observed	Crude rate (%)
All	14207	14345	3575	25.16
UNIVERSITY HOSPITALS OF LEICESTER NHS TRUST	1871	1875	428	22.88
ROYAL FREE LONDON NHS FOUNDATION TRUST	1694	1707	443	26.15
MANCHESTER UNIVERSITY NHS FOUNDATION TRUST	1634	1710	379	23.19
KING'S COLLEGE HOSPITAL NHS FOUNDATION TRUST	1580	1587	379	23.99
UNIVERSITY HOSPITALS OF DERBY AND BURTON NHS FOUNDATION TRUST	1418	1433	454	32.02
LEEDS TEACHING HOSPITALS NHS TRUST	1361	1363	375	27.55
FRIMLEY HEALTH NHS FOUNDATION TRUST	1257	1265	313	24.90
SHEFFIELD TEACHING HOSPITALS NHS FOUNDATION TRUST	1236	1238	242	19.58
NOTTINGHAM UNIVERSITY HOSPITALS NHS TRUST	1213	1221	285	23.50
UNIVERSITY HOSPITALS OF NORTH MIDLANDS NHS TRUST	943	946	277	29.37

COVID-19 (PRIMARY OR SECONDARY)	COVID-19 (Euclidean distance)	Superspells	Spells	Observed	Crude rate (%)
Yes	UNIVERSITY HOSPITALS OF LEICESTER NHS TRUST	2853	2883	586	20.54
	MANCHESTER UNIVERSITY NHS FOUNDATION TRUST	2504	2686	543	21.69
	KING'S COLLEGE HOSPITAL NHS FOUNDATION TRUST	2331	2352	508	21.79
	ROYAL FREE LONDON NHS FOUNDATION TRUST	2270	2309	549	24.19
	UNIVERSITY HOSPITALS OF DERBY AND BURTON NHS FOUNDATION TRUST	2139	2236	644	30.11
	LEEDS TEACHING HOSPITALS NHS TRUST	2072	2086	467	22.54
	NOTTINGHAM UNIVERSITY HOSPITALS NHS TRUST	1845	1875	427	23.14
	SHEFFIELD TEACHING HOSPITALS NHS FOUNDATION TRUST	1822	1828	368	20.20
	FRIMLEY HEALTH NHS FOUNDATION TRUST	1755	1796	432	24.62
	UNIVERSITY HOSPITALS OF NORTH MIDLANDS NHS TRUST	1494	1511	398	26.64

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UHL's COVID crude mortality is below all our Peers

APPENDIX 2

Learning From the Deaths of Patients in our Care

20/21 - Quarters 1 to 3

February 2021

‘Deaths covered by UHL’s “Learning from the Death” process 2020/2021 Quarters 1 to 3

DEATHS BY HOSPITAL SITE			
	Q1	Q2	Q3
LRI	731	473	739
GH	197	148	221
LGH	95	40	59
All Sites	**1023**	**661**	**1019**

ADULT vs CHILD vs NEONATE			
	Q1	Q2	Q3
ADULT	995	633	997
CHILD	9	9	13
NEONATES/ PERINATAL	19	19	9
All	**1023**	**661**	**1019**

There were 557 deaths in January 2021

- 518 InPatient Deaths
- 39 Emergency Department Deaths

Cause of Death or Coroner Referral Discussed with the Medical Examiner? Quarters 1 to 3

	Q1	Q2	Q3
ADULT DEATHS	995	633	997
ME discussed CoD	986	631	997
CHILD DEATHS	9	9	13
ME discussed CoD	2	7	9
NEONATAL DEATHS	19	19	9
ME discussed CoD	2	6	5
All Deaths	1023	661	1019
ME Disc CoD - ALL	990	644	1011
% of All Discussed	97%	97%	99%

There continues to be an increased number of child and neonatal deaths discussed with the Medical Examiner and this process is being supported by both the Perinatal Mortality Lead (who is also a Medical Examiner) and the recently recruited Paediatric Medical Examiner Secondee

ME Screening of Case Notes (Adult Deaths) – Quarters 1 to 3

Screened	Q1	Q2	Q3
ADULT	**995**	633	997
Screened	**994**	**627**	**915**
In Progress / Data not inputted			**79**
Not Screened		**6**	**3**
% Screened (to date)	**99.9%**	**99%**	**92%**

Due to the increased numbers of deaths in December and January there has been a delay with completing screening of case notes and a further delay with inputting screening data.

Currently paediatric and neonatal deaths are not subject to the same level of Medical Examiner screening as all deaths are automatically referred to the Child Death / Perinatal Review process

Medical Examiner Activity in Quarter 3

- Primary Care Medical Examiner Pilot
- Paediatric Medical Examiner Secondment – Child Death Review process
- Glenfield and LGH Medical Examiner MCCD discussions and Screening Process
- Collaborative working with the Coroner's Office to re-establish the on-line eReferral process
- Ongoing Out of Hours Service to support Urgent Releases over Christmas and New Year
- Medical Examiner presence at the LRI on the New Year Bank Holiday
- Adapting the Medical Examiner process for COVID wards and ITUs
- Continued completion of COVID Death Notification Forms and informing bereaved of reporting requirements
- Review of deaths of Health Care Workers for reporting to the Regional ME

Speaking to the Bereaved – Q1 to Q3 (Adult Deaths only)

	Q1	Q2	Q3
ADULT DEATHS	995	633	997
ME spoke to the Bereaved	827	463	819
Bereaved not spoken to	94	102	57
% ME spoke to Bereaved (to date)	90%	82%	82%
N/A (Taken by Coroner)	72	68	68
Data not yet inputted			79

Where Medical Examiners have not been able to contact the bereaved, either because of capacity or where no response, we have been asking the Bereavement Nurses to make earlier contact.

The Bereavement Nurses also make contact with all families where the death has been taken for further investigation by the Coroner, to support with any bereavement needs

Bereavement Nurse Follow up – Adult deaths

	Quarter 1		Quarter 2		Quarter 3
Adult Deaths	995		633		997
Requested BSS telephone follow up	588		352		661
%	58%		56%		66%
Verbal contact made where requested	449		272		415
Unable to contact	139		80		95
F/up in progress*					149
%	76%		77%		77% (to date)
All verbal contacts**	491		302		481 (to date)

All families are offered follow up contact by the Bereavement Nurses at the time of issuing of death certification/referral to the Coroner

* Families of patients who died in December will be contacted in February (ie 6 to 8 weeks after the death)

** Some families may have initially declined BSS follow up but subsequently either contacted the Service or the Bereavement Nurses were asked to contact the family by the Medical Examiner

Bereavement Support - Signposting

Signposting to Bereavement Counselling Organisations?					
	Quarter 1		Quarter 2		Quarter 3
Yes	**151**		**56**		**105**

In addition to the previous Bereavement and Counselling Services, the Bereavement Nurses have been able to signpost bereaved families to the following organisations who have specifically offered support during the COVID pandemic

- Rainbows (COVID
- Hospice Hope (chronic long term illness- COVID period)
- National Bereavement Partnership (COVID period- all deaths)
- Christian Counselling Service (all deaths during the COVID period- non religeous)
- NHS Bereavement support line (COVID period- for NHS/social care staff- all deaths)

Feedback from the Bereaved

Feedback about Overall Care to the Medical Examiner	Q1	Q2	Q3
Complimentary about Care	16%	20%	22%
Generally Happy/No concerns	69%	64%	62%
Concern	14%	16%	16%
ALL SPOKEN TO	827	463	819
Feedback about End of Life Care to the Bereavement Nurses	**Q1**	**Q2**	**Q3**
Good / Very Good / Excellent	60%	51%	64%
Satisfactory /Adequate	8%	9%	10%
Poor / Very Poor	4%	7%	5%
Unable to Say	28%	33%	21%
ALL SPOKEN TO	491	302	481

- Reassuringly despite the increased pressures teams have been under during Quarter 3, there was a slightly higher proportion of relatives who felt end of life care was good or very good and a smaller proportion feeling it was poor or very poor. In respect of overall care, feedback has been consistent across all 3 quarters.
- Most concerns (raised with both the MEs and the Bereavement Nurses) were around communication and visiting – difficulty in getting through to the ward, lack of regular updates, not aware that patient was deteriorating, ReSPECT discussions, breaking bad news, not being able to visit and then when allowed, too late as patient died before possible.

Types of Reviews Requested / Feedback – Adult Deaths*

Further Review?	Q1	% of all Deaths		Q2	% of all Deaths		Q3	% of all Deaths
SJR	79	8%		77	12%		70	8%
Clinical Review	55	6%		74	12%		76	8%
Investigation							1	0.1%
PST F/Up	5	1%		3	0.5%		6	1%
Feedback	66	7%		49	8%		103	11%
BSS Led Review	18	4%		8	4%		12	3%
Theme	14	1%		7	1%		32	3%
tbc (post screening)							64	
All	237	26%		218	37%		364	34%

*All Child/Neonatal Deaths will be subject to full review or investigation either as part of UHL's mortality review process or the LLR Child Death Overview Panel (CDOP)

Reason for Structured Judgement Review or Investigation (All Deaths)

Further Review?	Q1		Q2		Q3
1. ME	37		31		24
2. Rels	3		5		5
3. Child	28		28		22
4. El Proc	4		8		12
5. LD	9		5		9
6. SMI	14		11		11
8. Specialty	12		13		10
9. BSS			1		
10. PST			1		
All	107		103		93

Investigations will include child deaths subject to review by CDOP as well as any deaths subject to a Patient Safety Incident investigation or Safeguarding Case Review

PROGRESS WITH SJR / INVESTIGATION COMPLETION

	Q1	Q2
Adult SJR/Invx	**79**	**80**
In Progress	14	26
Completed	**65**	**54**
Child SJR/Invx	**9**	**8**
In Progress	3	3
Completed	**6**	7
Neonate SJR/Invx	**19**	**20**
In Progress	4	9
Completed	**15**	11
All SJRS / Investigations	**107**	**103**
% Completed	**80%**	**70%**

Although we have not met our internal standard of 75% of SJRs being completed within 4 months of death and 100% within 6 months, there has been good progress made by all Specialties to maintain their M&M process during the Pandemic.

OUTSTANDING SJRS FOR Q1 & Q2 (ADULTS)	
CHUGGS	**10**
Gastro	3
Haem & BMT	2
HPB & Gen Surg LGH	2
Oncology	3
ESM	**15**
Acute Med	4
Em Dept	1
Geriatrics	4
IDU	1
Met Medicine	5
ITAPS	**1**
GH ECMO & CC	1
MSS	**2**
MaxFax	1
ENT	1
RRCV	**12**
Cardiac Surgery	10
Cardiology	1
Vascular	1

Death Classification

	Q1	Q2
Death thought to be more likely than not due to a problem in care?	**1**	**1**

There have been 2 deaths to date in 2020/21 initially thought to be due to a problem in care. Both were discussed at MRC and referred to the Patient Safety Team to confirm if need further investigation.

Problems in care related to interpretation of Imaging for one case and commencement of Non Invasive Ventilation with Cross Site Transfer for the other.

Updates on learning and actions will be reported to the March MRC.

Learning from Deaths - Emerging themes in 20/21

- Two main areas of concern raised by bereaved relatives are around difficulties with communication and getting updates about the patient's condition plus visiting – and there have been mixed messages given to families as to who can visit when and whether they have to self isolate or not
- Another theme is previous discharge - likely to be a compounded by the above which affect relatives' understanding of the patient's condition or needs
- In Quarter 3, one of the concerns frequently raised was that the patient 'caught COVID whilst in hospital' and for several families, this was after the patient was discharged home so won't meet the recognised 'Hospital Acquired' criteria
- Although almost all cases screened by the Medical Examiners have had a ReSPECT form completed, one of the regular areas of feedback has been about the quality of completion – specifically ensuring it is clear who was involved in the discussion.
- Cross site transfers, Inter-specialty liaison and monitoring/recognition of end of life care and Investigations/Acting on Results continue to be areas where the MEs request further review by the clinical team
- Review of 'management / treatment plans' was another reason MEs referred back to the Specialty but there was no particular subtheme or clinical area
- Communication with patients and relatives about prognosis, imminence of death and ceiling of treatment has a key area of learning identified from Specialty reviews

Actions and Improvements

- One of the main actions continues to be feeding back identified learning to individual clinicians and the team as a whole
- Discussions have been held with Radiology and Anaesthetics about developing a pathway for patients requiring sedation or general anaesthetic for imaging, particularly patients with a Learning Disability
- eReferrals have been set up on NerveCentre to support improved communication between Specialties
- NIV Education within the Emergency Department
- Review and awareness raising of Communication and Visiting Guidelines

Next Steps

- Address the backlog of data inputting in order to meet internal and external reporting requirements
- Ensure all requests for further review sent out and follow up as appropriate
- Review ongoing requirements to maintain the Paediatric ME and Child Death Review processes
- Liaise with the Regional ME to confirm national plans for Primary Care ME process
- Recruit Medical Examiner Officers to address staffing vacancies

UHL perinatal mortality

Quarterly update, January 2021

1. UHL perinatal mortality figures

The reports provided by MBRRACE-UK analyse data almost 2 years in retrospect. We endeavour to analyse the perinatal mortality data prospectively to identify any concerning themes/trends.

	Total SB	Corrected Stillbirths	SB rate	Total NND	Corrected Neonatal deaths	NND rate
2009	86			48		
2010	77			49		
2011	63			43		
2012	70	65		51		
2013	47	45	4.55	50	27	2.65
2014	56	51	4.59	46	23	2.37
2015	52	43	4.23	50	29	2.98
2016	55	47	4.25	52	25	2.39
2017	43	37	4.05	39	21	2.18
2018	33	26	3.48	56	28	2.69
2019	34	29		46	24	
2020	48	40*		45	24**	

The stillbirth and neonatal deaths rates provided are the stabilised and adjusted rates provided by MBRRACE-UK, which allow for population size, deprivation, ethnicity and multiple births. They cannot be calculated locally.

* Predicted number of stillbirths after corrections for TOP

** Predicted number of neonatal deaths after corrections for <24 weeks and termination of pregnancy. This number is likely to be a slight underestimate, as there may be babies who were born in Leicester and died elsewhere to add to this figure.

Colour shading represents comparison to our peer trusts as provided by MBRRACE-UK. They have changed the definitions of the traffic-light colour codes in comparison with previous years, in an attempt to be aspirational and encourage trusts to further improve their mortality rates. So yellow is now 5-15% better than the peer group average (previously 0-10% better), and orange is within 5% better or worse (previously 0-10% worse). Our peer group of trusts (>6000 births with neonatal surgical facility) have a higher stillbirth and neonatal death rate than the national average due to the complexity of cases.

2018 Perinatal Mortality

The 2018 UHL MBRRACE-UK Perinatal Mortality report has now been released and the Executive Summary and Local Review are reported separately.

2019 Perinatal Mortality

The 2019 data has now been verified with MBRRACE-UK, although the report analysing the data is not expected to be published until the end of 2021. However the crude figures do not give any cause for concern.

2020 Perinatal Mortality

The number of stillbirths in 2020 was significantly above that of the previous 2 years. An excess of approximately 10 stillbirths was noted in the first quarter of 2020, with a return to normal rates for the remainder of the year. The stillbirths from the first quarter were extensively reviewed, with themes around maternal diabetes, fetal growth restriction, advanced maternal age, and non-English speaking women identified. Not all of these issues were necessarily causally related to the stillbirths.

A detailed analysis of the January stillbirths was presented to the Mortality Review Committee in March 2020. Two cases were undergoing RCA and escalation as Serious Incidents (one was already escalated prior to the review and one as a consequence of the review).

The review of February/March stillbirths was presented to MRC in August 2020.

The COVID-19 pandemic resulted in significant changes to the maternity services from the end of March onwards. There was a reduction in face-to-face midwifery and obstetric contact, with telephone appointments being introduced. The ultrasound service was significantly reduced, with focus on the highest risk women. There was also cessation of the carbon monoxide monitoring which is used to support and promote smoking cessation strategies. The basis of all of these modifications was based on the RCOG guidance published at the time. A gradual increase in the ultrasound scanning service was introduced in October 2020, to improve detection of late onset fetal growth restriction. However at the present time we have still not been able to fully resume the ultrasound service, and have not fully implemented the scan schedule laid out in the Saving Babies Lives care bundle v2.

Whilst a small number of perinatal deaths may have had care adversely affected by the changes from the COVID pandemic, it is impossible to directly assign the cause of the death to the changes due to the limited ability of ultrasound to detect small babies, and the uncertainty of how women and staff would have behaved had the circumstances been different.

2. Perinatal Mortality Reviews

The summary report of the Perinatal Mortality Review Group for the quarter September to December 2020 is in appendix 1 and updated PMRG action log is in Appendix 2.

Perinatal mortality review tool and the Maternity Incentive Scheme

We achieved the standards required for Year 2 of the Maternity Incentive Scheme. Year 3 builds on these standards and increases the requirements for the reporting of perinatal deaths, and investigation using the Perinatal Mortality Review Tool. In particular, there is now a requirement to

start using the PMRT for babies born outside Leicester, who then die at UHL before 28 days of age, even when that death is not within maternity or neonatal services (e.g. in PICU or ECMO).

3. Saving Babies Lives Care Bundle version 2

Implementation of this care bundle was finalised in March 2020. This care bundle has 5 elements:

1. Smoking cessation
2. Fetal growth surveillance
3. Fetal movement monitoring
4. Intrapartum fetal monitoring
5. Preterm birth prevention

Implementation was due by the end of March 2021, but has been adversely affected by COVID-19 (elements 1 and 2).

4. Each Baby Counts and HSIB

Each Baby Counts has now closed, and eligible cases are instead reported to and investigated by HSIB. A small number of women have declined HSIB investigation.

5. Summary

- An excess of stillbirths in the first quarter of 2020 has impacted on our overall perinatal mortality rate for the year
- COVID-19 has had a minimal effect so far on our perinatal mortality rate
- Changes to practice due to COVID-19 are still in place, and will be lifted gradually over the coming weeks.
- The increased requirements for the use of the PMRT will require cross specialty working to embed its use for deaths outside maternity and neonatal services.

Appendix 1

University Hospitals of Leicester Perinatal Mortality Quarterly Report

October to December 2020

Deaths occurring in October to December 2020

Month	Stillbirths			Neonatal deaths (up to 28 days)		
	Total	**TOP**	**Corrected**	**Total**	**<24w/TOP**	**Corrected**
October	3	0	3	4	1	3
November	3	1	2	3	1	2
December	3	1	2	10	2	8
TOTAL	**9**	**2**	**7**	**17**	**4**	**13**

Five of the neonatal deaths were babies born outside Leicester. Four of them died in PICU/ECMO (one with trisomy 18, two from congenital diaphragmatic hernia, and one with a cardiac arrhythmia). The remaining outborn baby died on the neonatal unit after being transferred in from another unit with HIE after a cord prolapse at term.

Of the 12 neonatal deaths of inborn babies, three were booked for antenatal care outside Leicester, and the mothers transferred to UHL for delivery. Two babies died from a complex congenital heart defect (one returned to the base hospital for palliative care after assessment at Glenfield, but as the baby was born in Leicester will be counted on our statistics) and one from extreme prematurity.

There were only nine neonatal deaths of babies born at UHL to mothers booked at UHL. Four of these were previable (16-20 weeks) and two had lethal renal abnormalities. The remaining three babies died of complications of prematurity (24 and 27 weeks) and HIE (term baby, HSIB investigation underway).

Of the nine stillbirths, two were terminations of pregnancy for fetal anomaly (24 and 25 weeks). There were 2 babies with severe early onset fetal growth restriction, 2 placental abruptions with growth restricted babies, one baby with undiagnosed trisomy 21 and one 41w stillbirth being investigated by the HSIB. The remaining stillbirth was due to a maternal death at 29 weeks with SUDEP (sudden unexpected death in epilepsy) – the baby was stillborn at a perimortem Caesarean section which was carried out to try to facilitate maternal resuscitation.

Perinatal mortality review meetings held in October to December 2020

Review meetings were held on 16th October, 5th November, 20th November and 18th December.

Cases discussed were from April to July 2020.

16th October	1 SB, 2 ENND, 1 LNND and 1 infant death
5th November	1 ENND, 1 LNND
20th November	3 SB, 1 ENND and 1 infant death
18th December	3 SB, 3 ENND

None of the deaths were considered to be likely to have been due to issues with care.

Issues with care identified:

- Incorrect assessment of FGR risk (incorrectly put on scan pathway instead of SFH pathway)
- Second trimester GTT not offered or carried out in a woman with previous gestational diabetes (although her 3rd trimester GTT was normal).
- Misplotting of the GROW chart (though did not lead to issues with care, later scans were plotted correctly)
- Failure to send tissue for karyotype after a stillbirth

There was also significant debate around 2 further issues:

- The value (or otherwise) of very preterm delivery of a hydropic baby with congenital heart block
- The difficulty of stillbirth registration for non-English speaking families during the COVID-19 pandemic. The registrar of births and deaths will not use telephone interpreters, and therefore the unmarried father cannot be named on the certificate if a 3rd party has to undertake the registration on behalf of the family.

The issues with care were added to the rolling action plan (see appendix 2)

University Hospitals of Leicester NHS
NHS Trust
Caring at its best

Progress of actions arising from the Perinatal Mortality Meetings
Updated following the December 2020 meeting
Neonatal Seminar Room, LRI 13:30

Minute Reference	Action	Lead	By When	Progress Update	RAG status*
	None to action				

PMRT Reference	Action	Lead	By When	Progress Update	RAG Status*
PMRT Case ID 45203	(iv) The management of the baby in the first hour on the neonatal unit was not appropriate: **Review introduction of an early care guideline to provide standards of care for admission of an extremely premature baby. There is an EMODNN guideline which we are going to adapt within Leicester.**	Neonates	~~05/02/2019~~ ~~31/07/2019~~ ~~13/09/2019~~ ~~31/03/2020~~ 31/08/2020	Guideline currently under r/v – However the neonatal safety collaborative team are implementing a QI project on stabilisation and transfer of the premature infant. CH unable to attend the meeting in August – she has been emailed for an urgent response on the progress of the action Neo local project is covering one aspect of this – thermoregulation to avoid hypothermia in babies <32/40 as per NNAP standard. Jo Behrsin (JB) is reviewing the package currently in use East of England to see if practical for UHL. Mat Neo system level project is addressing appropriate location for stabilisation and delivery of premature infants. **RM** to email JC & JG to get a definitive progress update **Action completion delayed due to**	**5**

** Both numerical and colour keys are to be used in the RAG rating. If target dates are changed this must be shown using ~~strikethrough~~ so that the original date is still visible.*

RAG Status Key:	5	Complete	4	On Track	3	Some Delay – expected to be completed as planned	2	Significant Delay – unlikely to be completed as planned	1	Not yet commenced

PMRT Reference	Action	Lead	By When	Progress Update	RAG Status*
				clinical priorities during the Covid 19 pandemic **RM** D/W JB – this work is still ongoing **Completed** Reviewed with Dr Jo Behrsin The EMNODN guideline has not been adopted as yet, but all members of the neonatal team have online access to the guideline: Early Care of Neonates at Risk of Respiratory Distress Syndrome (C32/2018) Although the main focus of the guideline is respiratory, guidance is also given on the following areas: Antibiotics The use of caffeine Intravenous access and fluid management Umbilical lines Early hypoglycaemia Enteral and Parenteral Nutrition Indications for Echocardiography and Cranial Ultrasound	
EC3.12/18	Teaching on Prematurity – Early Care Bundle (Obs & NNU)	Neonates	~~31/03/2019~~ ~~31/07/2019~~ ~~31/08/2019~~ ~~31/03/2020~~ 31/08/2020	Although this action has been delayed as the previous 2 PMRP Meetings have not been quorate, only case reviews were completed. The maternity and neonatal safety collaborative work is completing a project in relation to early care of the neonate CH unable to attend the meeting in August – she has been emailed for an urgent response on the progress of the action This action directly links to my action on page 1. The teaching of bundle cannot happen until bundle is created.	**5**

** Both numerical and colour keys are to be used in the RAG rating. If target dates are changed this must be shown using ~~strikethrough~~ so that the original date is still visible.*

RAG Status Key:	5	Complete	4	On Track	3	Some Delay – expected to be completed as planned	2	Significant Delay – unlikely to be completed as planned	1	Not yet commenced

PMRT Reference	Action	Lead	By When	Progress Update	RAG Status*
				RM to email JC & JG to get a definitive progress update **Action completion delayed due to clinical priorities during the Covid 19 pandemic** **RM** D/W JB – this work is still ongoing **Completed** Teaching on Early Care in Prematurity for the medical staff is included in the Neonatal Teaching Programme (provided in each six month cycle - accessible in person and also online). The lead for this is Dr Jo Behrsin	
Action Resulting from the Stillbirth R/V Meeting – Feb 2020	Ultrasound scan scheduling issues **Update the UHL Fetal Surveillance Guideline to comply with Saving Babies Lives Care Bundle version 2, which will address all of the scheduling issues that occurred**	Fetal Growth Pathway guideline group	~~31st December 2020~~ 28 Feb 21	**Action completion delayed due to clinical priorities during the Covid 19 pandemic** **Completed – June 2020** But the FS Guideline has been superseded due to the situation with Covid 19 –**Jan 21 update** Disc at PMOSG and implementation due to commence Feb 21	**4**
Action Resulting from the Stillbirth R/V Meeting – Feb 2020	Ultrasound scan reporting and action issues **Update the UHL Obstetric Ultrasound scan guideline to clarify the reporting and action issues, and disseminate to sonographers/obstetricians**	Fetal Growth Pathway guideline group	~~31st December 2020~~ 28 Feb 21	**Action completion delayed due to clinical priorities during the Covid 19 pandemic** **Completed - June 2020** But the FS Guideline has been superseded due to the situation with Covid 19 –	**2**

** Both numerical and colour keys are to be used in the RAG rating. If target dates are changed this must be shown using ~~strikethrough~~ so that the original date is still visible.*

RAG Status Key:	5	Complete	4	On Track	3	Some Delay – expected to be completed as planned	2	Significant Delay – unlikely to be completed as planned	1	Not yet commenced

PMRT Reference	Action	Lead	By When	Progress Update	RAG Status*
				Jan 21 update Disc at PMOSG and implementation due to commence Feb 21	
C6.03/20	(i) The parents were not told that a review of their care and that of their baby is being carried out (ii) The parents' perspectives and any concerns about their care and the care of their baby have not been sought **A letter has been designed and will be given to bereaved parents on NNU explaining the PMRT review process**	RM	30/05/2020 Deferred to End Feb 21	**Jan 21** Update sought from Neonatal PMRG lead	**2**
C7.05/20	(ii) Neonatal staff were predicted to be required when the baby was born neonatal staff attended but the staff called were not of an appropriate grade **To be discussed at neonatal consultant level**	NNU Cons	31/07/2020	**Completed** PMRT report has been forwarded	**5**
C8.05/20	(i) This mother had a risk factor(s) for having a growth restricted baby but serial scans were not performed at correct times/intervals **To write learning bulletin and send to all staff**	PM	31/07/2020	**Completed**	**5**
C5.08/20	(i) This mother had preterm labour or had preterm pre-labour rupture of membranes during her pregnancy which was not managed according to national or local guidelines **Review preterm labour guideline and ensure awareness of guidance at limits of viability. Arrange teaching session on preterm labour around the limits of viability**	PM HA	~~31/12/2020~~ 28/02/21	**Jan 21 Update** Teaching session arranged and review in progress	**4**

** Both numerical and colour keys are to be used in the RAG rating. If target dates are changed this must be shown using ~~strikethrough~~ so that the original date is still visible.*

RAG Status Key:	5	Complete	4	On Track	3	Some Delay – expected to be completed as planned	2	Significant Delay – unlikely to be completed as planned	1	Not yet commenced

PMRT Reference	Action	Lead	By When	Progress Update	RAG Status*
C5.08/20	(ii) This mother was in preterm labour/threatened preterm labour but was not offered antenatal steroids when they were indicated (iii) This mother was in preterm labour/threatened preterm labour but was not offered magnesium sulphate for fetal neuroprotection when this was indicated . **Review preterm labour guideline and ensure awareness of guidance at limits of viability. Arrange teaching session on preterm labour around the limits of viability**	PM HA	~~31/12/2020~~ 28/02/21		**4**
C9.08/20	(i) This mother booked late. **Write a late booking guideline**	PM FC	~~31/12/2020~~ 28/02/21		**4**
C9.08/20	(iii) Fundal height measurements had not been plotted on a chart (iv) Referrals for scans and/or further investigations were not undertaken when required **Feedback to community team and individual**	FC	~~31/10/2020~~ Deferred to end Feb 21	**Jan 21** Update sought from Comm Midwifery Matron	**4**
C7.07/20	This mother presented with reduced fetal movements; the written material about reduced fetal movements available to give her during her antenatal care was not written in a language that she could read **To discuss availability of literature in other languages**	PM	~~31/10/2020~~ 28/02/21	**Jan update** PM meeting to discuss with AD -working with LOTUS team who are reviewing Information available in different languages	**4**
C1.08/20	The opportunity to take their baby home was not offered to the parents as there is no local policy for this. **Plan to review local policy to see if this should be aligned to the recent national guidance**.	Bereavement MDT	~~31/10/2020~~ 31/03/21	**Jan 21** Discussions held with Mortuary as part of the review of Last Offices Policy and proposed that babies/children can be taken directly from the Ward, Needs further clarification to agree scope before finalising.	**4**

** Both numerical and colour keys are to be used in the RAG rating. If target dates are changed this must be shown using ~~strikethrough~~ so that the original date is still visible.*

RAG Status Key:	***5***	***Complete***	***4***	***On Track***	***3***	***Some Delay – expected to be completed as planned***	***2***	***Significant Delay – unlikely to be completed as planned***	***1***	***Not yet commenced***

PMRT Reference	Action	Lead	By When	Progress Update	RAG Status*
C3.9/20	(i) It is not possible to tell from the notes if the parents were offered the opportunity to exercise their particular religious/spiritual/cultural wishes **Bereavement Specialist Midwife to send out communication to all Midwives regarding the need to document that they have discussed the availability of the Chaplain service with parents**	HJ	31/12/2020	**New Bereavement Booklet in place.**	**5**
C11.11/20	(i) It is not possible to tell from the notes if the parents were offered the opportunity to take their baby home (iii) It is not possible to tell from the notes if the parents were offered the opportunity to exercise their particular religious / spiritual / cultural wishes **Update bereavement guideline and checklist for neonatal services**	RM/KY	31/05/2021		**4**
C11.11/20	(ii) The parents were not offered a hospital post-mortem **Bereavement paperwork to be reviewed and to be brought in line with national bereavement pathway.**	RM/KY	31/05/2021		**4**
C8.11/20	The care of this women and/or her baby was adversely affected by changes to the organisation of care and services to deal with the COVID-19 pandemic although these changes were the result of an organisational risk assessment **Head of midwifery to write to the Registrar on behalf of the Trust**	HoM	28/02/2021	**Jan 21** Discussions held with the Registrars and response that currently they are unable to use Language Line. Agreed to look into alternative options	**4**
C7.11/12	(i) The test used to screen for gestational diabetes does not follow national guidance (ii) This mother has a history of gestational diabetes and her antenatal care was not appropriate given this history **To feedback to individual and circulate in learning bulletin**	FC & PM	28/02/2021	**Jan 21** Learning Bulletin Circulated – update sought from Comm Matron re feedback to individual	**4**

** Both numerical and colour keys are to be used in the RAG rating. If target dates are changed this must be shown using ~~strikethrough~~ so that the original date is still visible.*

RAG Status Key:	***5***	***Complete***	***4***	***On Track***	***3***	***Some Delay – expected to be completed as planned***	***2***	***Significant Delay – unlikely to be completed as planned***	***1***	***Not yet commenced***

Maternal, Newborn and Infant
Clinical Outcome Review Programme

MBRRACE-UK
Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries across the UK

University Hospitals of Leicester NHS Trust

MBRRACE-UK perinatal mortality report: 2018 births

This report concerns stillbirths and neonatal deaths among the 9,969 babies born within your Trust in 2018, EXCLUDING births before 24 weeks gestational age and all terminations of pregnancy. Neonatal deaths are reported by place of birth irrespective of where death occurred.

Perinatal mortality

Type of death	Number	Crude rate	Stabilised & adjusted rate (95% C.I.)		Comparison to the average for similar Trusts & Health Boards
Stillbirth	26	2.61	3.48	(2.77 to 4.29)	More than 5% and up to 15% lower
Neonatal	28	2.82	2.69	(1.91 to 3.84)	More than 5% higher
Extended perinatal	54	5.42	6.18	(5.19 to 7.85)	Up to 5% higher or up to 5% lower

The crude mortality rate is the observed rate for your Trust and is a snapshot of mortality for births in 2018. The stabilised & adjusted mortality rate gives a more reliable estimate of the underlying mortality rate taking into account key factors known to increase the risk of stillbirth and neonatal mortality as well as the effects of chance variation, particularly where the number of deaths was small. While it is not possible to adjust for all potential risk factors, these measures do provide an important insight into the perinatal mortality for births within your Trust in 2018.

As one of the stabilised & adjusted mortality rates shown here is high compared with similar Trusts and Health Boards (see page 7 for more details), it is important to: a) review the data that was entered locally about your Trust to ensure it is accurate and complete; and b) review existing records regarding the deaths to ensure any avoidable factors have been identified and appropriate changes to care implemented.

Important reporting issues

It is vital that complete, accurate data is reported to MBRRACE-UK. For births in 2018, we received over 99% of information on key data items for the deaths which occurred within your Trust.

Deaths relating to births before 24 weeks gestational age have been reported separately as there is variation across the UK as to whether babies at this gestation are reported as a late fetal loss or a neonatal death which biases mortality rates. Please continue to ensure that all late fetal losses at 22 to 23 weeks gestational age are reported to MBRRACE-UK.

About this report

MBRRACE-UK

This report presents one element of the work of MBRRACE-UK, a collaboration led from the National Perinatal Epidemiology Unit at the University of Oxford with members from the University of Leicester (who lead the perinatal aspects of the work), University of Birmingham, Bradford Institute for Health Research, The Newcastle upon Tyne Hospitals NHS Foundation Trust and Sands (Stillbirth and neonatal death charity).

MBRRACE-UK is commissioned by the Healthcare Quality Improvement Partnership (HQIP) on behalf of NHS England, NHS Wales, the Scotland Government Health and Social Care Directorate, the Northern Ireland Department of Health, Social Services and Public Safety (DHSSPS), the States of Guernsey, the States of Jersey, and the Isle of Man Government.

Introduction

This is the sixth MBRRACE-UK perinatal mortality surveillance report produced for Trusts and Health Boards across the UK. It includes details of the late fetal losses (22^{+0} to 23^{+6} weeks gestational age), stillbirths and neonatal deaths for births that occurred in your Trust in 2018, as well as background information on all births. Neonatal deaths are reported by place of birth, irrespective of where the death occurred, as denominator data on the place of care is not available for all births.

Methods

Deaths were reported to MBRRACE-UK by the Trust or Health Board where the death occurred. The information about births was obtained from routine sources – the Office for National Statistics (ONS), Personal Demographics Service (PDS), National Records of Scotland (NRS), Information Services Division (ISD), Northern Ireland Maternal and Child Health (NIMACH), States of Guernsey Health and Social Services Department, and States of Jersey Health Intelligence Unit. Home births are reported where the birth was registered via a Trust or Health Board. Births and deaths are attributed according to the configuration of Trusts and Health Boards on 1 September 2019.

Deaths from all causes except termination of pregnancy are reported, including those resulting from congenital anomalies. The information in this report may not match other local or national reported rates as births before 24 weeks gestational age have been excluded from most tables due to differences in reporting by Trusts and Health Boards. Further details on the methods we have used are available from the MBRRACE-UK website.

Nationally recommended actions

Trusts and Health Boards whose mortality rates are marked ● or ● should carry out an initial investigation of their data quality and possible contributing local factors that might explain the high rate. Irrespective of where they fall in the spectrum of national performance all Trusts and Health Boards should use the national PMRT to review all their stillbirths and neonatal deaths.

Definitions

Late fetal loss:	A baby delivered between 22^{+0} and 23^{+6} weeks gestational age showing no signs of life, irrespective of when the death occurred.
Stillbirth:	A baby delivered at or after 24^{+0} weeks gestational age showing no signs of life, irrespective of when the death occurred.
Neonatal death:	A live born baby who died before 28 completed days after birth.
Extended perinatal death:	A stillbirth or neonatal death.

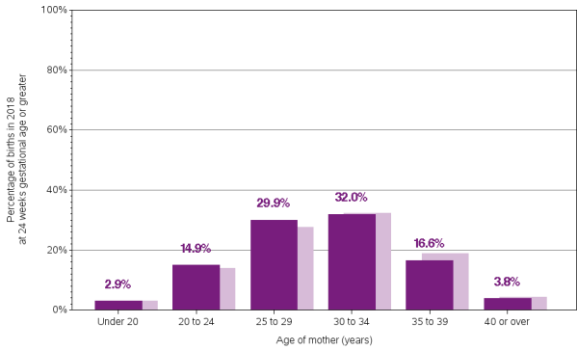
Your births

Your Trust UK-wide

Age of mother

The proportion of mothers aged 35 years old or older was lower than that of the UK as a whole: 20.3% versus 23.2%.

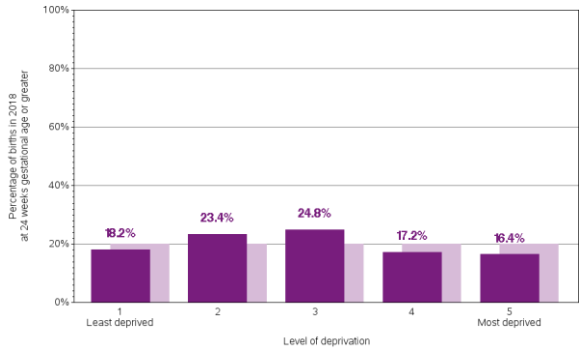
Across the UK the mothers were: 2.9% under 20; 14.0% 20 to 24; 27.6% 25 to 29; 32.4% 30 to 34; 18.8% 35 to 39; 4.3% 40 and over.



Socio-economic deprivation

This graph shows the distribution of births by level of deprivation, based on the postcode of the mother's residence and using the Children in Low-Income Families Local Measure.

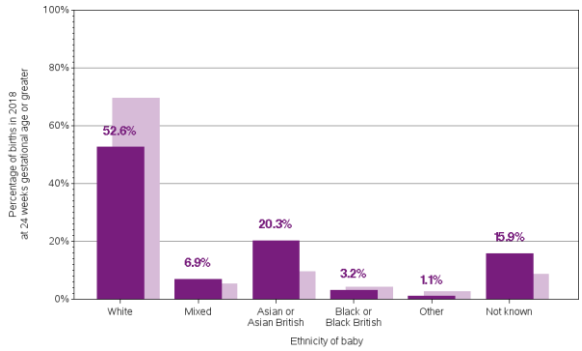
The mothers giving birth in your Trust lived in areas of similar deprivation to those giving birth across the UK as a whole.



Ethnicity of baby

The proportion of babies of Asian or Asian British ethnicity was higher than that of the UK as a whole: 20.3% versus 9.5%.

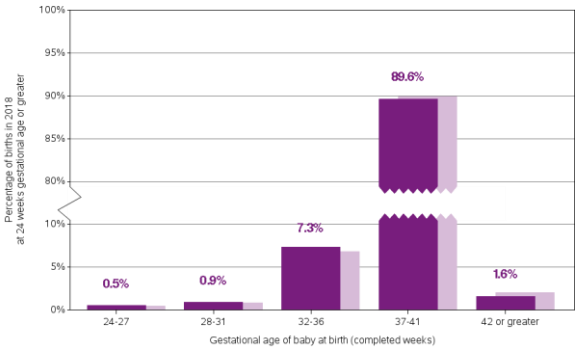
However, for 15.9% of your births the baby's ethnicity was reported as not known. This information is dependent on the accurate coding of babies' ethnicity within the routine reporting of all births.



Gestational age

In your Trust, 50 babies (0.5%) were born at 24 to 27 weeks gestational age, similar to the 0.4% seen in the UK as a whole. The percentage of babies born at 28 to 31 weeks was also similar to the national average: 0.9% versus 0.9%.

In addition, 156 babies (1.6%) were born post-term (42 weeks or greater), a lower percentage than the UK average of 2.0%.



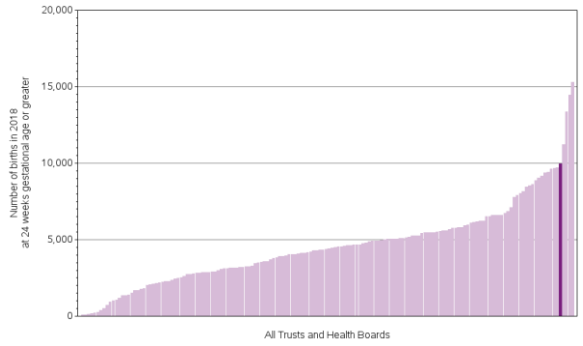
Your births *continued*

Your Trust UK-wide

Number of births

There were 9,969 births in your Trust at 24 weeks gestational age or later, excluding terminations of pregnancy.

The purple line in the graph opposite shows that the number of births in your Trust puts you in the highest third of all Trusts and Health Boards in the UK.



Percentage of births taking place in your Trust by commissioning organisation

The table below provides the percentage and number of births in your Trust at 24 weeks gestational age or later from each of the commissioning organisations for which over 1% of their births at 24 weeks gestational age or later occurred within your Trust. These organisations are Clinical Commissioning Groups (CCGs) in England, Health Boards in Scotland and Wales and Local Commissioning Groups (LCGs) in Northern Ireland.

In total, the births from these organisations accounted for 98.8% of your births at 24 weeks gestational age or later in 2018.

Commissioning organisation	% Births (N)	Commissioning organisation	% Births (N)
1 NHS Leicester City CCG	99.5% (4622)	2 NHS East Leicestershire and Rutland CCG	81.3% (2591)
3 NHS West Leicestershire CCG	66.6% (2610)	4 NHS Corby CCG	1.2% (11)
5 NHS Rushcliffe CCG	1.0% (11)		

Your perinatal deaths

Deaths of babies born within your Trust

The crude mortality rates reported here are for babies born within your Trust, excluding births before 24 weeks gestational age and all terminations of pregnancy, together with the equivalent UK-wide rates.

These rates are subject to random variation, especially when the number of deaths is small. Stabilised & adjusted mortality rates are presented on page 7 which provide more reliable estimates of the underlying (long-term) mortality rates for your Trust.

Rates per 1,000 births		Stillbirths						Neonatal Deaths				Extended perinatal deaths	
		Antepartum		Intrapartum		Unknown		Early		Late			
Your Trust	*Rate (N)*	2.1	(21)	0.5	(5)	0	(0)	1.9	(19)	0.9	(9)	5.4	(54)
UK-wide	*Rate*	3.1		0.3		0.1		1.1		0.5		5.1	

The rates of extended perinatal death are shown below for your Trust by gestational age at delivery. Equivalent UK-wide rates are also shown for comparison.

Rates per 1,000 births		Extended perinatal deaths by gestational age									
		$24^{+0} – 27^{+6}$		$28^{+0} – 31^{+6}$		$32^{+0} – 36^{+6}$		$37^{+0} – 41^{+6}$		≥ 42^{+0}	
Your Trust	*Rate (N)*	360	(18)	78.7	(7)	15.5	(11)	1.7	(15)	19.2	(3)
UK-wide	*Rate*	329.2		104.4		18.7		1.9		2	

Cause of death

The tables below describe the cause of death reported to MBRRACE-UK for stillbirths which occurred in your Trust and for neonatal deaths of babies who were born in your Trust. They are listed by the primary categories of the 'Cause Of Death & Associated Conditions' (CODAC) system of death classification.

Congenital anomaly is reported as the cause of death for all deaths where a congenital anomaly is coded as either the primary cause of death or an associated condition.

In order to ensure accurate, consistent reporting using the CODAC system of death classification, Trust and Health Board Perinatal Review groups should focus on the quality of cause of death coding.

			Infection		Neonatal		Intra-partum		Congenital anomaly		Fetal	
Stillbirths	Your Trust	*% (N)*	3.8%	(1)	0.0%	(0)	11.5%	(3)	7.7%	(2)	0.0%	(0)
	UK-wide	*%*	3.9%		1.6%		2.1%		9.7%		4.2%	
Neonatal Deaths	Your Trust	*% (N)*	3.6%	(1)	53.6%	(15)	0.0%	(0)	32.1%	(9)	3.6%	(1)
	UK-wide	*%*	7.0%		41.0%		2.1%		35.5%		3.3%	

			Cord		Placental		Maternal		Unknown		Missing	
Stillbirths	Your Trust	*% (N)*	0.0%	(0)	46.2%	(12)	7.7%	(2)	23.1%	(6)	0.0%	(0)
	UK-wide	*%*	4.9%		30.3%		3.4%		33.1%		6.8%	
Neonatal Deaths	Your Trust	*% (N)*	0.0%	(0)	0.0%	(0)	3.6%	(1)	3.6%	(1)	0.0%	(0)
	UK-wide	*%*	0.3%		3.0%		0.4%		4.8%		2.6%	

Your perinatal deaths *continued*

Place of neonatal death by gestational age

In the table below, information is shown that differentiates between the neonatal deaths of live born babies who were born and subsequently died within your Trust and those who were born within your Trust but died elsewhere. The percentage and number of babies in each group is shown by gestational age at birth.

Place of Death		Gestational group									
		24^{+0} – 27^{+6}		28^{+0} – 31^{+6}		32^{+0} – 36^{+6}		37^{+0} – 41^{+6}		≥ 42^{+0}	
Within your Trust	*% (N)*	89%	(8)	75%	(3)	100%	(6)	100%	(7)	100%	(2)
Outside your Trust	*% (N)*	11%	(1)	25%	(1)	0%	(0)	0%	(0)	0%	(0)

Post-mortem

The percentage of stillbirths and neonatal deaths for which parents were offered a post-mortem examination is given below, differentiating between those who were born and subsequently died within your Trust and those who were born within your Trust but died elsewhere.

For births within your Trust, a post-mortem was offered for 96% of stillbirths and 86% of neonatal deaths, compared with 97% and 87% UK-wide.

Place of Death		Post-mortem offered (as % of deaths)			
		Stillbirths		Neonatal Deaths	
Within your Trust	*% (n/N)*	96%	(25/26)	85%	(22/26)
Outside your Trust	*% (n/N)*			100%	(2/2)
UK-wide	*%*	97%		87%	

The percentage of post-mortems offered or for which consent was obtained and where the cause of death was reported to MBRRACE-UK as Unknown is shown below. You are encouraged to update the reported cause of death on the MBRRACE-UK data reporting system once the post-mortem results are known.

		Post-mortem			
		Offered		Consent obtained	
Unknown cause of death	*% (N)*	100%	(7/7)	71%	(5/7)

Babies born at 22 to 23 weeks gestation

It is vital for MBRRACE-UK to be able to present perinatal mortality rates from 22 weeks gestational age onwards, as recommended by the World Health Organization, in order that UK rates can be compared internationally. As there is no statutory registration of late fetal losses at 22 and 23 weeks gestational age, it is vital that your Trust ensures that there is a rigorous system for reporting these deaths to MBRRACE-UK.

The number of late fetal losses at 22 and 23 weeks gestational age reported by your Trust for babies born in 2018 was 8. Please continue to review this information in order to ensure that all late fetal losses are reported to MBRRACE-UK.

		Deaths at 22^{+0} to 23^{+6} weeks gestational age	
		Late fetal losses	Neonatal deaths
Your Trust	*N*	8	5

Your perinatal deaths *continued*

Comparisons with similar Trusts, Health Boards and the UK average

The mortality rates are reported for babies born within your Trust at 24 weeks gestational age or later, excluding terminations of pregnancy. A 'crude' rate and a 'stabilised & adjusted' rate are presented for stillbirths, neonatal deaths and extended perinatal deaths. The **crude mortality rate** is the number of deaths for every 1,000 births (or 1,000 live births for neonatal mortality) and is a snapshot of mortality for your organisation for births in 2018. However, this can be misleading as a measure of the underlying (or long-term) mortality rate due to chance variation and differences between Trusts and Health Boards in the proportion of high risk pregnancies.

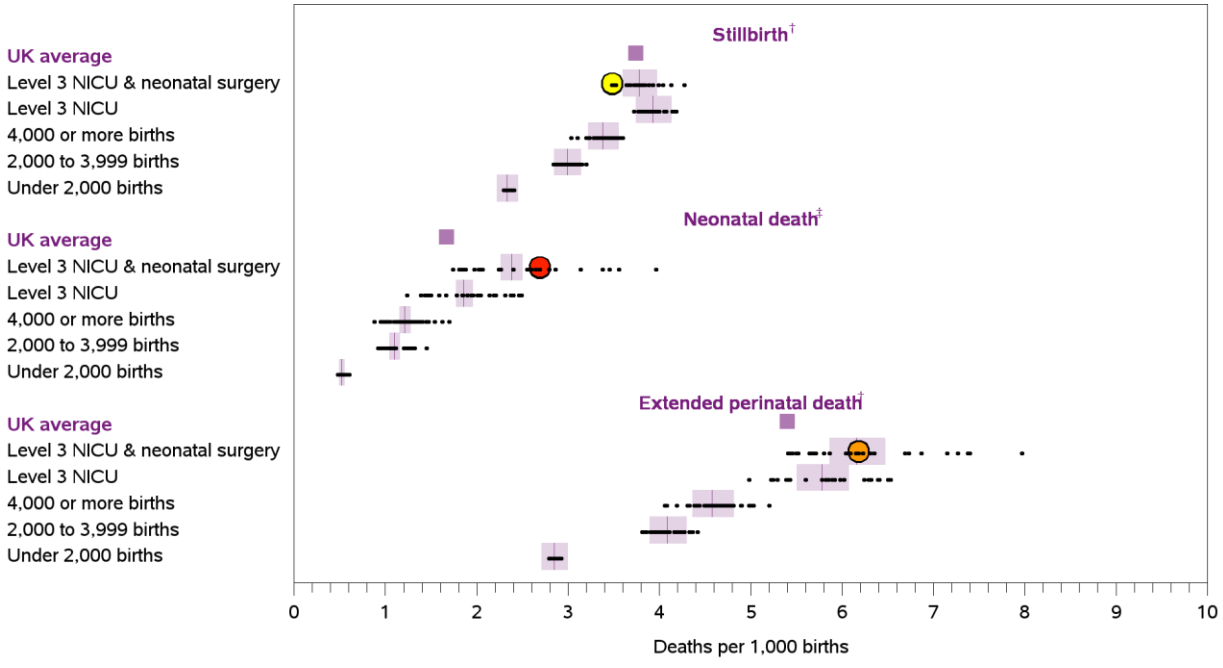
The **stabilised & adjusted mortality rate** is also reported which provides a more reliable estimate of the underlying mortality rate, accounting for mother's age, socio-economic deprivation, baby's sex and ethnicity, multiplicity, and (for neonatal deaths only) gestational age at birth. In addition, to account for the wide variation in case-mix, all Trusts and Health Boards have been classified hierarchically into five comparator groups: (i) Level 3 Neonatal Intensive Care Unit (NICU) and surgical provision (units routinely accepting for birth babies with a known congenital anomaly likely to require surgery in the neonatal period); (ii) Level 3 NICU; (iii) 4,000 or more births per annum at 22 weeks or later; (iv) 2,000-3,999 births per annum at 22 weeks or later; (v) under 2,000 births per annum at 22 weeks or later**. Your Trust has been included in the comparator group with a Level 3 NICU and neonatal surgical provision.**

	Mortality rate per 1,000 births [§] (95% confidence interval)		
	Stillbirth [†]	Neonatal [‡]	Extended perinatal [†]
Crude	2.61	2.82	5.42
Stabilised & adjusted [◊]	3.48 (2.77 to 4.29)	2.69 (1.91 to 3.84)	6.18 (5.19 to 7.85)

[§] excluding terminations of pregnancy and births <24^{+0}; [†] per 1,000 total births; [‡] per 1,000 live births.

Your estimated stabilised & adjusted mortality rate for each type of death has been compared with the average mortality rate for Trusts and Health Boards in the same comparator group and is shown below as a circle:

- more than 15% lower than the average for the group
- more than 5% and up to 15% lower than the average for the group
- up to 5% higher or up to 5% lower than the average for the group
- more than 5% higher than the average for the group

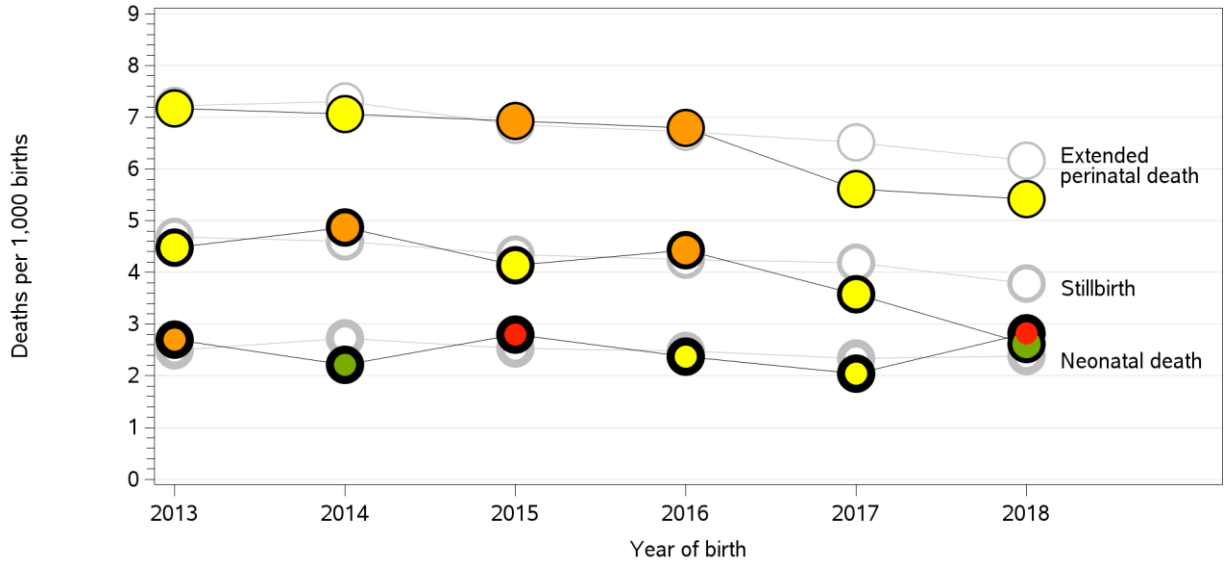


Mortality rates over time

Crude mortality by year of birth

Crude mortality rates for each type of death compared to the average mortality rate for Trusts and Health Boards in the same comparator group (shown in grey) by year of birth.

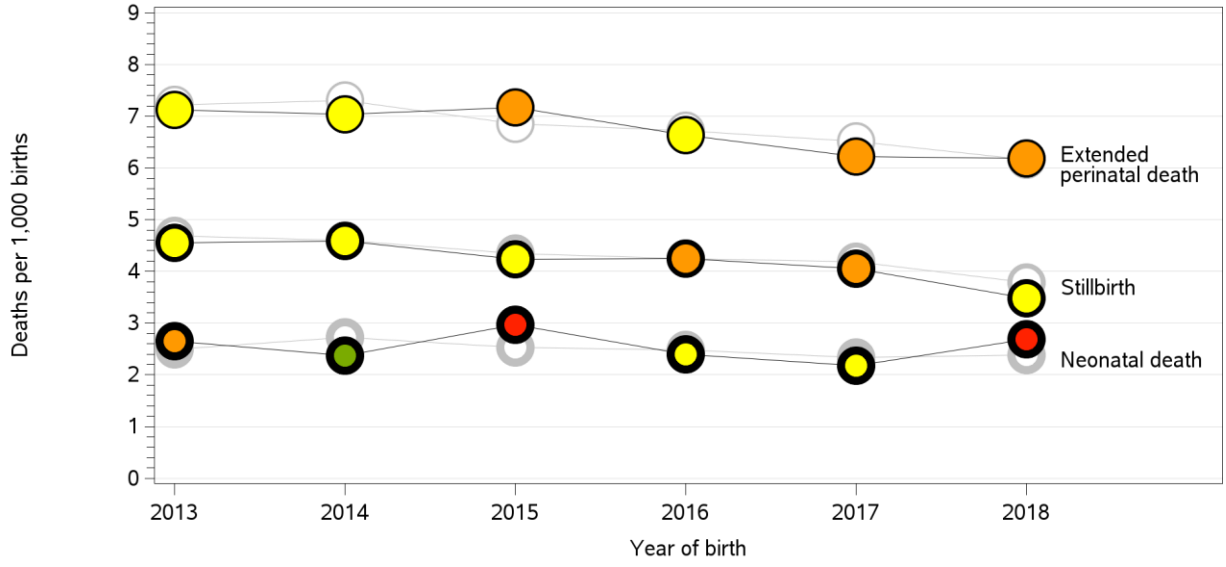
Due to updates to the data, these results might differ slightly from those in previous reports.



Stabilised & adjusted mortality by year of birth

Stabilised & adjusted mortality rates for each type of death compared to the average mortality rate for Trusts and Health Boards in the same comparator group (shown in grey) by year of birth.

Due to updates to the data and improvements to the statistical methodology used, these results might differ slightly from those in previous reports.



Data reporting

Completeness of key data items for DEATHS AT YOUR TRUST

The tables below provide details of completeness for key items in the data collection form. While the rest of this report concerns babies born within your Trust, these tables show the overall completeness of data for **deaths at your Trust no matter where they were born.** The percentage of data reported is given for each item, together with a coloured diamond denoting the level of completeness:

- less than 70.0% complete
- 70.0% to 84.9% complete
- 85.0% to 96.9% complete
- 97.0% to 99.9% complete
- 100% complete

These data items have been assessed as they are all readily available and essential to the accurate reporting of extended perinatal mortality for your Trust. For those items scoring red, orange or yellow it is essential that completeness is improved. Achieving this may well require collaboration with receiving and referring units.

Mother's details		Completeness
Name		100.0%
	UK-wide	100.0%
Postcode of residence		100.0%
	UK-wide	99.9%
Ethnicity		100.0%
	UK-wide	98.7%
Age		100.0%
	UK-wide	96.3%

Birth		Completeness
Type of onset of labour		98.4%
	UK-wide	98.6%
Actual place of birth		96.8%
	UK-wide	99.2%
Date and time of birth		100.0%
	UK-wide	99.3%
Final mode of birth		100.0%
	UK-wide	99.5%

Booking and antenatal care†		Completeness
Smoking		98.4%
	UK-wide	97.3%
Body mass index		100.0%
	UK-wide	100.0%
Intended type of care at booking		96.8%
	UK-wide	98.0%
Estimated date of delivery		100.0%
	UK-wide	97.3%

Baby's outcome		Completeness
Date death confirmed‡		100.0%
	UK-wide	96.0%
Whether alive at onset of care‡		100.0%
	UK-wide	96.4%
Whether admitted to NNU§		100.0%
	UK-wide	99.3%
Main cause of death		100.0%
	UK-wide	94.4%

Baby's characteristics		Completeness
Birth weight		100.0%
	UK-wide	99.1%
Gestational age at birth		100.0%
	UK-wide	99.2%

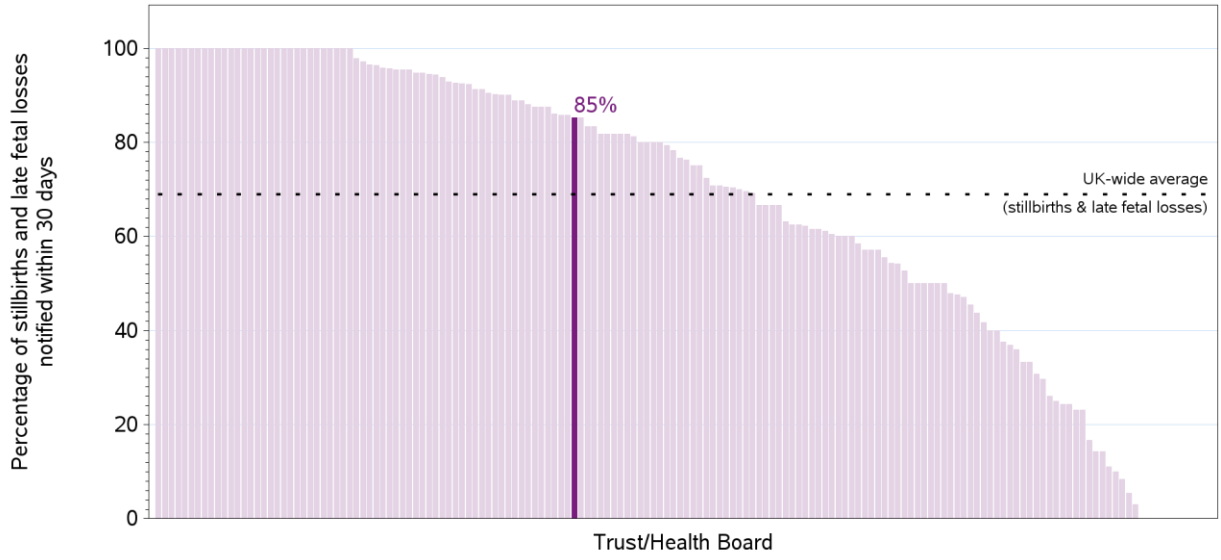
† excluding mothers reported as never booked; ‡ this data item is collected for stillbirths only; § this data item is collected for neonatal deaths only.

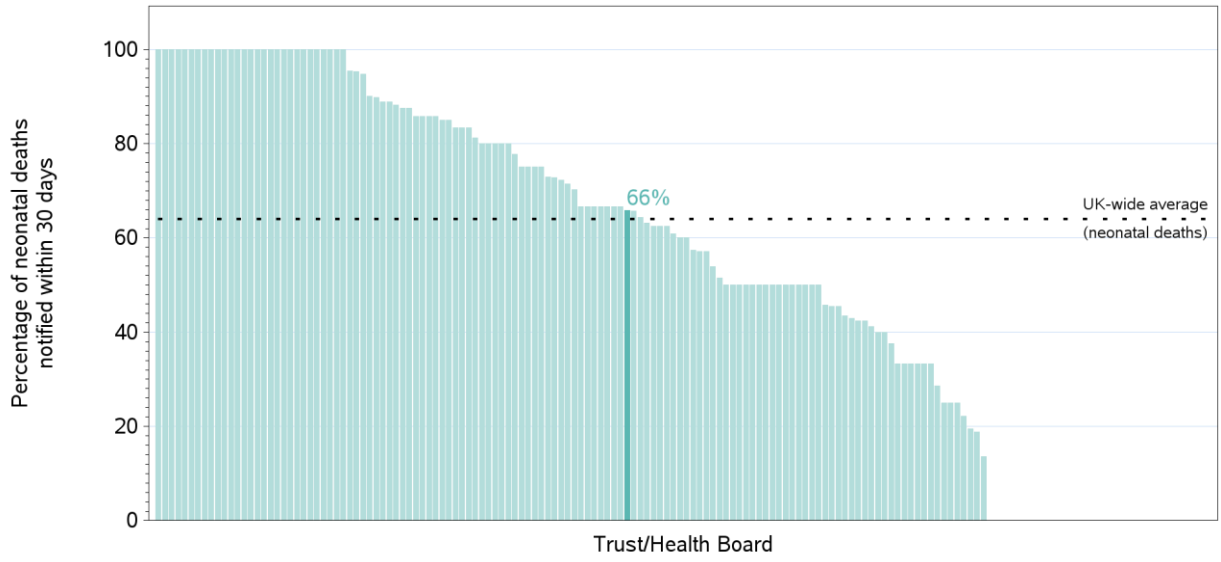
Percentage of deaths notified by your Trust within 30 days

The MBRRACE-UK timeliness benchmarks for the notification of deaths and completion of surveillance data are:

1) All deaths should be **notified** to MBRRACE-UK within 30 days of the death occurring. The full data does not have to be complete at this point.
2) Trusts and Health Boards should aim to **complete** data entry for each death within 90 days of the death occurring.

The graphs below show the percentage of stillbirths & late fetal losses and neonatal deaths notified by your Trust within the 30-day benchmark period.





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UHL 2018 MBRRACE-UK Perinatal Mortality Report

The 2018 UHL MBRRACE-UK Perinatal Mortality report has now been released. The perinatal mortality rates are as follows:

Type of death	No.	Crude rate	Stabilised and adjusted rate	Comparison to peers
Stillbirth	26	2.61/1000	3.48/1000	Between 5 and 15% lower
Neonatal death	28	2.82/1000	2.69/1000	More than 5% higher
Extended perinatal death	54	5.42/1000	6.18/1000	Between 5% lower and 5% higher

The stabilisation and adjustment of our rates has made the stillbirth appear slightly higher than the exceptionally low crude rate that we had in 2018. This is because this process corrects for and smooths out short term variation, and makes the assumption that our significant fall in stillbirths in 2018 is a statistical 'blip'. It also compensates for the higher than previous neonatal death rate.

Comparison to our peer group

The figure on page 7 of the report illustrates the comparison of our mortality rates to our peer group (level 3 NICU with neonatal surgery). Our stillbirth rate was the lowest in our peer group, and was below the national stillbirth rate. Although our neonatal death rate was above average for our peer group, the graph illustrates that we were still in the middle of the range of neonatal deaths experienced in that group (which was affected by a small number of trusts with extremely high neonatal death rates – we were not one of this group). The combination of this data means that our overall extended perinatal mortality rate was very close to the average of our peer group.

Data completeness

We reported >99% of the information required on key data items required by MBRRACE-UK, confirming the high standard of local reporting.

Demographics

The demographics in the report suggest that we have a slightly fewer women >35 years giving birth compared to the national average (20.3% vs 23.2%), and a similar deprivation profile to the national average. Our ethnic mix is significantly different to the national average, with a significantly higher proportion of babies of Asian origin in our population (20.3% vs 9.5%). This demographic profile is unchanged to previous years. It is however

notable that this year MBRRACE-UK are collecting and reporting the ethnicity of the baby rather than the ethnicity of the mother for the first time. We have reported 15.9% of babies as unknown ethnicity, which is more than twice as high as the national average. This data entry needs improvement.

Cause of death

As in previous years we have a significantly higher number of deaths reported due to placental causes, with a significantly lower proportion of deaths of unknown cause, compared to the national average. We ascribe this difference to our rigorous ascertainment of cause of death and reporting processes.

We normally have a higher proportion of stillbirths and neonatal deaths due to congenital anomaly compared to the national average. However this year the proportions are very similar to the national average, suggesting that one of the contributing factors in the reduction in the stillbirth rate may be a reduction in this group (7.7% of stillbirths, 32.1% of neonatal deaths compared to 9.7% and 35.5% nationally). Our neonatal deaths from congenital anomaly are unchanged from last year; it is an increase in the national rate that has occurred to make us comparable.

Intrapartum stillbirths

MBRRACE-UK reports the timing of the fetal death for stillbirths as antepartum, intrapartum and unknown. In 2018 we had 5 intrapartum stillbirths, with a rate of 0.5/1000 births (0.3/1000 nationally). MBRRACE-UK records a death as 'intrapartum' if it occurs after the onset of admission for care, even if the woman was not in labour. Our 5 intrapartum stillbirths were:

- Two intrapartum death at 24 weeks gestation
- One baby at 27 weeks with PPROM and sepsis – a consultant observation of a fetal heartbeat prior to the delivery was accepted, although the baby appeared to have maceration at delivery so the diagnosis of intrapartum death is questionable.
- One term baby, reduced movements, not in labour, with a terminal CTG, and no signs of life after a prompt category 1 Caesarean
- One 42 week baby with an encephalocoele

The primary cause of death as coded on the MBRRACE-UK website is also recorded. The 2018 report identifies a higher rate of stillbirths coded as attributable to intrapartum events

(11.5% of our stillbirths, 3 babies) compared to the national average (2.1%). Over a 6 year period we have had 14 stillbirths (out of 249) coded as due to intrapartum events, which is 5.6% (compared to approximately 5.2% average nationally). All 3 stillbirths coded as due to intrapartum events in 2018 were extremely preterm, and represent the 3 preterm babies listed above.

Neonatal deaths

Our neonatal death rate in 2018 is above the peer group average. There is considerable year on year variation in this rate due to the fairly small numbers involved. In 2018 this represented 28 babies. The deaths were all reviewed, and there were 3 deaths where issues with care were identified that may have contributed to the death:

- 28 week neonatal death from sepsis with delayed removal of cerclage after PPROM and delayed delivery in the presence of maternal sepsis. Baby transferred to neighbouring level 2 unit very soon after delivery for capacity reasons and died almost immediately on arrival there (joint mortality meeting was carried out with the level 2 unit and regional dissemination of learning).
- 42 week neonatal death from HIE where induction of labour had been delayed at maternal request. However there were issues with CTG interpretation which led to delayed delivery. (RCA and SI report done).
- 36 week baby with exomphalos, with delayed diagnosis of compartment syndrome after the initial surgery (RCA and moderate investigation done).

The one notable feature of the deaths during 2018 was the unusually high number of babies who died after their mothers were transferred to UHL for clinical reasons, and the babies were then born at UHL. These were extremely preterm babies or babies with significant congenital anomalies. Seven of our 28 neonatal deaths fell into this category. It is not data that we have previously attempted to collect. However a retrospective examination of the outcomes of women who transferred to UHL for clinical reasons over the years 2016-2018 is shown below:

	Total	**Livebirths**	**SB**	**TOPs**	**ENND**	**LNND**	**Perinatal mortality**	**NND rate**
2016	55	52		3	3	2	96.2	96.2
2017	46	45	1		2	2	108.7	88.9
2018	66	65		1	7	2	138.5	138.5

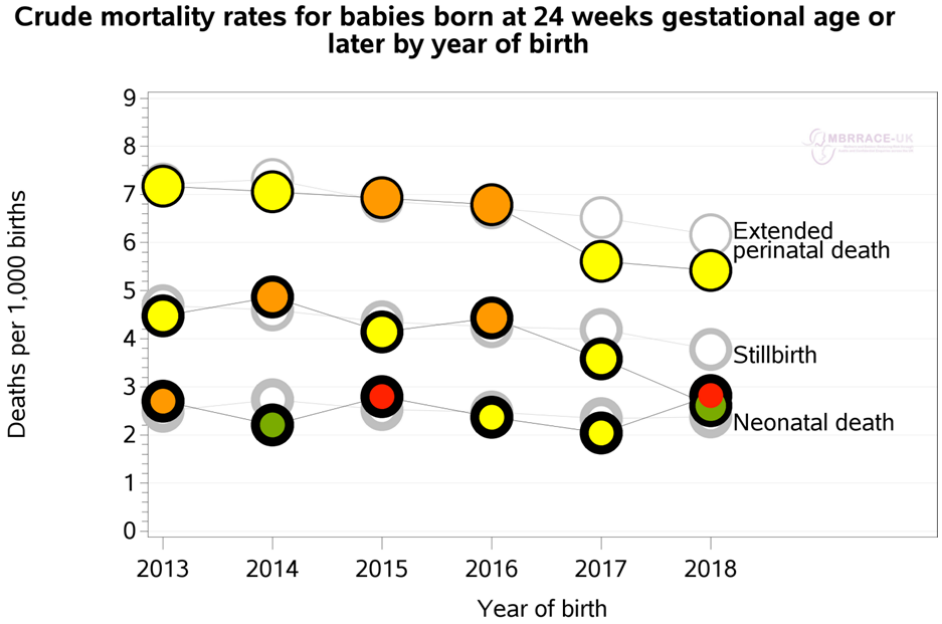
There were more in utero transfers to UHL in 2018 than in either of the previous 2 years. This is a relatively small group of babies who have an exceptionally high mortality rate and potentially make a large difference to our mortality rate. (Note that the numbers in the table above will include babies <24 weeks who are excluded from the MBRRACE-UK data set).

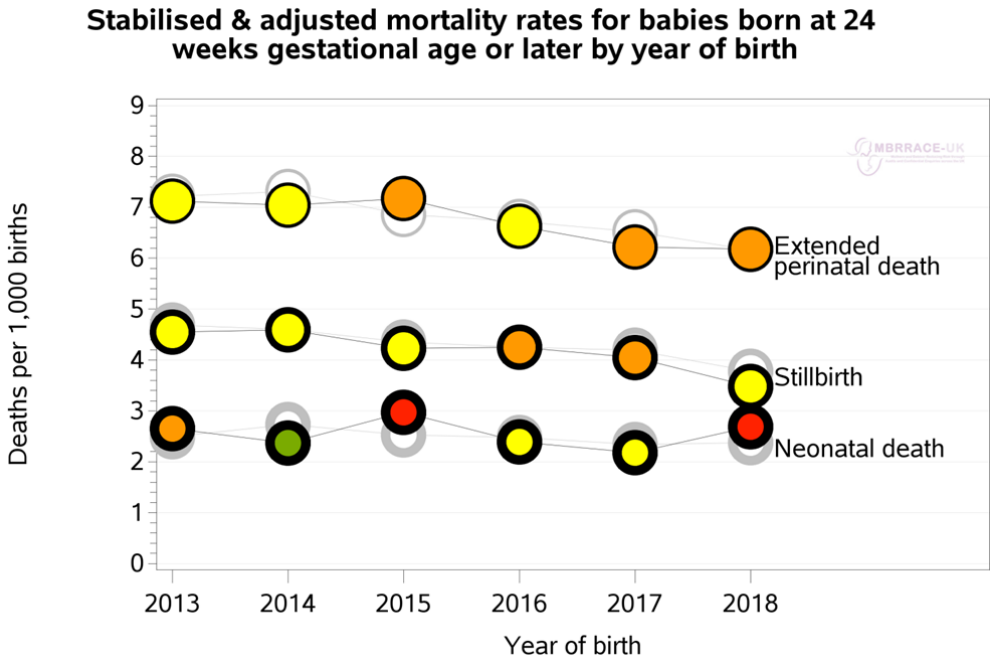
Gestational age

Gestation	Expected deaths	Observed deaths
24-27	16	18
28-31	9	7
32-36	14	11
37-41	17	15
42+	0	3

Our overall perinatal deaths fit the expected rate of deaths for the national profile. Note that this comparison is using our crude mortality rates (not the stabilised and adjusted rate) and is in comparison to the gestation specific national mortality rates and not to our peer group. The 3 babies at 42+ weeks represent one baby with a lethal anomaly who died during labour, and 2 neonatal deaths (one liver laceration in a baby with vitamin K deficiency where vitamin K injection had been declined, and one baby with HIE where induction of labour had been delayed at maternal request and there were then CTG interpretation issues).

Long term trends





These graphs show the trend in our crude mortality rates, and our stabilised and adjusted mortality rates (with our peer group averages shown in grey). It can be seen that the long term trend in mortality is downwards. There has been a significant and sustained reduction in our stillbirth rate. Some variation, especially in neonatal death rate where numbers are much smaller, can be seen over time.

Conclusion

The stillbirth rates for UHL for 2018 below the national average, and was the lowest among our peer group. We had a higher neonatal mortality rate than the peer group average in 2018. The only unusual feature identified among the neonatal death was the unusually high number of neonatal deaths amongst women who transferred their care to deliver at UHL for clinical reasons, in order to use the neonatal services (including the surgical and cardiac surgical facilities).

The long term trend in our stillbirth rate is downwards, with ongoing significant year on year variation in our neonatal mortality rate which can be influenced by external factors as described.