UNIVERSITY HOSPITALS BIRMINGHAM NHS FOUNDATION TRUST
BOARD OF DIRECTORS
THURSDAY 23 JULY 2020

Title:	**CLINICAL QUALITY MONITORING REPORT**
Responsible Director:	Prof. Simon Ball, Chief Medical Officer
Contact:	Mariola Smallman, Head of Chief Medical Officer's Services, 13768 James Bentley, Chief Medical Officer's Services Manager 13693

Purpose:	To present an update to the Board	
Confidentiality Level & Reason:	None	
Strategy Implementation Plan Ref:	#2 Eliminate unwarranted variation in services for patients through aligning and standardising pathways and service delivery #3 Provide the highest quality of care to patients through a comprehensive quality improvement programme #4 Meet regulatory requirements and operational performance standards, in line with agreed trajectories	
Key Issues Summary:	• Latest performance for a range of mortality indicators (CUSUM, SHMI, HSMR). • Summary of Serious Incidents (SIs) meeting Never Event criteria reported between 10/06/20 and 08/07/20 • Learning from Deaths, Quarter 1, 2020/21 update • Child Death Reviews, Quarter 4, 2019/20 update	
Recommendations:	To discuss the contents of this report.	
Approved by:	Prof Simon Ball	Date: 15/07/2020

UNIVERSITY HOSPITALS BIRMINGHAM NHS FOUNDATION TRUST

BOARD OF DIRECTORS
THURSDAY 23 JULY 2020
CLINICAL QUALITY MONITORING REPORT
PRESENTED BY CHIEF MEDICAL OFFICER

1. Introduction

The aim of this paper is to provide a patient safety update to the Board of Directors, based on information reported as part of clinical quality monitoring and the Clinical and Professional Review of Incidents Group (CaPRI) meetings. The Board of Directors is requested to discuss the contents of this report and approve any actions identified.

2. Mortality - CUSUM

UHB had 1 CCS (Clinical Classification System) diagnosis groups with higher than expected numbers of mortalities in March 2020:

March 2020 CUSUM Triggers:

- Pneumonia (except that caused by Tuberculosis or sexually transmitted disease) – 108 observed deaths compared to 75 expected.

March 2020 higher than expected CUSUM:

- Fluid and electrolyte disorders – 6 observed deaths compared to 3.9 expected.
- Acute Bronchitis – 10 observed deaths compared to 6.2 expected.
- Other circulatory disease – 4 observed deaths compared to 1.3 expected.
- Aspiration pneumonitis; food / vomitus – 22 observed deaths compared to 14.9 expected.
- Intestinal obstruction without hernia – 11 deaths compared to 5.2 expected.
- Urinary tract infections – 12 deaths compared to 7.4 expected.
- Fracture of neck of femur (hip) – 14 deaths compared to 9.7 expected.

The case-lists for these are subject to internal review processes.

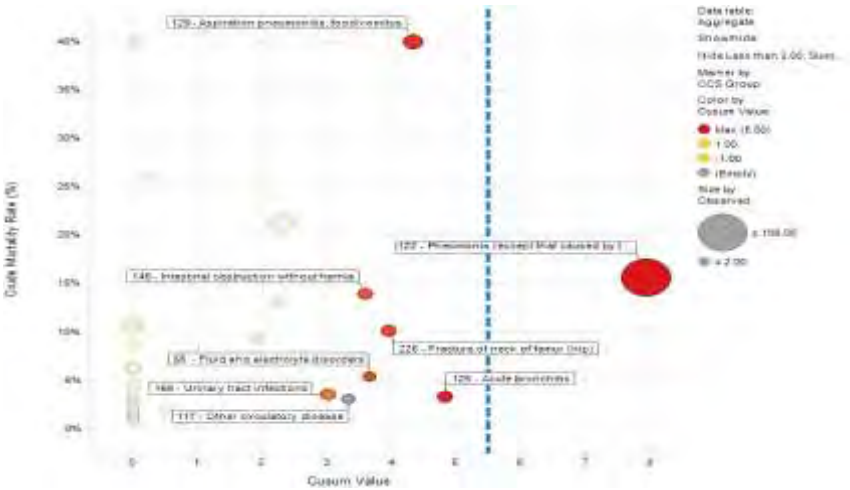


Figure 1: CCS Groups for UHB, May 2020

3. Mortality - SHMI (Summary Hospital-Level Mortality Indicator)

UHB's SHMI performance for the period April 2019 to February 2020 was 98. The expected level is 100. There were 6523 observed deaths, compared with 6685 expected.

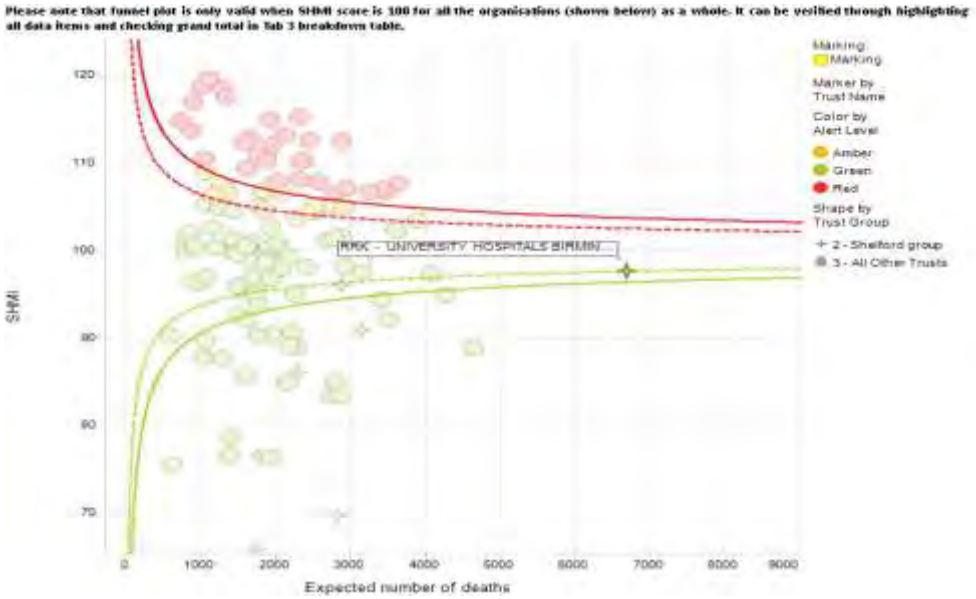


Figure 2: Trust SHMI April 2019 to February 2020

SHMI Apr 19 to Feb 20

Treatment Site Name	SHMI	Expected number of deaths	Number of patients discharged who died in hospital or within 30 days	Number of total discharges	Average comorbidity score per spell	Crude mortality rate	Obs. - Exp.
RR101 - HEARTLANDS HOSPITAL	99.33	1972.30	1959	83613	3.65	2.34%	-13
RR105 - GOOD HOPE HOSPITAL	94.77	1652.43	1566	57470	4.57	2.72%	-86
RR109 - SOLIHULL HOSPITAL	74.87	766.65	574	27545	5.54	2.08%	-193
RRK15 - QUEEN ELIZABETH HOSPITAL BIRMINGHAM	105.95	2279.41	2415	67173	5.68	3.60%	136

4. Trust HSMR (Hospital Standardised Mortality Ratio)

UHB HSMR; between April 2019 to March 2020 was 104 due to 4180 observed deaths, compared to 4033 expected.

Apr-19 to Mar-20 HSMR

Treatment Site	Number of discharges	Expected number of deaths	Number of deaths	HSMR	Average comorbidities per spell	Crude mortality rate	Obs. - Exp.
RR101 - HEARTLANDS HOSPITAL	39002	1177.32	1286	109.23	5.38	3.30%	109
RR105 - GOOD HOPE HOSPITAL	32867	984.79	1018	103.37	6.42	3.10%	33
RR109 - SOLIHULL HOSPITAL	21484	443.46	350	78.92	6.10	1.63%	-93
RRK15 - QUEEN ELIZABETH HOSPITAL BIRMINGHAM	42741	1411.54	1512	107.12	6.34	3.54%	100
Grand total	140484	4033.56	4180	103.63	5.98	2.98%	146

Figure 3: Trust HSMR April 2019 to March 2020

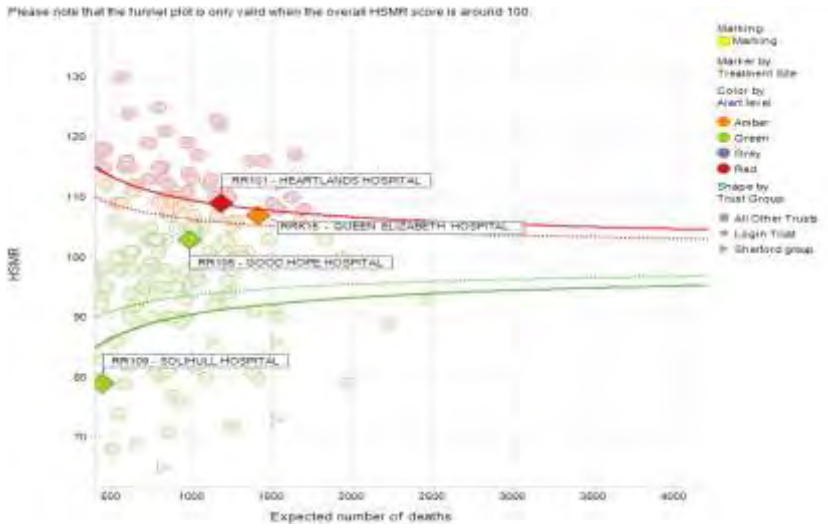


Figure 4: HSMR April 2019 to March 2020 by Hospital Site

5. Learning from Deaths – Q1 2020/21

The Learning from Deaths, Quarter 1, 2020/21 update is at Appendix A.

Emergency legislation (Coronavirus Act 2020) includes changes to death certification, registration and cremation paperwork. Within the Trust there was a need to temporarily suspend ME scrutiny for the period 23rd March 2020 to 30th May 2020. However, during this period measures were in place to ensure the oversight of Medical Certificates of Cause of Death (MCCDs) completion, including appropriate referral to the Coroner. Medical Examiner Scrutiny resumed from 1st June 2020.

A sample of cases during the period scrutiny was suspended are being retrospectively reviewed. Any cases that highlight potential shortfalls in care will be escalated for further review as per usual Trust processes.

6. Child Death Review Process

A summary of the child death reviews, for the period 1st January to 31st March 2020, is at Appendix B. The Trust introduced the Child Death Review Process, following the transfer of this responsibility from the Department of Education to the Department of Health and Social Care.

7. Never Events

The Trust has not reported any Never Events between 10th June 2020 and 8th July 2020. Four investigations previously reported are in progress.

8. Recommendations

The Board of Directors is asked to:

Discuss the contents of this report.

Prof Simon Ball
Chief Medical Officer

Appendix A

Learning from Deaths

Quarter 1 2020/21

1. Introduction

The purpose of this report is to provide the Board of Directors with a summary of the all inpatient deaths reviewed between 1st April and 30th June 2020.

2. The Trust's process for reviewing inpatient deaths

The Trust has an agreed process for escalating reviews of inpatient deaths and outcomes of Medical Examiner/M&M reviews.

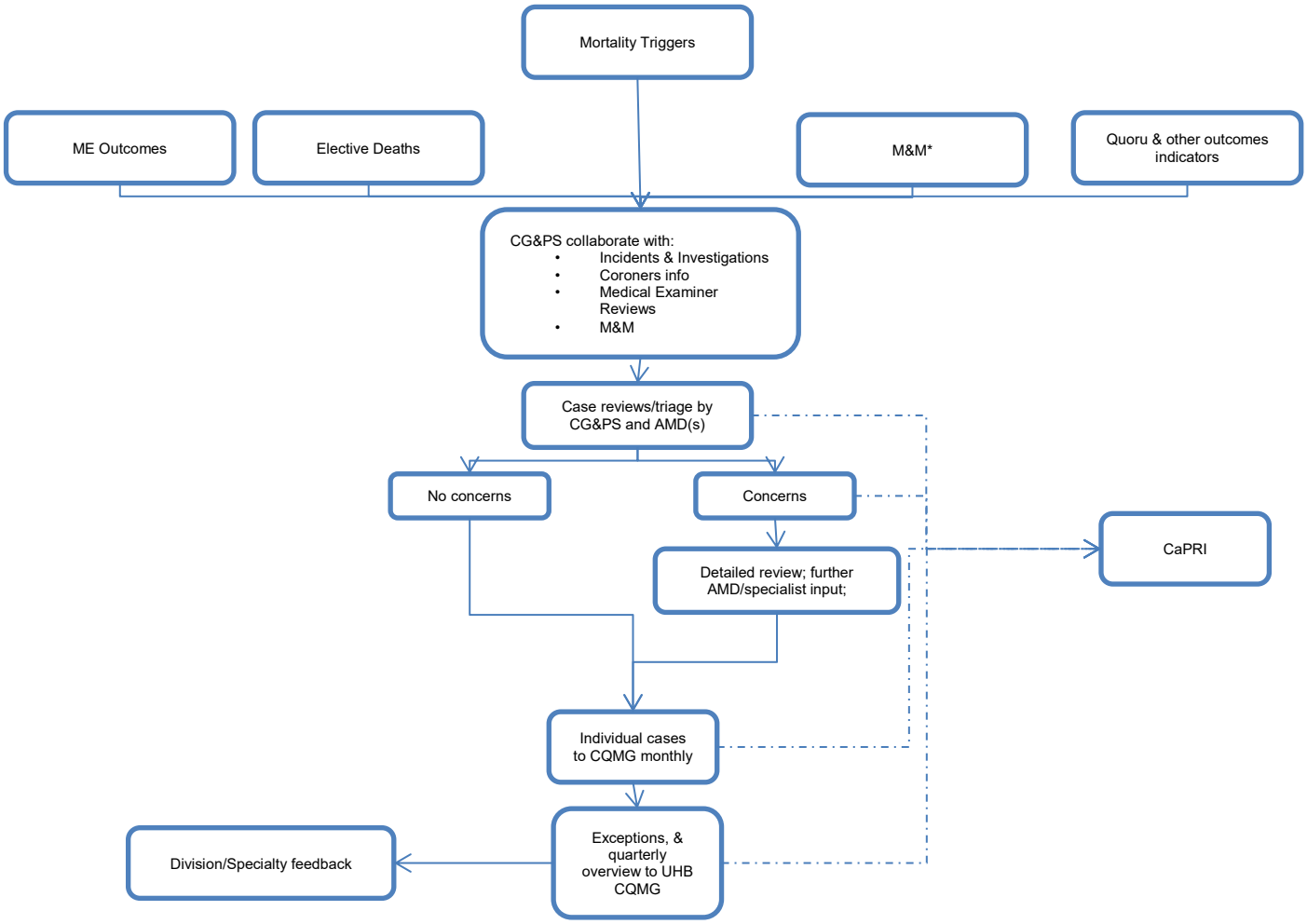


Figure 1: Trust Mortality Review Process

3. External Measures

In accordance with the National Quality Board's Learning from Deaths guidance, The Trust is required to include the following information in a public board paper on a quarterly basis:

- The total number of inpatient deaths in the Trust
- The total number of deaths receiving a front line review
- The number identified to be more likely than not due to problems in care

University Hospitals Birmingham's (UHB) definition of more likely than not due to problems in care is based on the Royal College of Physician's (RCP) Avoidability of Death scoring system. Any case that scores as a 3 or less is considered to be possibly due to problems in care and so a possibly avoidable death.

The RCP Avoidability scoring system is defined as follows:

- Score 1: Definitely avoidable
- Score 2: Strong evidence of avoidability
- Score 3: Probably avoidable
- Score 4: Possibly avoidable but not very likely
- Score 5: Slight evidence of avoidability
- Score 6: Definitely not avoidable

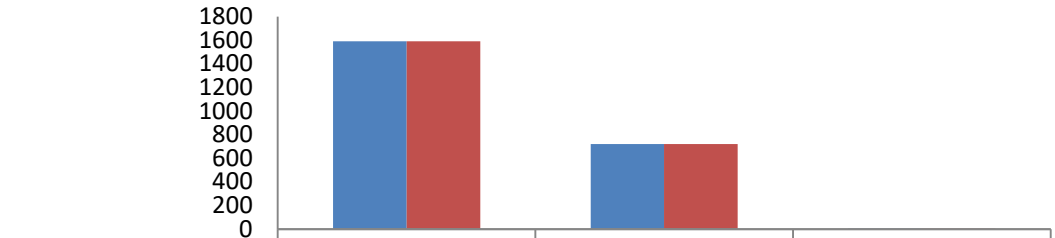
Medical Examiners (MEs) will not have had any input into the care of the patient they are reviewing and are not specialists in the clinical specialty of the deceased patient. This is intended to provide an independent opinion into the case. MEs are expected to be overly critical and cautious to prompt further review into cases where there is the suggestion of shortfalls in care. Any cases which are identified by the Medical Examiners as having potential shortfalls in care are escalated for further review as per usual Trust processes.

Emergency legislation (Coronavirus Act 2020) includes changes to death certification, registration and cremation paperwork. Within the Trust there was a need to temporarily suspend ME scrutiny for the period 23rd March 2020 to 30th May 2020. However, during this period measures were in place to ensure the oversight of Medical Certificates of Cause of Death (MCCDs) completion, including appropriate referral to the Coroner. Medical Examiner Scrutiny resumed from 1st June 2020.

A sample of cases during the period scrutiny was suspended are being retrospectively reviewed. Any cases that highlight potential shortfalls in care will be escalated for further review as per usual Trust processes.

4. UHB Quarter 1, 2020/21, Summary

The graph below shows: the total number of deaths within the Trust during the last quarter; the total number of deaths reviewed by the Medical Examiners; and the number considered potentially avoidable.



	Total Number of Deaths	Total Deaths Reviewed	Number of deaths considered potentially avoidable
Quarter	1591	721	4
Financial year to date	1591	721	4

Figure 2: Number of front line reviews of deaths and those considered avoidable (a score of 3 or less on the RCP Avoidability of Death scoring system) based on front line Medical Examiner reviews.

Four deaths received a score of 3 or less which is the criteria for being classified as potentially avoidable. Of these, 2 were identified prior to the ME review.

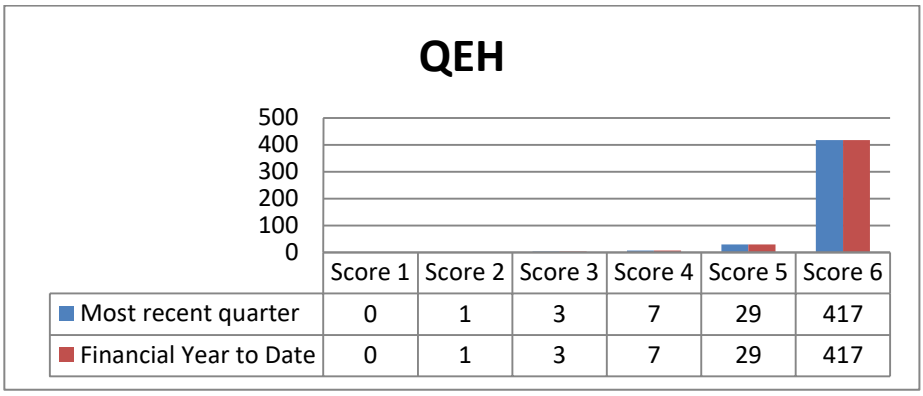
- The first case was that of a patient who developed significant intracerebral haemorrhage less than 24 hours after an incident where she received a bolus of IV heparin 3000u inadvertently via the Haemofilter. The case was discussed at CaPRI, and it was thought most likely not to have contributed to the death. This case had been identified by incident reporting and will be investigated as an Internal Serious Incident.

- The second case related to a patient who had complex gastric surgery for suspected cancer. Post operatively the histology was found to be benign and the patient subsequently became COVID-19 positive and died on the ward. The family have raised concerns with care. The case is being prepared for CaPRI for a decision on the level of investigation. This case was not identified prior to ME review.

- The third case was a patient who was admitted via AMU with COVID-19 pneumonia, and subsequently died on ITU. The ME identified a number of issues relating to end of life decision making. The case was reviewed and referred to M&M to review issues relating to EOL care.

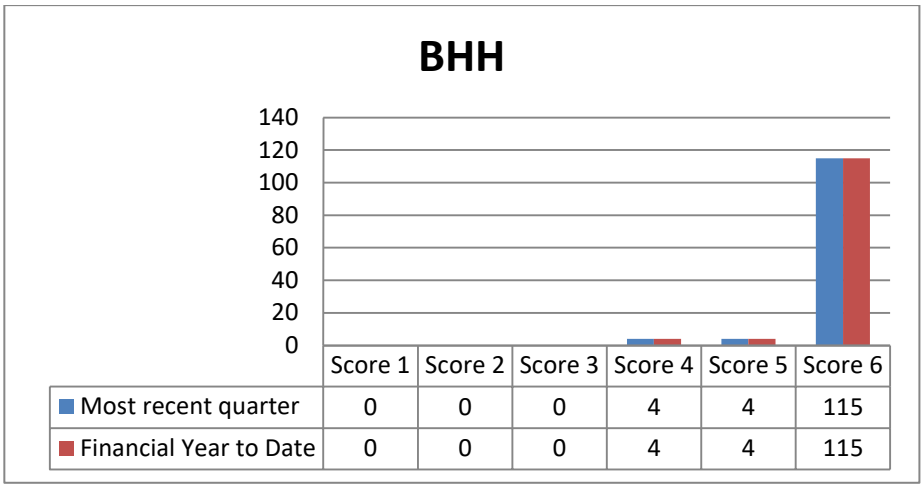
- The fourth case was a patient who fell whilst in hospital, had an operative fixation of a fractured ankle and post operatively developed COVID-19 pneumonia and died on the ward. The fall was investigated as a Serious Incident and no clear care management problems were identified.

The graphs below show the breakdown of scoring against the RCP avoidability measure across the 4 hospital sites.



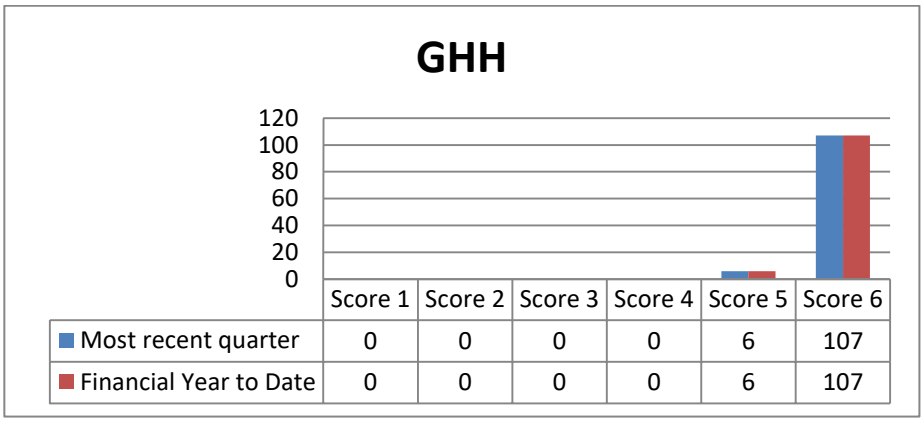
	Score 1	Score 2	Score 3	Score 4	Score 5	Score 6
Most recent quarter	0	1	3	7	29	417
Financial Year to Date	0	1	3	7	29	417

Figure 3: Avoidability scoring at QEH



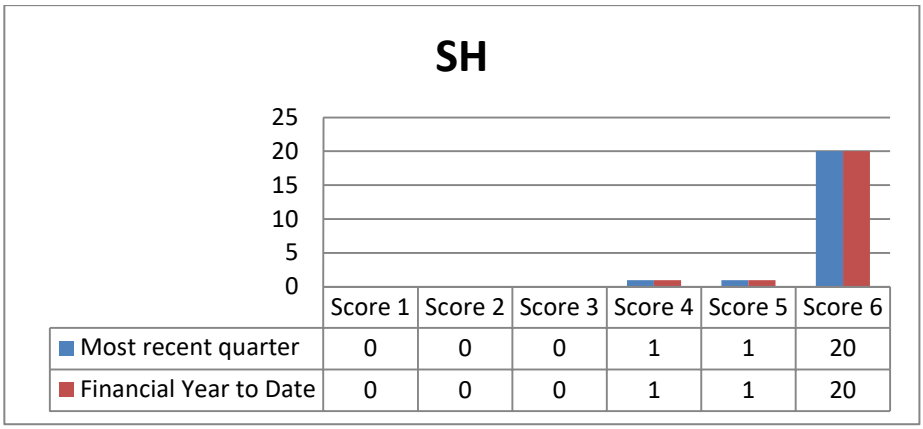
	Score 1	Score 2	Score 3	Score 4	Score 5	Score 6
Most recent quarter	0	0	0	4	4	115
Financial Year to Date	0	0	0	4	4	115

Figure 4: Avoidability scoring at BHH



	Score 1	Score 2	Score 3	Score 4	Score 5	Score 6
Most recent quarter	0	0	0	0	6	107
Financial Year to Date	0	0	0	0	6	107

Figure 5: Avoidability scoring at GHH

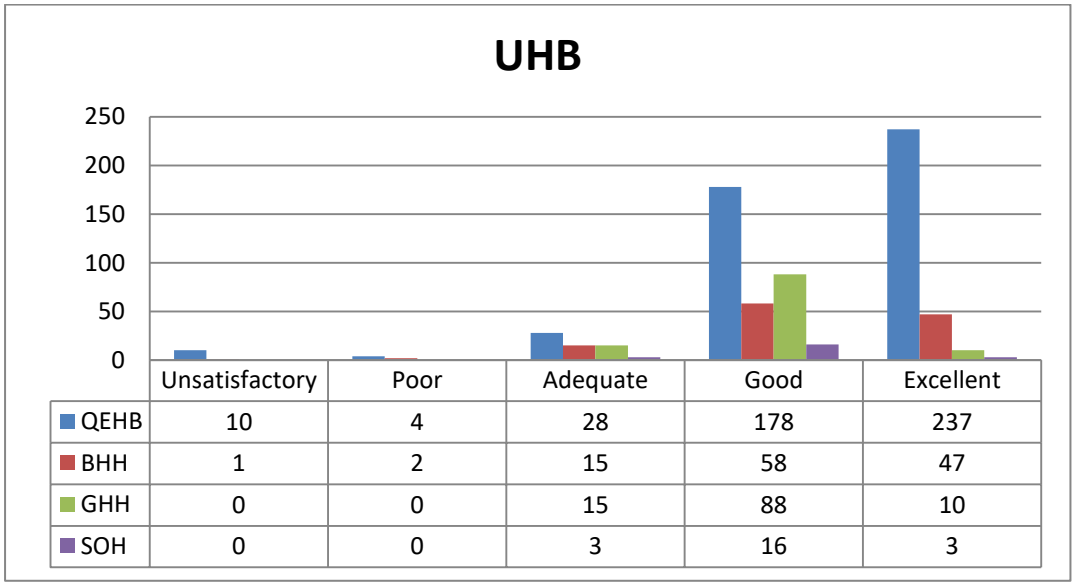


	Score 1	Score 2	Score 3	Score 4	Score 5	Score 6
Most recent quarter	0	0	0	1	1	20
Financial Year to Date	0	0	0	1	1	20

Figure 6: Avoidability scoring at SH

5. Medical Examiner Scoring of Care

This section summarises Medical Examiner overall scoring of care, which is based on the RCP Summary Category of Care scoring system. This scoring system is only monitored and reported internally. Internal scoring of care focuses mainly on the quality of care provided, regardless of the effect on the patient's outcome, whereas the external avoidability measure is focused on outcomes.



	Unsatisfactory	Poor	Adequate	Good	Excellent
QEHB	10	4	28	178	237
BHH	1	2	15	58	47
GHH	0	0	15	88	10
SOH	0	0	3	16	3

Figure 7: UHB Scoring of Care by Hospital Site for the quarter

The RCP Summary Category of Care scoring system is defined as follows:

- Excellent care: This was excellent care with no areas of concern.
- Good care: This was good care with only one or two minor areas of concern and no potential for harm to the patient
- Adequate care: This was satisfactory care with two or more minor areas of concern, but no potential for harm to the patient
- Poor Care: Care was suboptimal with one or more significant areas of concern, but there was no potential for harm to the patient
- Unsatisfactory care: Care was suboptimal in one or more significant areas resulting in the potential for, or actual, adverse impact on the patient.

Based on the cases that were escalated by MEs this quarter, the themes identified from quality of care scoring were medication management, care planning, communication with family members and end of life decision making.

6. Deaths in Patients with Learning Disabilities

There were 17 deaths in patients with Learning Disabilities reviewed by the Medical Examiners within Quarter 1, 2020/21, at UHB. Two of these cases have been referred to M&M for learning regarding communication and care planning in this patient group.

Appendix B

Child Death Review Process
Quarter 4, 2019/20

1. Introduction

The purpose of this report is to provide the Board of Directors with a summary of the child death reviews for the period 1st January to 31st March 2020.

2. Background

The Trust introduced the Child Death Review Process, following the transfer of this responsibility from the Department of Education to the Department of Health and Social Care. The aim of the Child Death Review Process is to identify learning to prevent future child deaths.

Output from the Trust's Child Death Review Process will inform the statutory independent multi-agency panel arranged by Child Death Review (CDR) partners at the Child Death Overview Panels (via both Birmingham and Solihull partners based on the patient's geographical area of residence).

The Trust's Child Death Reviews are complementary to other existing governance processes as appropriate such as: Sudden and Unexpected Deaths in Infancy /Childhood (SUDI/C) multi agency reviews; Learning from Deaths (adult cases until the statutory Medical Examiner system is introduced); safeguarding; and learning disabilities (LeDeR), etc. Where appropriate child deaths are also subject to internal incident investigation processes and referral to HM Coroner.

3. UHB Child Death Review Process

The Child Death Review Process (CDRP) meeting is chaired by a Deputy Chief Medical Officer and includes consultants (paediatrics, neonatology, obstetrics, clinical governance and emergency medicine) and senior nursing and midwifery leads. Other attendees include clinicians who were directly involved in the care of the child during his or her life, the Clinical Service Lead and any professionals involved in the investigation into the death.

CDRP meetings take place on a bi-monthly basis and aim to review deaths within a recommended period of three months. CDRP meetings include:

- A review of the background history, treatment, and outcomes of investigations, to determine, as far as is possible, the likely cause of death;
- Ascertaining contributory and modifiable factors across domains specific to the child, the social and physical environment, and service delivery;
- A review of support provided to the family.

- Identification of any learning arising from the death and, where appropriate, to identify actions to improve the safety or welfare of children.

The last CDRP meeting was 12 February 2020. Due to the COVID-19 pandemic, the meetings scheduled for 8th April and 10th June were both cancelled. CDRP meetings will resume no later than August 2020.

4. Amendment to Quarter 3, 2019/20 figures

The previous report should have reported 10 neonatal deaths and not 7, bringing the total child deaths for this period to 12 (10 neonates and 2 paediatric). 7 neonatal deaths had been reported via the Neonatal Badgernet IT system. However, neonatal deaths are also reported on the Maternity Badgernet system which reported 3 neonatal deaths during this period; these were not included in the last report. The 3 additional neonatal deaths were however reported in a timely fashion to external organisations. Information from both systems will now be included in this report.

5. UHB Quarter 4, 2019/20, Summary

There were 10 child deaths (6 neonatal deaths and 4 paediatric deaths) during Quarter 4, 2019/20.

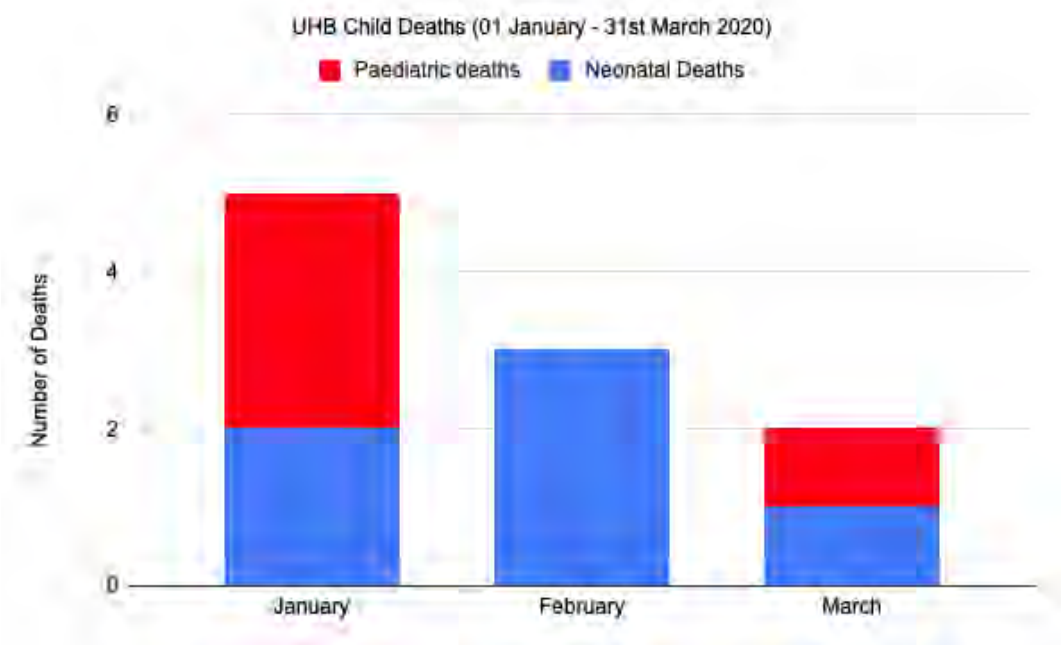


Figure 1: Paediatric and Neonatal Deaths reported by month

Due to the temporary suspension of the Child Death Review meetings, none of these cases have been discussed at the CDRP. However, where available, mortality meeting minutes and the outcomes from the Perinatal Mortality Review (PMR) have been forwarded to the CDRP. These deaths will be reviewed by the CDRM Chair and Vice Chair in the next two months.

5.1. Neonatal deaths at the Trust

There were 6 neonatal deaths reported during Quarter 4, 2019/20. All of these were born prematurely (gestation range from 17 weeks to 35 weeks) and all occurred at Heartlands Hospital. Their birth weight ranged from 130grams (4.5 ounces) to 3450 grams (7.6lbs).

- The first baby died of extreme prematurity, born at 17 weeks gestation with a birth weight of 130 grams. The mother was brought in by ambulance to the Gynaecology Assessment Unit (GAU). She was transferred to the bereavement unit. The baby boy was born showing signs of life and lived for 1.5 hours. The parents expressed concerns about access to GAU services feeling that this is not an appropriate place to be seen. No PMR report is produced for this baby as he was less than 22 weeks gestation.

- The second baby was born at 37+5 weeks via emergency caesarean section. The baby boy had many abnormalities picked up on ultrasound scans. The mother was advised that in view of multiple serious congenital abnormalities, the outlook was extremely poor and providing intensive care would not be appropriate. At birth there was minimal respiratory effort and at 16 minutes the baby was no longer gasping. A neonatal registrar reviewed at 23 minutes at which point the heart rate was still detectable but with no respiratory effort. A neonatal registrar was called to verify the death at 2.5 hours of age.

- The third baby died of extreme prematurity, born at 19 weeks gestation with a birth weight of 240 grams (8.5 ounces); no PMR report was produced for this baby as he was under 22 weeks gestation. He died 2 hours after birth.

- The fourth baby's case was identified as grade C "care issues identified which may have made a difference to the outcome". This was sadly an early neonatal death due to extreme prematurity and prolonged rupture of membranes. The baby weighed 780 grams at birth (1.71lbs).

  The mother was transferred from City Hospital following spontaneous rupture of membranes at 25+1 weeks. She was transferred to the delivery suite. She was reviewed in detail by the delivery suite consultant upon arrival at 09:52 hours. A bed-side scan was performed by the consultant which revealed the estimated foetal weight of 787 grams and footling breech presentation. A comprehensive plan of care was made including discussion regarding the mode of delivery. The plan was to await spontaneous vaginal delivery. The progress of labour was slow and eventually the mother delivered at 18:52 hours, 10 hours after full dilatation.

  The CDRP reviewed care in detail and concluded that the delay in this mother's labour was not managed appropriately as detailed above. The panel felt that though the gestation was extremely pre-term, the baby was a good size and an

earlier delivery may have given a better chance of survival to the baby. It would also have avoided prolonged exposure to infection as the mother became septic in labour which is also a known factor to enhance morbidity and poor outcomes. This case was escalated to Clinical Governance for review.

- The fifth baby was graded as B on the PMR Tool ("learning identified in some areas, however, this would have not changed the outcome"). This was sadly an unavoidable death at 35+1 weeks due to lethal congenital anomalies (infantile polycystic kidneys). The baby weighed 3100 grams (6.8 lbs). There was a missed opportunity to detect the foetal anomaly at the mid-trimester scan; the images showed that the kidneys were enlarged with unclear cortico-medullary differentiation. This went unrecognised. It was picked up at 34+1 weeks on a foetal medicine scan. The family were counselled and a collaborative plan of care was made with the parents. A pre-delivery decision was made to provide palliative care and the baby was admitted to an appropriate location for palliative end of life care. Had the anomaly been recognized at the mid-term scan, it would have generated a foetal medicine referral /opinion. Knowing that this was a lethal anomaly, the course of pregnancy could have been different depending on parental choice.

- The sixth baby was born at Heartlands Hospital at 32 weeks gestation with a birth weight of 3450 grams (7.6lbs). The growth scan at 29+4 weeks showed that the baby had bilateral pleural effusions. At delivery she was noted to be severely hydropic[1] and required bilateral chest drains. She was very sick after birth and required maximal intensive care support. In view of the deterioration, despite management, it was thought that continuing intensive care would not be in her best interests and after discussion with parents this was discontinued after 25 days of life. This was graded as B on the PMR Tool ("learning identified in some areas, however, this would not have changed the outcome").

5.2. Paediatric deaths at the Trust

There were four paediatric deaths at the Trust during Quarter 4 2019/20; one at Birmingham Heartlands Hospital, two at the Queen Elizabeth Hospital and one child, cared for by the Solihull Community Paediatrics team, who died at home. There were also two children who died at home but were brought into one of the Trust's Emergency Departments.

- The first child involves a nine year old boy who had a life limiting condition sadly died in January 2020 at Heartlands Hospital. He had been known to the Trust almost since birth and had been through many illnesses slowly deteriorating, with parents fully involved all along his pathway.
- The second child (aged 16 years) was transferred to the QEH intensive care unit on 12th January 2020 having been diagnosed with acute leukaemia at the Alexandra Hospital in Worcestershire the previous day. The patient remained

[1] **Hydropic:** A condition in which a foetus or new born has an abnormal build-up of fluids in the tissue around the lungs, heart, or abdomen, or under the skin.

relatively stable on ICU but still needing full organ support up until 16th January when there was acute deterioration with no obvious trigger. At 20.44 hours the patient developed dilated pupils. A CT scan showed diffuse subarachnoid haemorrhage, oedema and crowding of the foramen magnum. A decision was made with the family to withdraw support and the patient sadly died on 17th January 2020.

- The third child (aged 17 years), with a known congenital heart defect, was admitted to QEH on 19th January following an out of hospital arrest; he sadly died two days later. He had been kicking a ball around with the dog and his brother and then collapsed. The child had sustained significant hypoxic brain damage. The conclusion of the Coroner PM report was as follows:

  'He died as a result of hypoxic brain damage secondary to a cardiac arrest which followed a period of cyanosis. At post mortem, the tricuspid and pulmonary valves were underdeveloped and this almost certainly associated with incompetence of both these valves and therefore explains the cyanosis. It is likely that this cyanosis precipitated the lethal cardiac arrhythmia which eventually resulted in his death.'

- The fourth child was cared for by the Solihull Community Paediatrics Team. This was an expected death of a 14 year old girl who had Merosin Deficient Congenital Muscular Dystrophy (MD-CDM); an Advance Care Plan had been in place since October 2019. She had been gradually deteriorating over the last few weeks prior to her death. The patient died in March 2020.

5.3. Paediatric deaths that did not occur at the Trust

- As these paediatric deaths did not occur at the Trust, they are not included in the overall figures.

- The first child was brought into Good Hope Hospital had previously attended the Emergency Department in September and December 2019 with febrile seizures. He had also attended an outpatient clinic appointment after which there was a plan to have an EEG. This case was subject to a police investigation. At its next meeting CDRP will review attendances to Good Hope Hospital to identify if there were any missed safeguarding opportunities.

- The second child, a 14 year old boy was brought into the ED at Heartlands Hospital having been pronounced deceased by paramedics at the family home. This child had the rare disorder West Syndrome[2] and global development delay. He was known to the community palliative care team; the Police advised that they were not treating the death as suspicious.

[2] **West Syndrome:** West syndrome is a constellation of symptoms characterized by epileptic spasms, abnormal brain wave patterns and intellectual disability.