Oxford University Hospitals
NHS Foundation Trust

Public Trust Board Meeting: Wednesday 11 September 2024

TB2024.76

Title:	**Learning from deaths annual report 2023/24**

Status:	**For Information**
History:	**This is an annual paper to the Trust Board**

Board Lead:	**Chief Medical Officer**
Author:	**Jonathan Carruthers – Clinical Outcomes Manager,** **Helen Cobb – Head of Clinical Governance,** **Dr Rustam Rea – Director of Safety and Effectiveness, Deputy Chief Medical Officer**
Confidential:	**No**
Key Purpose:	**Assurance**

Executive Summary

1. During 2023/24 there were 2762 inpatient deaths reported at Oxford University Hospitals NHS Foundation Trust (OUH) with 2741 (99%) of cases reviewed within 8 weeks. All deaths have since been reviewed.
2. The Medical Examiners (ME) and Medical Examiner Officers service is well established at the Oxford University Hospitals NHS Foundation Trust (OUH) working closely with the Regional ME, the National ME and the Coroner's Office to extend the service to scrutinise deaths within the local hospices and in the community setting.
3. Key actions and learning points identified in mortality reviews completed during 2023/24 are presented to the Trust Board. This follows from the Quarterly reviews of Learning from Deaths which were presented in November 2023, January 2024, May 2024, and July 2024 - Board meetings and papers - Oxford University Hospitals (ouh.nhs.uk)

Recommendations

4. The Public Trust Board is asked to note the contents of this report for information.

Contents

Learning from deaths annual report 2023/24

1. Purpose

1.1. This paper summarises the key learning identified in the mortality reviews completed for 2023/24.

1.2. This report provides an annual overview of Trust-level mortality data and performance for the latest available Dr Foster Intelligence data, providing assurance that any highlighted concerns are investigated thoroughly, and appropriate action taken.

2. Background

2.1. OUH is committed to accurately monitoring and understanding its mortality outcomes; and to ensure any identified issues are effectively addressed to improve patient care. Reviewing mortality helps fulfil two of the five domains[1] set out in the NHS Outcomes Framework:

- Preventing people from dying prematurely.
- Treating and caring for people in a safe environment and protecting them from avoidable harm.

2.2. OUH uses the Hospital Standardised Mortality Ratio (HSMR) and Summary Hospital Level Mortality Indicator (SHMI) to compare mortality data nationally. Although these are not direct measures of the quality of care, benchmark outcome data help identify areas for investigation and potential improvement.

2.3. The Trust Mortality Review policy requires that all inpatient deaths are reviewed within 8 weeks of the death occurring.

2.4. All patients undergo a level 1 or level 2 mortality review. The level 1 review is allocated to the responsible Consultant via the electronic patient record (EPR). A minimum of 25% of Level 1 reviews are selected at random for a more comprehensive Level 2 review; (in many departments all deaths undergo a level 2 review). All (100%) of deaths undergo independent scrutiny from the Medical Examiner's office.

2.5. A comprehensive Level 2 review is also completed for all cases in which concerns are identified at the Level 1 review. The level 2 review is carried out by one or more consultants not directly involved in the patient's care. A structured judgement review (SJR) is required if the case complies with one of the mandated national criteria - NHS England » Learning from deaths in

[1] About the NHS Outcomes Framework (NHS OF) - NHS Digital

the NHS. This is completed by a trained reviewer not directly involved in the patient's care,

2.6. Each Division maintains a log of actions from mortality reviews (of any type) and monitors progress against these action plans. The clinical units are responsible for disseminating learning and implementing the actions identified.

2.7. Mortality related actions are reported quarterly to the Mortality Review Group (MRG) and included in Divisional quality reports presented to the Clinical Governance Committee (CGC).

2.8. The Divisions also provide updates to MRG on the previous quarter's actions as part of the next quarter's mortality report. MRG reports to the Clinical Improvement Committee (CIC).

3. Mortality reviews 2023/24

3.1. During 2023/24 there were 2762 inpatient deaths reported at OUH with 2741 (99%) of cases reviewed within 8 weeks.

Table 1: Number of mortality reviews 2023/24

Reporting period	Total deaths	Reviews completed within 8 weeks			Total reviews completed*
		Level 1	Level 2 & SJR	Total	
2022/23 (Q1-4)	2719	2625 (97%)	1349 (50%)	2625 (97%)	2692 (99%)
2023/24 (Q1-4)	2762	2731 (99%)	1294 (47%)	2741 (99%)	2762 (100%)

*including reviews completed after 8 weeks

3.2. Divisions with deaths which were not reviewed within 8 weeks (as per policy) were requested to complete a Level 1 screening review; compliance was monitored via MRG. All deaths during 2023/24 have now been reviewed.

3.3. All Structured Judgement Mortality Reviews (SJRs) for people with Learning Disabilities are presented at the monthly MRG.

4. Medical Examiner (ME) System

4.1. The purpose of ME system is to provide greater safeguards for the public by ensuring proper scrutiny of all non-Coronial deaths and appropriate direction of deaths to a Coroner; providing a better service for the bereaved and an opportunity for them to raise any concerns to a doctor not involved in the care of the deceased; and improving the quality of death certification and mortality data.

4.2. The MEs have been scrutinising deaths within the Acute Trust since June 2020.

4.3. This additional scrutiny has revealed the high quality of clinical notes on EPR. Feedback from the bereaved during telephone discussions reflect a generally high degree of satisfaction for the care provided by the Trust. Any concerns or compliments raised by MEs or the bereaved are fed back through the central Learning from Deaths email and then shared appropriately with clinical teams. Many of these incidents have already been recognised and referred to the Trust's Patient Safety processes or to the Patient Advice and Liaison Service (PALS).

4.4. The Medical Examiners have monthly meetings to review progress and discuss cases. The feedback received by the MEs from bereaved families as to how they are informed of the deaths of their relatives has led to discussion and review of processes clinically. Examples include escalation of reviews to Trust level structured review/appropriate Learning responses under the Patient Safety Incident Response Framework (PSIRF) and changes to death documentation processes.

4.5. The feedback received by the MEs has been shared promptly with the ward teams. This has raised the profile of the ME system within the Trust and clinical teams are recognising and appreciating the ME role as an independent part of the existing bereavement system.

4.6. The opportunity for families to discuss the care their relative received with an ME has been positively received.

4.7. The Lead Medical Examiner continues to meet with external stakeholders as part of the community roll out. Scrutiny of hospice deaths is fully established. Meetings with the local ICS and two neighbouring ME Offices are underway to allow introduction of the ME service to the Community. There is capacity among the MEs to start this with further recruitment of MEs and MEOs already under way. Several deaths from primary care have already been reported and scrutinised by the ME service. The majority of GP practices within Oxfordshire will have registered with the service by the end of July 2024.

4.8. Data on the activity of the Trust's ME service are submitted every quarter to the National Medical Examiner. The data for 2023/24 provides evidence of the successful roll-out of the ME service for scrutiny of acute deaths.

4.9. National developments of the ME Service:

4.10. Draft national guidance addressing the certification of death was published and released on 12 December 2023. This described a change of all processes governing the certification and registration of deaths in England and Wales with the ME Service at its core.

4.11. The draft guidance proposed an expanded role for the ME to include duties which had previously been undertaken by either the coroner, the referee for cremation or the registrar of deaths. At the time no implementation date was announced.

4.12. On 15 April 2024, the Under Secretary of State for Health laid before parliament The Medical Examiners (England and Wales) Regulations 2024 and announced that they would come into force on 9 September 2024. After this date, registration of any death will occur only after scrutiny by a coroner or a ME.

4.13. There are several changes to the process of certification and registration of a death, including the redesign and introduction of a new paper MCCD prior to the eventual introduction of a digital MCCD, the abolition of the form 100A and the cremation form 4. The responsibility to pass the completed MCCD to the registrar will now rest with the ME Office. The ME service continues to be funded centrally by NHS England, although some administrative costs may have to be provided locally. Oxfordshire ME Office was confirmed with an uplift to allow for anticipated additional hours working at weekends and bank holidays. With effect from April 2024, the budget will be managed through the ICB. The National ME has not yet published his annual report for 2023. Previous reports have included national data which can be helpful for local comparisons. Fortnightly updates from the National ME confirm that the increase in scrutiny of community deaths in England and Wales is proceeding at a slower rate than had been hoped.

4.14. Oxford University Hospitals NHS Trust has fulfilled all its responsibilities as Host Trust to the ME Service:

4.15. All the requested support to establish the ME Service has been delivered by the Host Trust. This included the support and facilities to prepare and introduce the electronic Referral System (eRS) for the service, which is being used by GPs to refer deaths as well as support and facilities to undertake the recruitment of staff.

4.16. The reporting of feedback from the ME or the bereaved is made to the Learning from Deaths (LfD) section of the Trust's Clinical Governance Team, whereby concerns may be passed on to other partner healthcare organisations or Trusts. A formal feedback form itemising the concerns passed on by the ME to LfD was successfully introduced in Q4.

4.17. The ME Service is invited to attend the monthly Mortality Review Group as an agenda item, allowing verbal and written updates regarding the ME Service to be discussed with the Lead ME.

4.18. The ME Service is principally a digital service. The EPR Death Notification Summary (DNS: used by the Trust to inform GPs about the death of their patient and provide vital information for coding of clinical episodes) is

the principal agreed means by which the MEs are informed of the cause of death proposed by the clinical team. When the scrutiny becomes statutory, the ME Service will require the DNS to have been written before scrutiny of the death can start.

4.19. Within the acute Trust, it is routine that all non-coronial deaths are scrutinised by an ME (100%). There is obvious overlap between the Medical Examiners' office and the coroner's office and there are frequent exchanges of information to ensure that each death is handled appropriately. Many coronial deaths, either accepted by the coroner or resulting in a form 100A, were also scrutinised by a ME.

4.20. All non-coronial child deaths within the Trust are being scrutinised. Deaths in the Neonatal intensive care unit are now being referred to the ME Office using the Trust's EPR. MEs now have access to the Badgernet programme (the electronic record recently introduced by the unit), which allows direct scrutiny of the notes of the deceased by an ME which had not previously been possible.

4.21. Hospices are viewed as community settings for the purposes of ME scrutiny. All deaths in the adult hospices, Sobell House and Katherine House, are being scrutinised (100%) with feedback also provided by use of the formal feedback form. This has also allowed the bereaved to provide feedback about care which may have preceded admission to the hospice.

4.22. The Regional ME has previously noted that the proportion of concerns raised by the ME Service is lower than those raised by other ME Offices in the Region. The opportunity to gain feedback from the bereaved at an early stage after the death is one of the principal benefits of the service. The ME Office is checking that all feedback is recorded by the MEs and that the threshold for raising concerns and for passing on praise is appropriate. The introduction of a specific form for MEs to record feedback or concerns to the Learning from Deaths team was introduced during Q4 and has made the auditing of feedback more accurate.

4.23. With the support of the local ICB and LMC, a referral pathway for GPs to use when referring deaths digitally to the ME Service using the eRS system has been designed and successfully launched.

4.24. The ME Service has undertaken webinars and teaching sessions as well as visits to pilot sites to launch the system for GP practices in advance of the statutory date.

4.25. There will remain some organisations who will not be able to use the eRS system (eg Oxford Health Trust, private providers) who will refer deaths to the ME Service by e-mail.

4.26. The Medical Examiner Officers (MEOs) have worked closely with the teams at the adult hospices. This has ensured that 100% of non-coronial deaths in the adult hospices are being scrutinised. This has also allowed some of the bereaved to feedback about care in the deceased's care pathway prior to the involvement of the palliative care team. Scrutiny of deaths for 2023/24 can be seen below:

Scrutiny of acute deaths 2023-24	Q1	Q2	Q3	Q4	**Total**
Adult deaths scrutinised					
Non-coronial	443	473	604	566	**2087**
Referred to coroner with issue of part 100-A	63	50	59	44	**216**
Referred and accepted by the coroner	26	25	30	34	**115**
Children's deaths scrutinised					
Non-coronial	3	6	4	8	**21**
Urgent release of MCCD requested: achieved/not achieved	11/1	7/0	7/0	16/0	**41/1**
MCCD completed more than 3 days after death	98	78	129	24	**329**
MCCD rejected by the Registrar after ME scrutiny	2	0	0	3	**5**
No contact with the bereaved	32	14	15	24	**85**
Significant concerns raised by ME or by the bereaved	0	1	1	14	**16**
Concerns passed to Clinical Governance processes (ie Learning from Deaths)	12	5	14	13	**44**
Concerns raised which where contact with PALS was advised	3	5	3	4	**15**
Community deaths Scrutinised					
Adult Hospices	139	137	180	125	**581**

5. Examples of learning & actions from mortality reviews by quarter

5.1. **In quarter one:** Early communication to the families when a patient is at the end of life remained a recurring theme. 5th OUH End of Life Care Symposium took place on 11 May 2023, covering a variety of subjects around Palliative and End of Life Care (EOLC). This was part of the scheduled events for the annual 'Dying Matters Week' held by Hospice UK which aims to create an open culture in which we're comfortable talking about death, dying and grief as well as equipping professionals with the knowledge and skills to improve the quality of all palliative and end of life care.

5.2. **In quarter two:** The mortality review policy was updated. One key update was the addition of the process OUH must follow when a patient dies externally to the trust with OUH involvement during the treatment pathway. Clearer guidance relating to Mortality and Morbidity (M&M) meetings and frequency was also

added to the policy. This update was discussed at the January 2024 MRG meeting to ensure consistency across the organisation. This has seen an increase in reviews undertaken across the trust in quarters 3 and 4.

5.3. **In quarter three:** A review of issues and/or themes was completed of all patients who died during periods of industrial action in MRC Division. Feedback was provided to MRG as part of the quarter four Divisional update. No care quality concerns were identified.

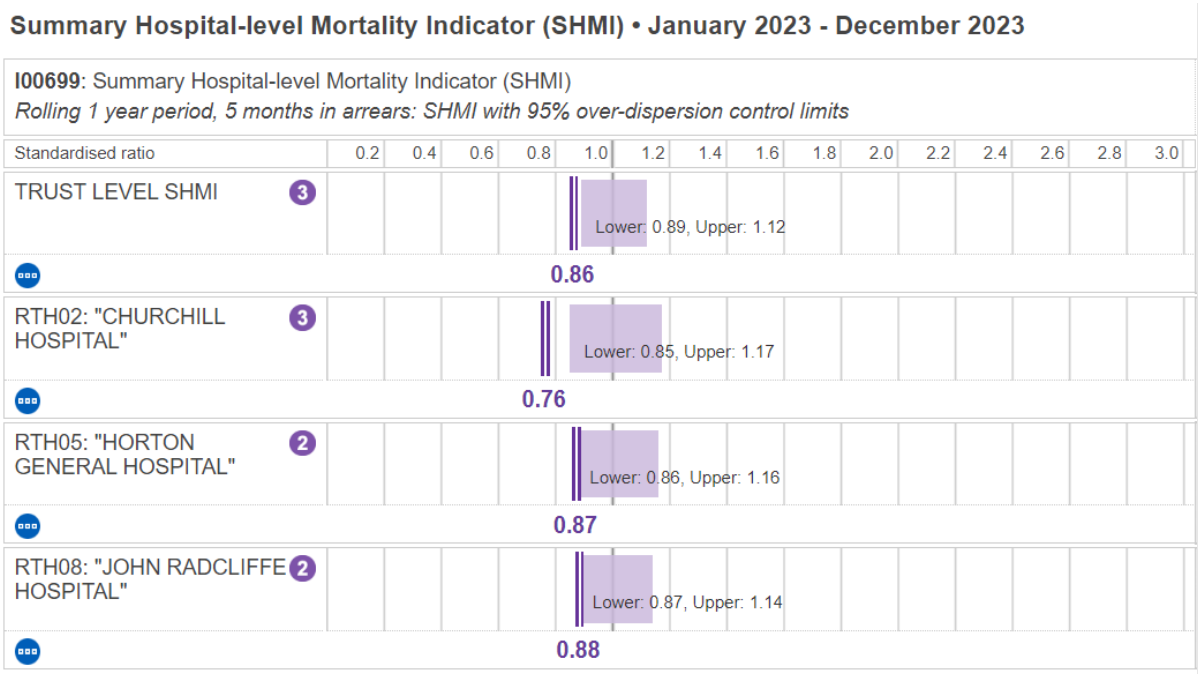
5.4. **In quarter four:** A theme was identified where transfer to the OUH was delayed or not appropriate in some cases, most notably in the vascular service. Informative feedback has been provided to referring hospitals and this theme has been flagged to the Buckinghamshire, Oxfordshire & Berkshire West Integrated Care Board (BOB ICB). A hospital transfer Standard Operating Procedure and associated proforma which captures the essential information required to transfer a patient safely has been developed and co-designed with partner organisations to improve this process. This recent action is now complete and will be monitored to ensure it is effective.

5.5. Learning from Deaths reports with all identified learning for each quarter can be found here - Board meetings and papers - Oxford University Hospitals (ouh.nhs.uk).

6 Summary Hospital-level Mortality Indicator (SHMI) and Hospital Standardised Mortality Ratio (HSMR)

6.1 There have been no negative mortality outliers reported for OUH from the Care Quality Commission (CQC) or the Dr Foster Unit OUH level HSMR. The Trust level SHMI for the latest data period is 0.86. This is rated ‘lower than expected.’ Chart 1 depicts the SHMI by site.

Chart 1: SHMI by site



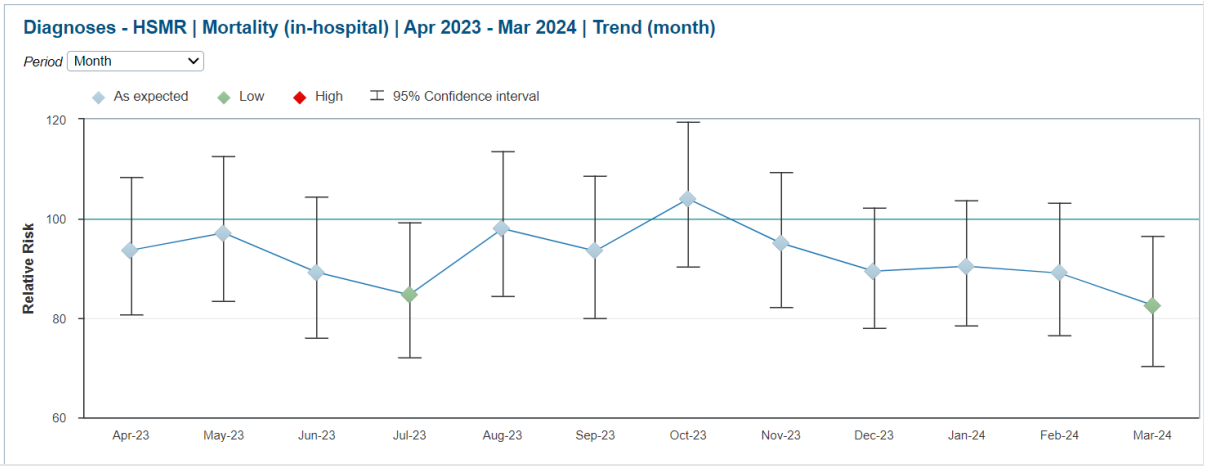
6.2 The HSMR is 92.2 for the data period April 2023 to March 2024. This is rated as 'lower than expected.' Chart 2 depicts the HSMR trend. The HSMR has remained rated 'lower than expected.' Differences between the HSMR and SHMI can be seen in Appendix 1.

6.3 Due to the levels of activity recorded at the NOC a standalone SHMI value is not available. Dr Foster can produce a HSMR and for the NOC this is currently 32 and rated as 'lower than expected'.

6.4 COVID-19 activity is excluded from the SHMI. NHS Digital have advised that the SHMI is not designed for this type of pandemic activity and the statistical modelling used to calculate the SHMI may not be as robust if such activity were included. Activity that is being coded as COVID-19, and therefore excluded, is monitored in a new contextual indicator 'Percentage of provider spells with COVID-19 coding'.

6.5 Admissions and deaths split by deprivation quintiles can be seen in each of the quarterly learning from death reports found here - Board meetings and papers - Oxford University Hospitals (ouh.nhs.uk)

Chart 2: HSMR trend & Shelford Group comparison



The Shelford Group *

Title	CUSUM	Vol	Obs	Exp	%	Relative risk	Trend
SHEFFIELD TEACHING HOSPITALS NHS FOUNDATION TRUST	1	98195	2170	1924.6	2.2	112.8	
UNIVERSITY HOSPITALS BIRMINGHAM NHS FOUNDATION TRUST	34	137495	4045	4349.9	2.9	93.0	
KING'S COLLEGE HOSPITAL NHS FOUNDATION TRUST	10	53035	1875	2016.8	3.5	93.0	
OXFORD UNIVERSITY HOSPITALS NHS FOUNDATION TRUST	10	73082	2185	2371.1	3.0	92.2	
THE NEWCASTLE UPON TYNE HOSPITALS NHS FOUNDATION TRUST	6	84260	1640	1825.7	1.9	89.8	
MANCHESTER UNIVERSITY NHS FOUNDATION TRUST	25	91085	2560	2918.1	2.8	87.7	
UNIVERSITY COLLEGE LONDON HOSPITALS NHS FOUNDATION TRUST	11	53305	675	842.0	1.3	80.2	
CAMBRIDGE UNIVERSITY HOSPITALS NHS FOUNDATION TRUST	39	61025	1265	1673.7	2.1	75.6	
IMPERIAL COLLEGE HEALTHCARE NHS TRUST	39	71095	1440	1908.4	2.0	75.5	
GUY'S AND ST THOMAS' NHS FOUNDATION TRUST	23	43105	615	850.5	1.4	72.3	

Table 1 – HSMR diagnoses with the highest numbers of deaths:

6.6 The major aims of the control charts are to keep the process on target. The "cumulative sum" in this type of chart is the sum of the deviations of individual sample results or subgroup averages from the target.

6.7 A red bell indicates a negative alert has been identified for the diagnosis group during the reporting period selected.

6.8 A green bell indicates a positive alert has been identified for the diagnosis group during the reporting period selected.

Relative risk & CUSUM alerts

Title	CUSUM	Vol	Obs	Exp	%	Relative risk	Trend
All Diagnoses	11 10	205684	2774	2977.2	1.3	93.2	
HSMR (56 diagnosis groups)	10	73082	2185	2371.1	3.0	92.2	
Pneumonia	9	3724	243	352.1	6.5	69.0	
Acute cerebrovascular disease		1466	225	223.3	15.3	100.8	
Septicemia (except in labour)	1	952	175	185.8	18.4	94.2	
Secondary malignancies	1	1806	107	79.9	5.9	133.9	
Congestive heart failure, nonhypertensive	2	1394	97	119.9	7.0	80.9	
Aspiration pneumonitis, food/vomitus		360	96	105.9	26.7	90.7	
Intracranial injury		661	71	72.7	10.7	97.6	
Cancer of bronchus, lung		685	65	54.9	9.5	118.4	
Chronic obstructive pulmonary disease and bronchiectasis		1688	57	67.1	3.4	84.9	
Acute myocardial infarction		1167	56	63.3	4.8	88.4	

Table 2 – HSMR diagnoses with the lowest numbers of deaths:

Relative risk & CUSUM alerts

Title					CUSUM	Vol	Obs	Exp
All Diagnoses					10 8	192663	2653	2877.9
Cystic fibrosis		355	1	1.0	0.3	101.6		
Coma, stupour, and brain damage		49	1	5.4	2.0	18.4		
Coagulation and haemorrhagic disorders		281	1	1.7	0.4	59.1		
Cancer of thyroid		117	1	1.3	0.9	78.5		
Cancer of other urinary organs		30	1	1.4	3.3	70.9		
Cancer of cervix		114	1	1.2	0.9	86.6		
Calculus of urinary tract		1293	1	0.4	0.1	255.8		
Burns		26	1	0.4	3.8	258.8		
Alcohol-related mental disorders		299	1	1.1	0.3	92.8		
Abdominal pain		4096	1	1.9	0.0	53.9		

6.9 The Trust HSMR is benchmarked:

- 5th of 8 acute non-specialist peers
- 3rd of 7 peers with on-site hospice
- 4th of 10 teaching trusts with similar volume

Table 3 – HSMR Teaching Hospitals:

Benchmarking peers Teaching Hospitals *

Title	CUSUM	Vol	Obs	Exp	%	Relative risk	Trend
NOTTINGHAM UNIVERSITY HOSPITALS NHS TRUST	2 2	95660	2760	2412.0	2.9	114.4	
LEEDS TEACHING HOSPITALS NHS TRUST	2 1	57480	2285	2020.0	4.0	113.1	
SHEFFIELD TEACHING HOSPITALS NHS FOUNDATION TRUST	1	98195	2170	1924.6	2.2	112.8	
BARTS HEALTH NHS TRUST	2	62800	2260	2120.1	3.6	106.6	
NORFOLK AND NORWICH UNIVERSITY HOSPITALS NHS FOUNDATION TRUST	3	73205	2150	2076.6	2.9	103.5	
KING'S COLLEGE HOSPITAL NHS FOUNDATION TRUST	10	53035	1875	2016.8	3.5	93.0	
OXFORD UNIVERSITY HOSPITALS NHS FOUNDATION TRUST	10	73082	2185	2371.1	3.0	92.2	
THE NEWCASTLE UPON TYNE HOSPITALS NHS FOUNDATION TRUST	6	84260	1640	1825.7	1.9	89.8	
UNIVERSITY COLLEGE LONDON HOSPITALS NHS FOUNDATION TRUST	11	53305	675	842.0	1.3	80.2	
IMPERIAL COLLEGE HEALTHCARE NHS TRUST	39	71095	1440	1908.4	2.0	75.5	

7 Corporate Risk Register and related Mortality risks

7.1 Relevant mortality risks from the Corporate Risk Register can be seen below:

7.1.1 Failure to care for patients correctly across providers at the right place at the right time.

7.1.2 Trust-wide loss of IT infrastructure and systems (e.g., from Cyber-attack, loss of services etc).

7.1.3 Failing to respond to the results of diagnostic tests.

7.1.4 Patients harmed because of difficulty finding information across two different systems (Paper and digital).

7.1.5 Potential harm to patients, staff, and the public from nosocomial COVID-19 exposure.

7.1.6 Lack of capacity to meet the demand for patients waiting 52 weeks or longer.

7.1.7 Ability to achieve the 85% of patients treated within 62 days of cancer diagnose across all tumour sites.

8 Mortality Review Governance

8.1 A quarterly summary of Directorate and Divisional mortality reports from their respective mortality and morbidity reviews are presented to the monthly MRG Chaired by the Director of Patient Safety and Effectiveness.

8.2 Monthly MRG summary reports are then presented to CIC which is Co-Chaired by the Director of Clinical Improvement and a Divisional Nurse.

8.3 CIC reports to CGC), Chaired by the Chief Medical Officer or the Chief Nursing Officer.

8.4 CGC reports via Trust Management Executive to the Integrated Assurance Committee (subcommittee of the Trust Board).

9 Conclusion

5.6. In accordance with national mortality guidance, the Trust has implemented a revised Mortality Review policy and implemented structured mortality reviews since 2017/18. This paper summarises the learning identified in the mortality reviews completed during 2023/24.

9.1 The Medical Examiner role is well established, with good working process, governance and continues to see an increase in the quantity of reviews undertaken.

5.7. Compliance with the learning from deaths policy is well established, with consistently high levels of mortality reviews undertaken within 8 weeks and appropriate Trust wide learning shared accordingly.

10 Recommendations

10.1 The Public Trust Board is asked to note the contents of this report for information.

Appendix 1: Key differences between the SHMI and HSMR

a) The Trust references two mortality indicators: the SHMI, which is produced by NHS Digital and the HSMR produced by Dr Foster Intelligence.

b) Both are standardised mortality indicators, expressed as a ratio of the observed number of deaths compared to the expected number of deaths adjusted for the characteristics of patients treated at a Trust.

c) While both mortality indicators use slightly different methodology to arrive at the indicator value; both aim to provide a risk adjusted comparison to a national benchmark (1 for SHMI or 100 for HSMR) to ascertain whether a trust's mortality is 'as expected', 'lower than expected' or 'higher than expected'.

Table 6: Key differences between the SHMI and HSMR

Indicator	Summary Hospital-level Mortality Indicator (SHMI)	Hospital Standardised Mortality Ratio (HSMR)
Published by	NHS Digital	Dr Foster Intelligence
Publication frequency	Monthly	Monthly
Data period to calculate indicator value.	Rolling 12-month period for each release, approximately five months in arrears.	Provider-selected period, up to three months in arrears
Coverage	Deaths occurring in hospital or within 30 days of discharge. All diagnosis groups excluding stillbirths. Day cases and regular attenders are excluded.	In-hospital deaths for 56 selected diagnosis groups that accounts for 80% of in-hospital mortality. Regular attenders are excluded.
Assignment of deaths	Deaths that happen post transfer count against the transfer hospital (acute non-specialist trusts only).	Includes deaths that occur post transfer to another hospital (superspell effect).
Palliative Care	Not adjusted for in the model.	Adjusted for in the model.
Casemix adjustment	8 factors: diagnosis, age, sex, method of admission, Charlson comorbidity score, month of admission, year, birth weight (for individuals aged <1 year in perinatal diagnosis group).	12 factors: admission type, age, year of discharge, deprivation, diagnosis subgroup, sex, Charlson comorbidity score, emergency admissions in last comorbidity score, emergency admissions in last 12 months, palliative care, month of admission, source of admission, interaction between age on admission group and comorbidity admission group.