

Executive Summary
Report to the Board of Directors
Being Held on 31 January 2023

Subject	Learning from Deaths Report – Q1 2022/23
Supporting TEG Member	Jennifer Hill, Medical Director (Operations)
Author	Simon Buckley, Deputy Medical Director Janet Brain, Senior Manager (Clinical Effectiveness) Rachel Honeywood, Learning from Deaths Facilitator (Clinical Effectiveness) Louise Wake, Senior Clinical Effectiveness Facilitator (Clinical Effectiveness)
Status¹	A

PURPOSE OF THE REPORT

This is the quarterly report to the Board of Directors on the deaths of patients under the care of Sheffield Teaching Hospitals NHS Foundation Trust (STHFT) as required by the Learning from Deaths Guidance dated March 2017 covering Q1 of 2022/23 (1st April – 30th June 2022). It also includes current data on crude mortality, HSMR and SHMI metrics and presents key metrics on the mortality case review process for 2022/23.

KEY POINTS

There have been 2,843 deaths at the Trust between July 2021 and June 2022 and 160 of the 172 requested SJRs have been completed. Five SJRs were rejected because of inappropriate referral.

Over the past 12 months, crude mortality shows a pattern of common cause variation for total deaths, deaths in ED, inpatient deaths, elective deaths and non-elective deaths. When compared with national benchmarks overall mortality is lower, mortality following elective admissions is equivalent and non-elective mortality is higher.

The 12-month rolling Hospital Standardised Mortality Ratio (HSMR) from 1st September 2021 – 31st August 2022 was 111.1 (106.5-115.9) and banded statistically 'higher than expected' following Dr Foster rebasing against benchmark month May 2022.

The Business-as-Usual model for investigating any HSMR alerting groups has continued, though following review in response to the raised HSMR data, quality issues have been identified. Remedial actions have been put in place. The HSMR Working Group, working with the clinical teams, continues to investigate underlying data issues impacting the HSMR model, including any alerting diagnosis groups.

The Trust Summary Hospital-level Mortality Indicator (SHMI) value is 0.98 for the period August 2021 to July 2022 and banded "as expected". One diagnosis group is banded 'higher than expected'.

The Q1 Learning from Deaths section considers deaths at STHFT in the period 1st April – 30th June 2022 as follows:

- Total no. adult deaths at STHFT: 691
- Total no. adult deaths subject to Structured Judgment Review (SJR): 47
- Of the deaths subject to SJR in Q1, the number of deaths judged more likely than not to be due to a problem in care: 0
- Total number of deaths judged more likely than not to be due to a problem in care, following completion of a serious incident investigation during Q1: 4

45 of 55 referrals for SJR in Q1 have been completed. Four SJRs were rejected due to inappropriate referral. One case scored below three. The majority of care scores are adequate, good or excellent.

During Q1 there were four deaths identified via the SI process which were judged more likely than not to be due to problems in care and the Trust received one Prevention of Future Deaths Report under regulation 28.

Learning points/actions taken from the four SJRs reviewed by the Mortality Governance Committee (MGC) in Q1 with an overall care score of one or two involved the transfer of care to the appropriate specialty, frequency of nursing observations, provision of specialist nursing care, communication between specialties and review of deteriorating patients. All four SJRs discussed at MGC in Q1 relate to deaths subject to SJR in previous quarters.

There is one mortality outlier status from a national audit which is the National Hip Fracture Data NHFD (until they publish new 30-day adjusted mortality in January 2023). Crude mortality has decreased since the outlier status was last published.

IMPLICATIONS²

Aim of the STHFT Corporate Strategy		✓ Tick as appropriate
1	Deliver the Best Clinical Outcomes	✓
2	Provide Patient Centred Services	✓
3	Employ Caring and Cared for Staff	✓
4	Spend Public Money Wisely	
5	Deliver Excellent Research, Education & Innovation	
6	Create a Sustainable Organisation	

RECOMMENDATIONS

The Board of Directors is requested to approve the content of the report.

APPROVAL PROCESS

Meeting	Date	Approved Y/N
Trust Executive Group	11 th January 2023	Y
Quality Committee	16 th January 2023	Y
Board of Directors	31 st January 2023	

¹Status: A = Approval, A* = Approval & Requiring Board Approval, D = Debate, N = Note

²Against the six aims of the STHFT Corporate Strategy 'Making a Difference – The next Chapter 2022-27'

Sheffield Teaching Hospitals NHS Foundation Trust

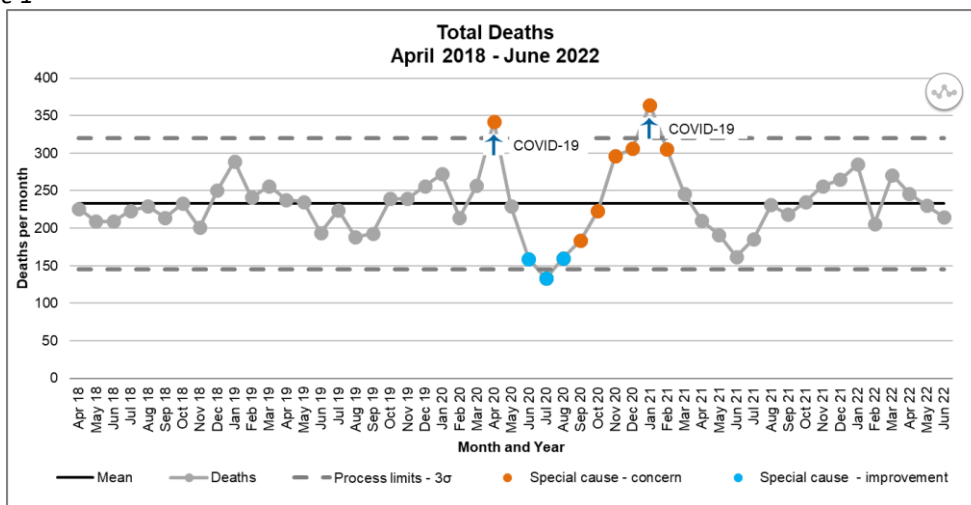
LEARNING FROM DEATHS QUARTERLY REPORT

2022/23 Quarter 1

1. Number of deaths by month – Crude mortality

- 1.1. There were 2,843 deaths in Sheffield Teaching Hospitals Foundation Trust (STHFT) between July 2021 and June 2022, of which 6% (159) were in the ED and 94% (2,684) were inpatient deaths (*Source: Information Services Report 'Deaths in Hospital'*).
- 1.2. Figure 1 identifies two special cause concerning variations (single points) in April 2020 and January 2021, which correspond with the first and second waves of COVID-19 pandemic. A special cause improving variation was identified in July 2020, indicating a reduced death rate which is in line with data reported nationally. A pattern of common cause variation has been seen since March 2021.

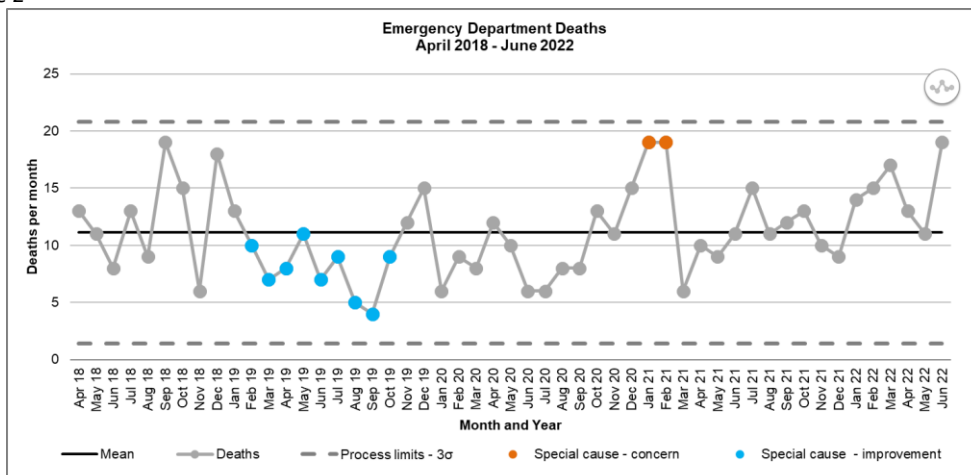
Figure 1



Source: Information Services Report 'Deaths in Hospital' (accessed 09/11/2022)

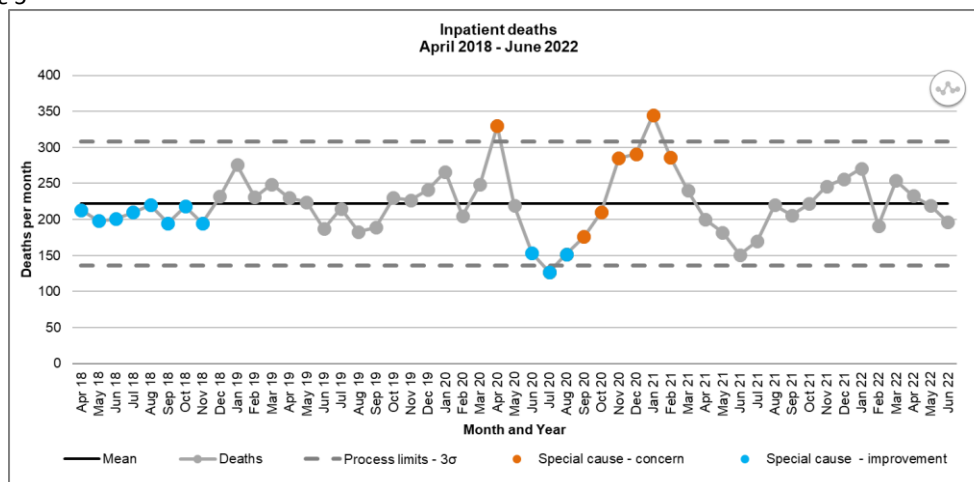
- 1.3. For September 2021 to August 2022 the crude mortality rate for STHFT was 2.5% when compared with 3.3% for all acute, non-specialist trusts (based on spells). When split by admission method, the crude mortality was 0.1% for elective admissions and 6.6% for non-elective admissions, compared with 0.1% and 6.1% respectively (*Source: Healthcare Intelligence Portal, Dr Foster Intelligence*). Hence Dr Foster data indicates that non-elective crude mortality is higher than the national average (comparing with others) but Figure 1 shows common cause variation for STH (comparing with our own previous performance).
- 1.4. Figure 2 shows Emergency Department deaths only, from April 2018 to June 2022 in a pattern of common cause variation since March 2021.

Figure 2



- 1.5. Figure 3 shows inpatient deaths only, from April 2018 to June 2022. The pattern mirrors that observed for total deaths.

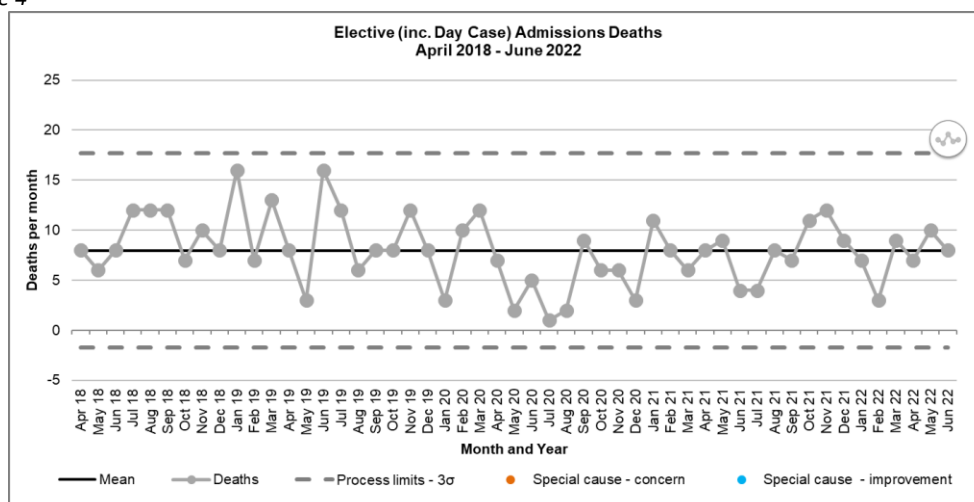
Figure 3



Source: Information Services Report 'Deaths in Hospital' (accessed 09/11/2022)

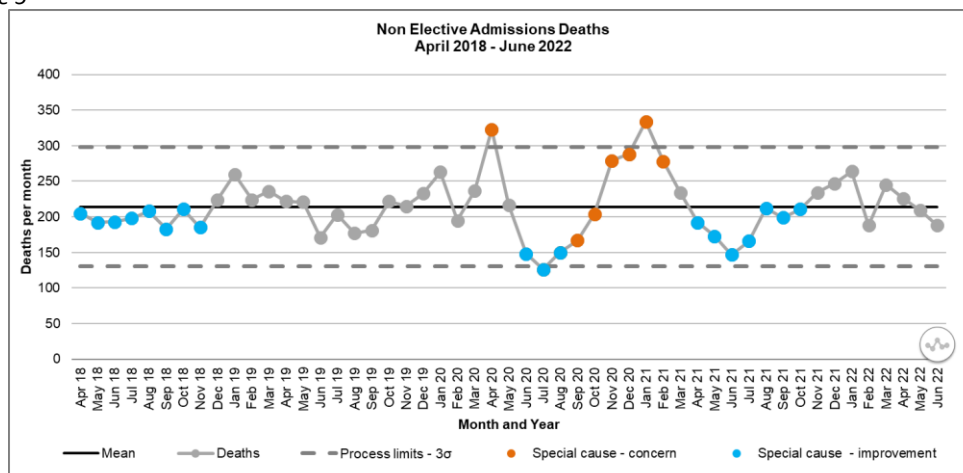
- 1.6. Crude mortality following elective admission shows common cause variation (Figure 4) throughout the pandemic. Crude mortality following non-elective admission (Figure 5) follows a similar pattern to those seen in Figures 1 and 3 as most deaths occur following non-elective admissions.

Figure 4



Source: Information Services Report 'Deaths in Hospital' (accessed 09/11/2022)

Figure 5



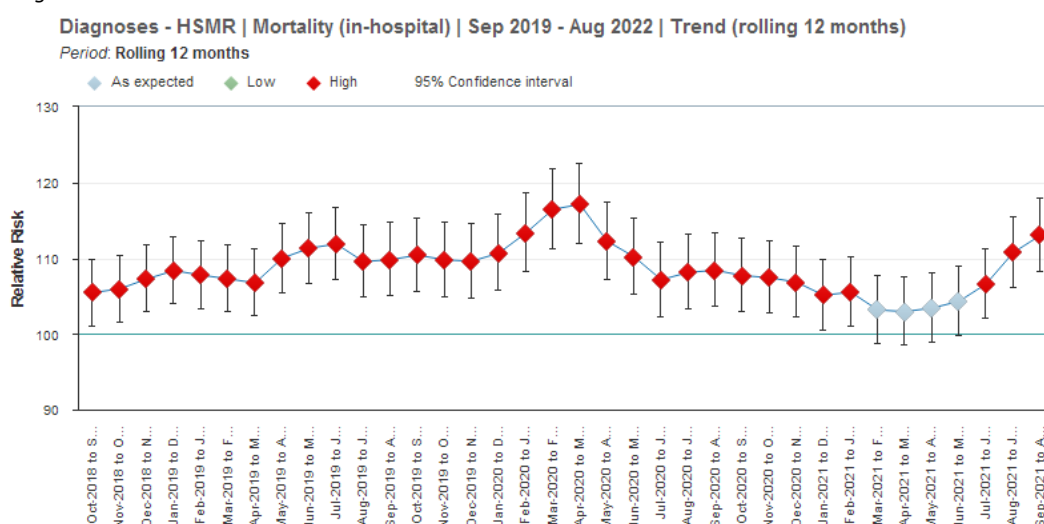
Source: Information Services Report 'Deaths in Hospital' (accessed 09/11/2022)

- 1.7. In summary, when comparing previous performance, crude Trust mortality since recovery from the height of the pandemic has returned to a pattern of common cause variation for total deaths, deaths in ED, inpatient deaths and non-elective deaths. A pattern of common cause variation for elective admissions has been prevalent pre, during and post pandemic.
- 1.8. When compared with national benchmarks whilst overall mortality is lower and elective mortality is equivalent, mortality following non-elective admission is higher at 6.6 percent vs. a national average of 6.1 percent (non-elective admission is higher for four other Major Trauma Centres – Leeds Teaching Hospitals NHS Trust 7.7 percent, Nottingham University Hospitals NHS Trust 6.9 percent, Liverpool University Hospitals NHSFT 6.8 percent, Kings College Hospitals NHSFT 7.1 percent).

2. Hospital Standardised Mortality Ratio (HSMR)

- 2.1. The 12-month rolling HSMR from 1 September 2021 to 31 August 2022 published on 14th December at **111.1 (106.5-115.9)** and banded statistically 'higher than expected' (benchmark month: June 2022) is shown in Figure 6 (running higher than expected prior to, during and post the Covid-19 pandemic).

Figure 6



Source: Healthcare Intelligence Portal, Dr Foster Intelligence

- 2.2. Excluding spells with secondary COVID-19 codes the Trust HSMR for the same period was 107.4 and banded as statistically 'higher than expected'. Patients with secondary Covid-19 within the HSMR basket represented 1.7% of admissions (1,542 super-spells, 226 deaths) at the Trust.
- 2.3. STHFT is one of 12 trusts in the regional peer group with an HSMR banded as statistically 'higher than expected' over the 12-month period.
- 2.4. Several issues have been highlighted by a HSMR task and finish group that could be affecting the HSMR data model. A 'business as usual' model validates, corrects, and improves data recording and clinical coding, working closely with clinical teams. The HSMR model was not designed to respond to a pandemic, so caution is required when interpreting data from this period. Covid activity is included in the HSMR. Dr Foster is proposing changes to the model which include extending and reviewing the 56 diagnosis groups in the HSMR basket, a change of deprivation index from Carstairs to IMD, a move from Charlson Co-Morbidity Index to Elixhauser and a change to coding of palliative status.
- 2.5. Table 1 shows the split between elective and non-elective admissions (emergency admission mortality figures are shown as a subset of non-elective admissions) with trend graphs in figures 7 and 8. The 'higher than expected' relative risk is notable for non-elective admissions.

Table 1

Sheffield Teaching Hospitals Admission Type	Superspells	Observed Deaths	Expected Deaths	Rolling 12 months HSMR
All Admissions	88,351	2,204	1,983.3	111.1 (106.5-115.9)
Elective Admissions	55,873	64	64.5	99.2 (76.4-126.7)
Non-Elective Admissions	32,560	2,140	1,918.8	111.5 (106.8-116.4)

Source: Healthcare Intelligence Portal, Dr Foster Intelligence

Figure 7

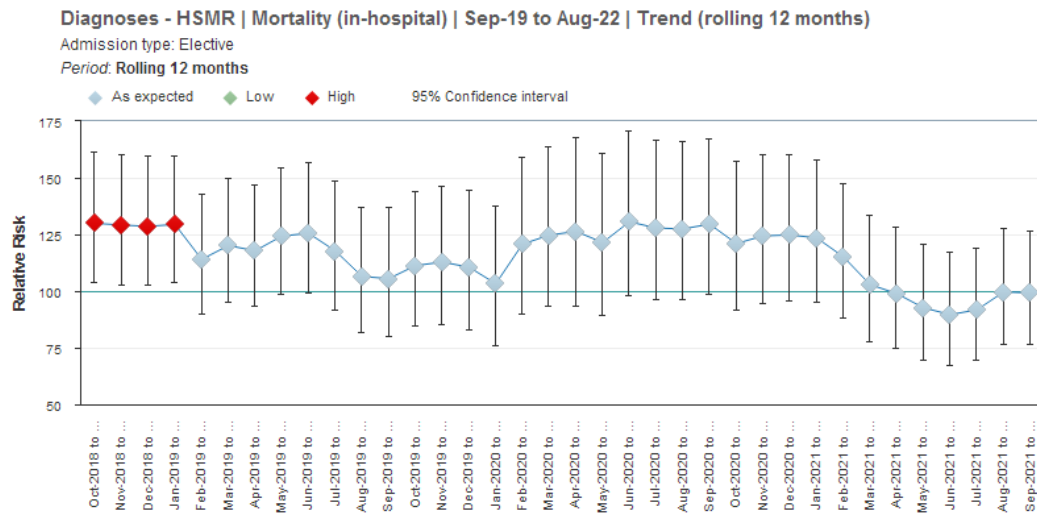
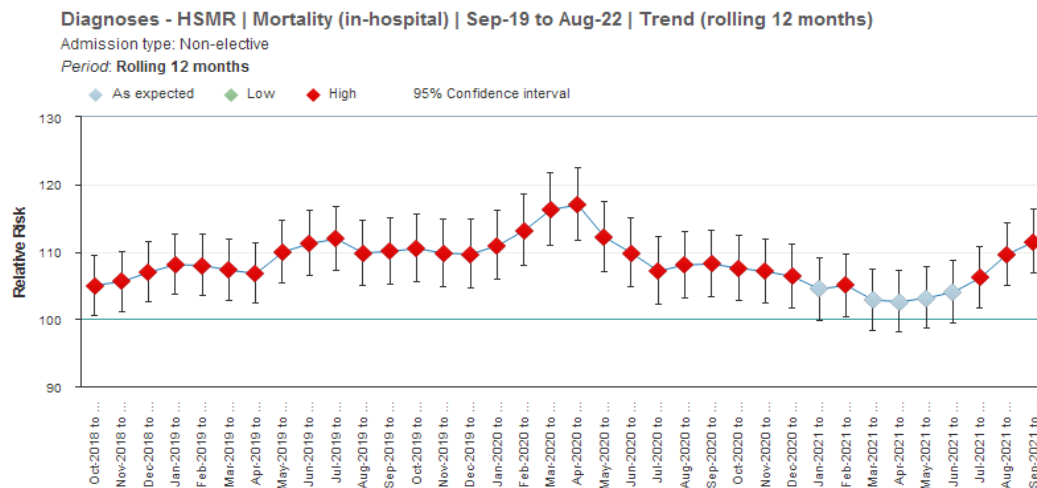


Figure 8



Source of Figures 8 and 9: Healthcare Intelligence Portal, Dr Foster Intelligence

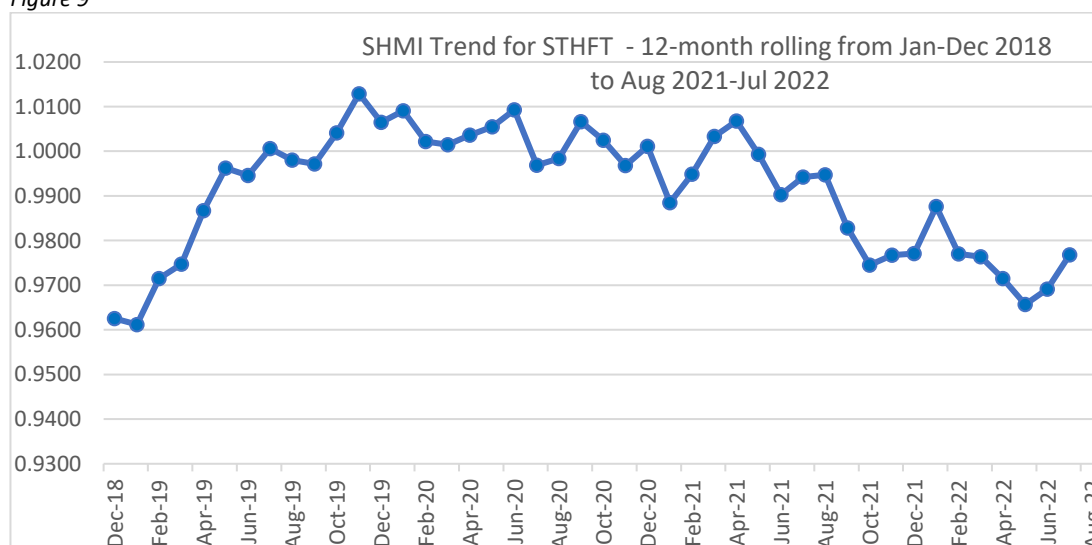
2.6. For the 12-month period five HSMR diagnosis groups continued to have a relative risk banded as statistically 'higher than expected' (detailed in the Q4 report 2021/22 and investigations underway - Acute MI has resolved) and three new groups were added and are undergoing initial data review (refer Table 1).

- Chronic obstructive pulmonary disease and bronchiectasis
- Leukaemias
- Septicaemia (except in labour) – subsequently resolved

3. Summary Hospital-level Mortality Indicator (SHMI)

- 3.1. The Trust SHMI value for the period August 2021 to July 2022 was **0.98** and banded “as expected” with an expected number of deaths of 3170 versus an observed 3100. A breakdown by site shows Royal Hallamshire (0.741) and Weston Park Hospitals (0.680) ‘lower than expected’ with Northern General Hospital (1.074) in the ‘as expected’ banding. The crude mortality rate for elective admissions, as reported, is in line with the national average at 1.0 percent. The crude mortality rate for non-elective admissions is slightly higher at STHFT compared to the national average (3.5 vs 3.4 per cent).
- 3.2. A greater proportion of STHFT SHMI deaths occur in hospital (73 percent) compared with the national average of 69 percent. 27 percent of deaths occurred outside hospital within 30 days of discharge.
- 3.3. There has been a fall in the number of spells from March 2020 onwards due to COVID which is excluded. STHFT figure for August 2021 to July 2022 is 88 percent of pre pandemic (January 2019 – December 2019) activity compared with an England average of 86 percent (elective spells 76 percent and non-elective spells 91 percent). 4.5 percent of STHFT activity has been coded as COVID-19 during the 12-month period and therefore excluded, slightly higher than the last quarter of 3.8 percent (national average 4.6 percent).
- 3.4. The percentage of spells with palliative care coding has remained at 2.1 percent – slightly higher than the national average of 1.9 percent (national range 0.6 to 3.7 percent). The percentage of deaths with palliative care coding is comparative to the national average of 40 percent (national range 11 to 65 percent).
- 3.5. For a subset of 10 diagnosis groups a SHMI value and banding is calculated. All are ‘as expected’ or ‘lower than expected’ (UTI) for STHFT except Fracture of neck of femur which remains ‘higher than expected’ at 1.39, though slightly down from 1.41.
- 3.6. Sheffield has a higher than national average percentage of provider spells in deprivation quintile 1 (most deprived, 39.9 vs 23.2) and lower representation in groups 2 to 5 and this will impact mortality rates. 37 percent of deaths at STHFT are from deprivation quintile 1 compared with a national average of 21 percent.
- 3.7. Figure 9 depicts the SHMI trend since 2018.

Figure 9



Source: NHS Digital

4. Data from National Audits

This section reports on national clinical audits where the Trust has been notified of outlier status.

4.1. National Hip Fracture Database

- 4.1.1. Since the NHFD was set up, there has been a steady improvement in the number of people surviving a hip fracture, but a proportion of the frailest will die in the weeks following this injury.
- 4.1.2. In December 2020, the Trust was reported to be in outlier status for 30-day adjusted mortality (previously explained). However, no further information has been published to date on adjusted mortality.
- 4.1.3. Figure 10 is taken from the NHFD website shows the proportion of patients who die in the first 30 days (indicative only).
- 4.1.4. Annual data up to December 2021 states that crude 30-day mortality for the Northern General Hospital site was 8.4% compared to 6.6% nationally – a fall from the position in December 2020.
- 4.1.5. In January 2023 we are anticipating NHFD to report the 30-day adjusted mortality and this will confirm whether or not the Trust has moved out of outlier status.

Figure 10

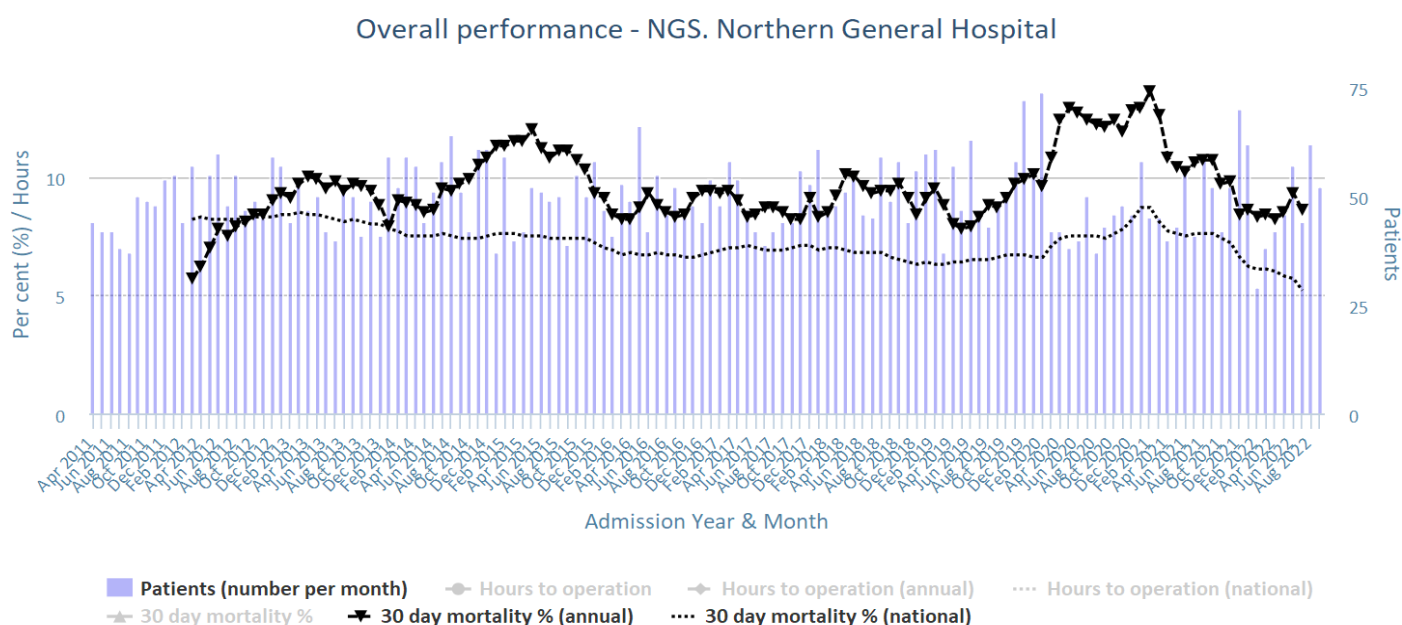


Chart data is indicative status only - www.nhfd.co.uk (c) Royal College of Physicians - Technology by Crown Informatics

Mortality Case Review Process – Structured Judgement Review (SJR)

Table 2 below shows a summary of learning from deaths key performance indicators (KPIs) over the previous 12 months.

Table 2 (Note – the figures in columns 3 and 4 do not correlate to any other figures due to the time interval between death and outcome of investigations, Inquest, etc. The Information Services Report ‘Deaths in Hospital’ has been re-run for all months shown in the table and shows some variation from the figures in previous LfD reports)

KPI	1	2				3	4
	No. of deaths in month	No. of deaths referred for SJR	SJR completion rate	SJR overall care score 3-5	SJR overall care score 1-2	Deaths more likely than not due to problems in care (by date of SI Group decision)	Regulation 28 issued
Jul-21	185	9	100% (9/9)	9	0	0	0
Aug-21	231	16	100% (16/16)	16	0	0	0
Sept-21	218	12*	100% (11/11)	11	0	0	0
Oct-21	235	9	100% (9/9)	9	0	0	0
Nov-21	256	17	100% 17/17	17	0	0	0
Dec-21	265	10	100% (10/10)	7	3	1 ⁺ (Death from Aug-21)	0
Jan-22	285	16	100% (16/16)	14	2	0	0
Feb-22	206	13	100% (13/13)	13	0	0	0
Mar-22	271	15	93%** (14/15)	12	2	0	0
Apr-22	246	19*	94%** (17/18)	17	0	0	1
May-22	230	22*	90%** (19/21)	19	0	4	0
Jun-22	215	14*	75%** (9/12)	8	1	0	0

Source: Datix PALS, Datix Incidents and Datix Claims

NB: One SJR scoring 2 from March 2022 and one scoring 2 from June 2022 are yet to be reviewed by MGC ⁺ Detailed in Q3 2021/22 Mortality Report

* Where total deaths referred for SJR differs from total in completion column, SJRs were rejected.

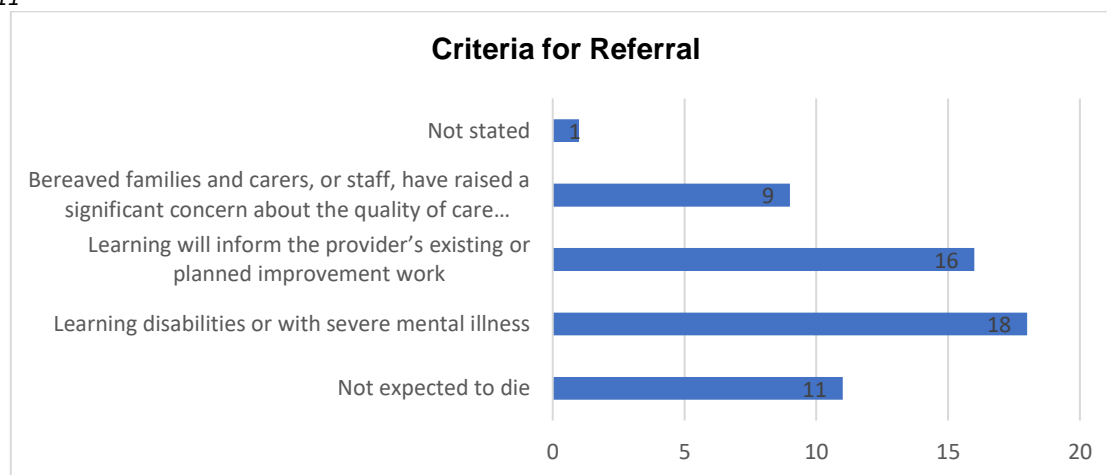
** Where SJRs are yet to be completed this is either because case notes are not yet available or because of reviewer capacity.

5. Structured Judgement Review (SJR)

5.1. Between April and June 2022 (Q1):

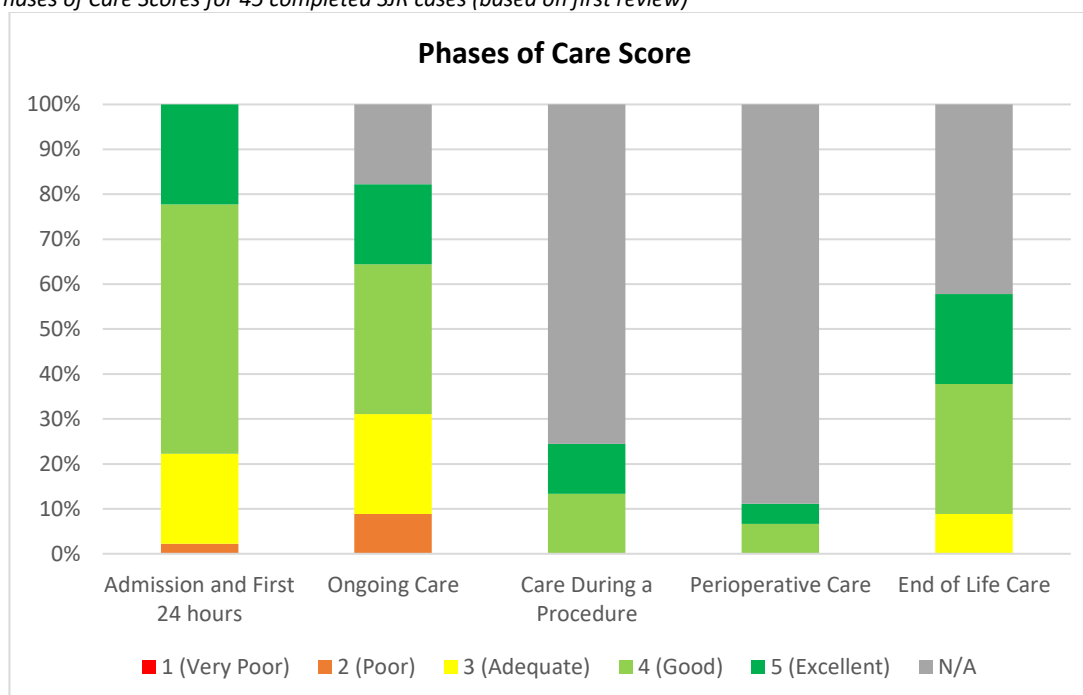
- 55/691 of inpatient deaths met the criteria for a SJR as detailed in Figure 16
- Four cases were rejected by SJR reviewers, and six cases are awaiting review. Of the 45 completed adult SJR cases (Table 2), 18 were deaths of patients with a learning disability and/or with severe mental illness
- Figure 11 shows the reason for referral of the SJRs during Q1.
- Scores allocated to each of the SJR phases of care are displayed in Figure 12 for all completed SJRs
- Final overall scores allocated to each SJR are shown in Table 3 with 44/45 scores of three or above

Figure 11



Source: Datix PALS

Figure 12 – Phases of Care Scores for 45 completed SJR cases (based on first review)



Source: Datix PALS

Table 3 – Final Overall Care Scores (Source: Datix PALS)

Overall Care Score	Score (%)
5 (Excellent)	9 (20%)
4 (Good)	23 (51%)
3 (Adequate)	12 (27%)
2 (Poor)	1 (2%)
1 (Very Poor)	0

6. Likelihood of deaths being due to problems in care

- 6.1. Four deaths were identified by the Serious Incident (SI) process in Q1 as being due to problems in care.
- 6.2. One of these cases was initially reviewed by SJR in April 2021, triggering the completion of a Paper A.
- 6.3. Key issues identified from these cases were:
 - Timely administration of antibiotics
 - Fluid management and monitoring
 - Oversight of care by one consultant
 - Timely transfer to critical care
 - Recognition and management of diabetic problems
 - Ownership and responsibility of patients in the A and E department
 - Prioritisation and communication of cases for emergency theatre

7. Regulation 28 Prevention of Future Deaths Reports

- 7.1. There was one Regulation 28 Prevention of Future Deaths report issued to the Trust in Q1.
- 7.2. Key messages included:
 - Supporting patients' decision-making with clarify of pros and cons of alternative options
 - influence of hierarchy on communication (human factors)
 - Patients/carers as a safety net
 - Impact of skill mix as well as number of staff

8. Learning

Learning from SJR

- 8.1. There were four SJRs with an overall care score of one or two that were reviewed by the Mortality Governance Committee (MGC) during Q1. All four deaths were subject to SJR in previous quarters. Learning points and actions noted below:
 - **SJR 8156** : Complex surgical patient transferred from ITU to surgical ward with complex medical issues and there was a delay in medical consultant review. The patient was transferred to a surgical ward but should have remained under the care of the medical team. A delay in thromboprophylaxis administration was raised as a wider Trust issue.
 - **SJR 9121**: Covid positive patient with possible pulmonary embolus. Issues identified around timely review of a deteriorating patient and delivery of blood specimen to the laboratory. An SI investigation was undertaken and concluded that care did not contribute to the patient's death, but that there was learning and this was shared in the directorate. Education has been delivered to nursing staff and prescribers in relation to the thromboembolic disease policy and to challenge a prescription if a patient hasn't had the first dose within 14 hours. Actions have been taken to raise awareness of the escalation process in relation to gaps in the doctor staffing rota, to ensure that these are appropriately identified and escalated. Education has also been delivered in relation to the escalation policy and the new deteriorating patient programme.
 - **SJR 8286**: Patient deteriorated following a biopsy. Delayed senior surgical review and observations not recorded with required frequency. Learning was identified around communication of concerns from Radiology to the Senior Clinical team. Radiology now ensures that Senior Doctor to Senior Doctor conversations take place when serious concerns are raised. Further actions include reiterating the requirement for frequent observations and timely escalation to the senior medical team, checking notes when reviewing sick patients and medical staff to prompt nurses if they have made any addition to the clinical notes.
 - **SJR 8256**: Patient with post-operative cerebral oedema (swelling on the brain). Observations were not recorded with required frequency and, due to Covid restrictions, the patient was in a mixed care setting. The risks of mixed care settings have been resolved as Neurosurgery patients are again being nursed in a specialised setting following easing of Covid related measures. This issue will also be taken into account in future crisis planning.