

# Hospital Standardised Mortality

**Board of Directors**  
**25 July 2023**

**PROUD  
TO MAKE A  
DIFFERENCE**

SHEFFIELD TEACHING HOSPITALS NHS FOUNDATION TRUST



# Hospital Standardised Mortality Ratio

## Objectives

- Define HSMR and model
- Issues identified through HSMR Task and Finish Group
- Current performance
- Other metrics
- Next Steps



# Mortality Metrics

## SHMI – Summary Hospital Mortality Index

- All deaths in-hospital & up to 30 days post discharge (142 diagnostic groups)
- Adjusted for Primary diagnosis, co-morbidities (Charlson Index), Age & Sex, Elective/Non-elective
- Published as rate Observed/Expected deaths where 1.0 is national average, Trusts banded as 'Lower than expected', 'Within expected' or 'Higher than expected'
- Published by NHSD

## HSMR – Hospital Standardised Mortality Rate

- 80% of in hospital deaths (56 diagnostic groups)
- Adjusted for more factors : Palliative care, Deprivation index, Admission history, Source/method of admission
- Presented as rate Observed/Expected deaths where 100 is national average, Trusts banded as 'Lower than expected', 'Within expected' or 'Higher than expected'
- Published by Dr Foster



# HSMR Model

- The risk-adjustment ‘model’ calculates ‘expected’ (predicted) numbers of deaths based on casemix using spell recording & clinical coding
- Observed / Expected
- Models based on all patients not just deaths
- MR =100 or 1.0 national average (recalculated at each publication date)
- Confidence limits (normal variation) determine banding
- Neither adjust for acuity of patient

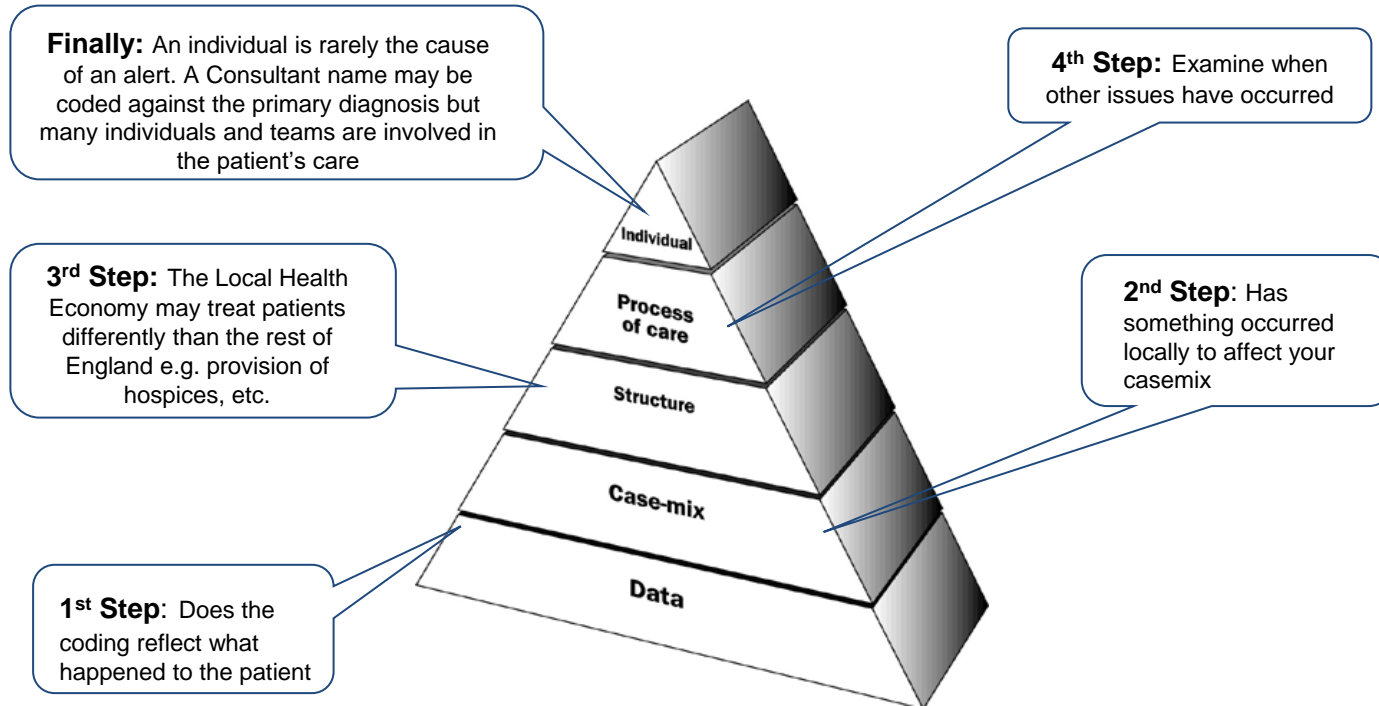


# STH HSMR

- Fluctuated for a number of years from 'as expected' to 'higher than expected'
- Task and finish group established in October 2020 and now a monthly working group in place to undertake actions required
- Using the Dr Foster methodology to investigate



# Dr Foster Approach to investigate HSMR



*Lilford et al. Lancet 2004; 363: 1147-54*



# Highlighted issues

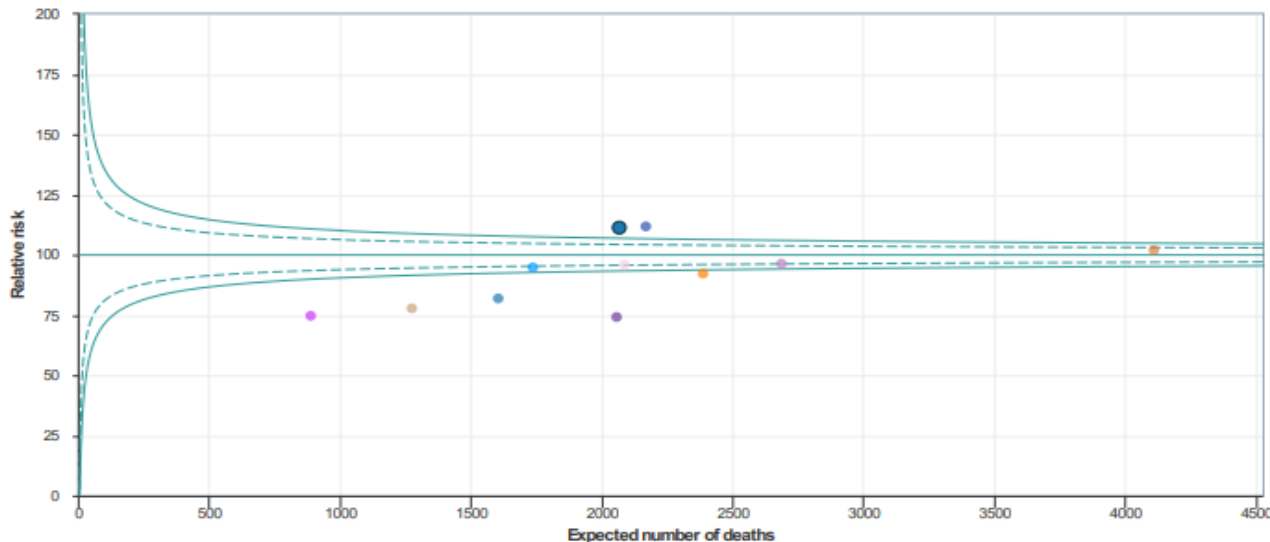
- Symptom codes
- Acute cerebrovascular disease group
- Co-morbidities FCE position
- Palliative care coding
- Admission method and source
- FCEs in error
- Disease groups
- Delayed discharges
- Timing of data feed – data being taken much earlier when not complete



# Benchmarking

Diagnoses - HSMR | Mortality (in-hospital) | Apr 2022 - Mar 2023 | SHELFORD + Leeds

Peers: SHELFORD + Leeds Measure: Relative risk Benchmarks: Model Group by: Region (of provider) Show: All



Region (of provider)

- 99.8% CL
- 95% CL
- Average
- CAMBRIDGE UNIVERSITY HOSPITALS NHS FOUNDATION TRUST
- GUY'S AND ST THOMAS' NHS FOUNDATION TRUST
- IMPERIAL COLLEGE HEALTHCARE NHS TRUST
- KING'S COLLEGE HOSPITAL NHS FOUNDATION TRUST
- LEEDS TEACHING HOSPITALS NHS TRUST
- MANCHESTER UNIVERSITY NHS FOUNDATION TRUST
- OXFORD UNIVERSITY HOSPITALS NHS FOUNDATION TRUST
- THE NEWCASTLE UPON TYNE HOSPITALS NHS FOUNDATION TRUST
- UNIVERSITY COLLEGE LONDON HOSPITALS NHS FOUNDATION TRUST
- UNIVERSITY HOSPITALS BIRMINGHAM NHS FOUNDATION TRUST
- SHEFFIELD TEACHING HOSPITALS NHS FOUNDATION TRUST

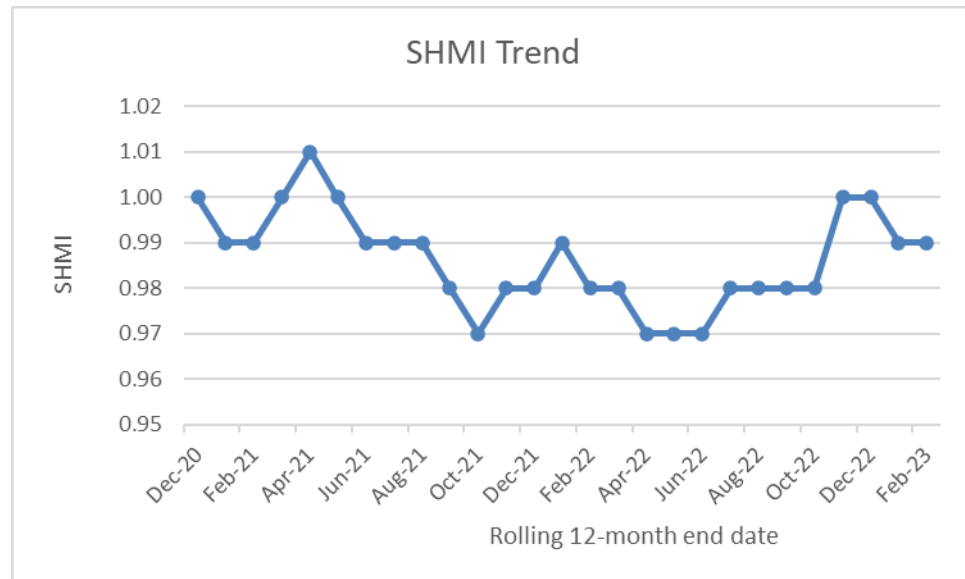
SHELFORD + Leeds	Superspells	% of All	Spells	Observed	Crude rate (%)	Expected	Expected rate (%)	Observed-expected	Relative risk	95% lower confidence limit	95% upper confidence limit
All	787,820	100.0%	790,370	21,845	2.8%	23051.7	2.9%	-1206.7	94.8	93.5	96.0
UNIVERSITY HOSPITALS BIRMINGHAM NHS FOUNDATION TRUST	123,200	15.6%	123,430	4,190	3.4%	4110.2	3.3%	79.8	101.9	98.9	105.1
SHEFFIELD TEACHING HOSPITALS NHS FOUNDATION TRUST	89,578	11.4%	89,661	2,302	2.6%	2066.8	2.3%	235.2	111.4	106.9	116.0
MANCHESTER UNIVERSITY NHS FOUNDATION TRUST	80,995	10.3%	81,485	2,595	3.2%	2686.3	3.3%	-91.3	96.6	92.9	100.4
THE NEWCASTLE UPON TYNE HOSPITALS NHS FOUNDATION TRUST	78,005	9.9%	78,050	1,645	2.1%	1734.2	2.2%	-89.2	94.9	90.3	99.6
IMPERIAL COLLEGE HEALTHCARE NHS TRUST	68,450	8.7%	69,040	1,520	2.2%	2054.0	3.0%	-534.0	74.0	70.3	77.8
OXFORD UNIVERSITY HOSPITALS NHS FOUNDATION TRUST	67,610	8.6%	67,960	2,205	3.3%	2386.1	3.5%	-181.1	92.4	88.6	96.3
CAMBRIDGE UNIVERSITY HOSPITALS NHS FOUNDATION TRUST	59,635	7.6%	59,745	1,310	2.2%	1602.5	2.7%	-292.5	81.7	77.4	86.3
LEEDS TEACHING HOSPITALS NHS TRUST	57,495	7.3%	57,590	2,425	4.2%	2167.7	3.8%	257.3	111.9	107.5	116.4
GUY'S AND ST THOMAS' NHS FOUNDATION TRUST	55,400	7.0%	55,675	990	1.8%	1272.7	2.3%	-282.7	77.8	73.0	82.8





# Other Mortality Metrics -SHMI

- Summary Hospital-level Mortality Indicator
- Published as a rate Observed/Expected deaths where **1.0** is national average, Trusts banded as 'Lower than expected', 'Within expected range' or 'Higher than expected'
- Trust remains stable in the within expected range



## Other Mortality Metrics - Audits

- Structured Judgement Reviews – Vast majority of outcomes at 3 and above (156/164 over the past 12 months) on a scale of 1 to 5 where 1 is poor and 5 is excellent
- 62 national clinical audits applicable to the Trust
  - Participated in 59
  - 25 published national clinical audit reports reviewed by Clinical Effectiveness Committee in 2022/23



## Summary and next steps

- Triangulation of data does not suggest that there is a cause for concern
- Further work underway to reduce the number of erroneous FCE's to improve data quality
- Back office team in place checking and correcting admission method and admission source
- Notes reviews to ensure comorbidities are captured correctly

