Sandwell and West Birmingham Hospitals **NHS**
NHS Trust

Report Title	Improving Hospital Standardised Mortality Ratio (HSMR)		
Sponsoring Executive	Dave Baker		
Report Author	Dave Baker/Chizo Agwu		
Meeting	Public Board	Date	4th February 2021

1. Suggested discussion points *[two or three issues you consider the Board should focus on]*

Hospital Standardised Mortality Ratio (HSMR) is an indicator of healthcare quality that measures whether the number of deaths in hospital is higher or lower than expected. SWB has a significantly high HSMR thus indicating more deaths than should be expected.

Investigation into our high HSMR score indicates several data quality issues that are likely to be contributing to this score, rather than concerns in care. Four documentation and coding domains have been identified to improve which are known to influence the HSMR.

A task and finish group chaired by Deputy Medical Director Chizo Agwu has been created to align efforts between frontline clinicians, clinical systems training, information and clinical coding to improve our HSMR score. Most actions will take effect from February 2021, which is expected to be demonstrated in the HSMR from June 2021, which is on a 3 month reporting lag.

2. Alignment to 2020 Vision *[indicate with an 'X' which Plan this paper supports]*

Safety Plan	X	Public Health Plan		People Plan & Education Plan	
Quality Plan	X	Research and Development		Estates Plan	
Financial Plan		Digital Plan		Other *[specify in the paper]*	

3. Previous consideration *[where has this paper been previously discussed?]*

4. Recommendation(s)

The Committee is asked to:

a.	Note the importance of reducing HSMR and associated task and finish group
b.	Note the importance and movement of the lead measures identified and the subsequent time delay to impacting the HSMR measure
c.	

5. Impact *[indicate with an 'X' which governance initiatives this matter relates to and where shown elaborate]*

Trust Risk Register	Y						
Board Assurance Framework	Y	Amenable Mortality					
Equality Impact Assessment	Is this required?	Y		N	X	If 'Y' date completed	
Quality Impact Assessment	Is this required?	Y		N	X	If 'Y' date completed	

SANDWELL AND WEST BIRMINGHAM HOSPITALS NHS TRUST

PUBLIC BOARD: 4^H FEBRUARY 2021

Improving Hospital Standardised Mortality Ratio (HSMR)

1.   Background

1.1   Hospital Standardised Mortality Ratio (HSMR) is an indicator of healthcare quality that measures whether the number of deaths in hospital is higher or lower than expected. It is a nationally benchmarked indicator, released on a monthly basis. Like all statistical indicators it is not perfect, but can be both a measure of safe, high-quality care and a warning sign that things are going wrong.

1.2   SWBH HSMR has increased significantly since the pandemic, currently at 139 (Reporting August 2020 in December 2020 IQPR). A score over 100 is considered to exceed the expected mortality rate, which is also adjusted to account for contextual factors such as comorbidities, age and seasonal variation. Beyond the care we give to patients, the HSMR is highly sensitive to the accuracy of documentation and coding practices which is a known limitation of the HSMR.

1.3   A task and finish group chaired by Deputy Medical Director Chizo Agwu has been created to align efforts between frontline clinicians, clinical systems training, information and clinical coding to improve our HSMR score. Whilst the national reporting for HSMR will not shift immediately (3-4 month lag), it is expected that shifting these process measures we will see it start to drop in the HSMR from June 2021 (August Board reporting June IQPR). However in the interim, there are several process measures that influence the HSMR that can be monitored to indicate progress. There is a driver diagram in annex 1 overviewing the improvement plan.

2.   Causes of Increased HSMR

2.1   Investigation into our high HSMR score indicates several data quality issues that are likely to be contributing to this score rather than a clinical quality issue.   We have robust processes in place to monitor clinical quality issues. Over 85% of notes of all deceased patients care are scrutinised by Medical Examiners. Where they detect any issues in care, these are subjected to Structured Judgement review (SJR). 60-70% of Next of Kin (NOK) are routinely phoned by Medical examiners to ascertain if they have issues in the care their loved ones.   Any death suspected as preventable are discussed by a multi-professional panel (CAPROM) .All learning points and actions from these reviews are disseminated via Mortality leads, discussed at QIHD. In addition the Learning from Deaths committee publishes a learning bulletin.

2.2   The graph below shows the HSMR, which is increasing gradually from September 2019, and sharply from March 2020. Several factors are likely to be the biggest contributors to this gradual increase: excessive consultant episodes, medical terminology in primary diagnosis, and palliative care documentation. The sharper rise in March is related to COVID-19.
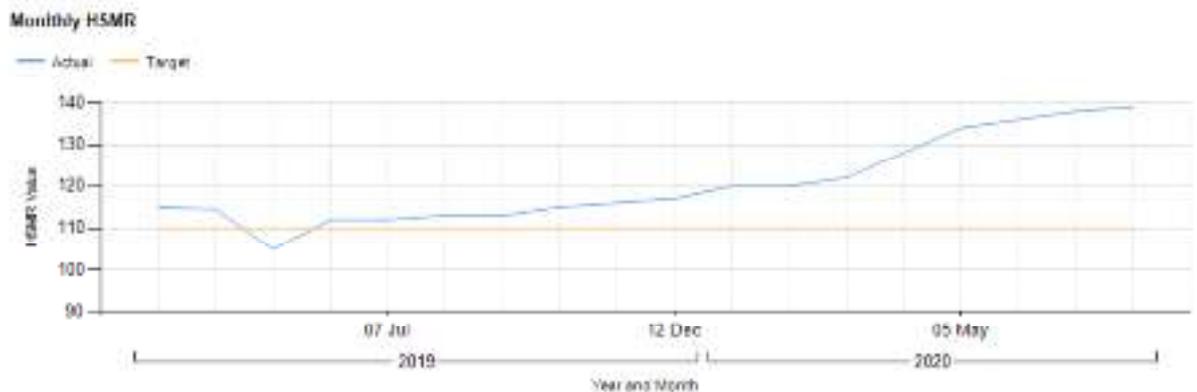
Figure 1 HSMR score (monthly)

2.3   *Primary Diagnosis*

2.3.1   The HSMR is calculated using specific language within the primary diagnosis. Certain prefix language positively affects HSMR such as 'probable' and 'treated as' whereas similar language such as 'differential' and 'rule out' negatively affects HSMR. The language known to negatively affect HSMR is taught in medical school, and as such it is a normal practice. Furthermore, Unity is set up to reflect the language choices which negatively impact HSMR and does not have the language which positively impacts HSMR. The free text box is often used for diagnosis information, which further affects the coding.

2.4   *Excessive Consultant Episodes*

2.4.1   A strong influencing factor of the HSMR is the length of Consultant episodes. HSMR is calculated **by the first two episodes of care only**. Current documentation practice on Unity creates a new episode for each lead Consultant, meaning that there are excessive, short episodes within the same specialty e.g. AMU. Moreover, errors in episodes on Unity are being re-added rather than corrected, resulting in 10 minute episodes. This issue is compounded with the primary diagnosis, whereby diagnosis may not be accurate in the first, short episode.

2.5   *COVID-19*

2.5.1   HSMR is adjusted for COVID-19, removing any deaths in the count. However, this is reliant upon documentation practices. COVID-19 must be listed in the first two episodes of care or the death will be counted in the HSMR. However, as we have identified, there are excessive consultant episodes as patients have been moved between Consultants within the same specialty. This is compounded with the language used within the primary diagnosis which is not in keeping with the necessary language accepted by

HSMR. This means that other Trusts are able to exclude COVID-19 deaths from their HSMR, whereas many of SWB deaths remain in our HSMR. This reflects the sharp increase on the HSMR graph from March 2020.

2.6   *Palliative Care Coding*

2.6.1   Documentation and clinical systems have not always demonstrated when a patient is on palliative care, thus impacting the HSMR as unexpected deaths.

3.   Solutions

3.1   *Primary Diagnosis*

3.1.1   Cerner are investigating if it is possible to add the language which positively affects HSMR onto Unity. They are unable to remove language which negatively impacts HSMR, therefore additional awareness is required to change behaviours. By way of an update, we have built the requirement in a test (CERT) environment and it is functionally working. This now requires IT to reconstruct this in a live environment.

3.1.2   An awareness campaign is commencing in January 2021 with stickers and posters to prompt medical staff to use different diagnosis prefixes in documentation. Annex 2 shows the poster and sticker which have been printed and are ready to use.

3.1.3   Information team are to monitor the prevalence of Complexities and Comorbidities (CCIs) 5<.

3.2   *Excessive Consultant Episodes*

3.2.1   The below graphs are process measures that will show if we are reducing excessive consultant episodes and thus improving the HSMR. The first graph shows how many episodes are in **Assessment Unit** ward stays, the closer to 1.0 the better. This means we are not moving patients between consultants whilst they are in the Assessment units. This is starting to stabilise from week 40 (September) when the project commenced and is starting to show small improvement.
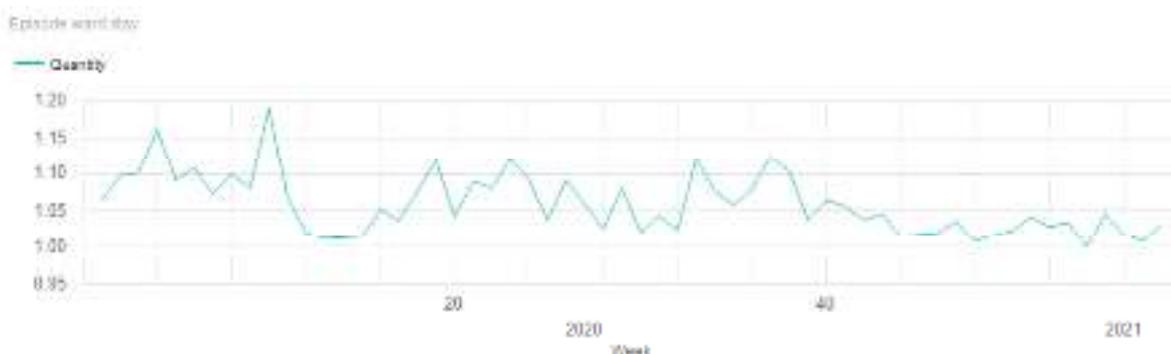
3.2.2   The second graph as shown below demonstrates episodes to spells **across all areas** which is currently around 1.4. This means that for every admission into hospital we have 1.4 consultant episodes. This peaks around May when patients were transferred between each Consultant within the same specialty and from lots of bed moves related

to COVID. It has improved from week 40 when the project commenced, but there is further improvement to be made. It reduced significantly over Christmas and has then shot up again due to increased admissions and the movement of patients through the hospital and into community beds (from AMU to deep bed base to community). The increased volumes flowing through the beds shouldn't impact the HSMR (under the current high Covid levels) as we should be getting the main diagnosis earlier due to the reduced number of AMU episodes.

3.2.3   It was agreed by Learning from Deaths Committee in November 2020 that episodes less than 10 minutes would be coded to match the next episode.

3.2.4   It was also agreed that when clerking, patients admitted to AMU should remain under a single lead consultant until transfer to a specialist unit. A draft user guide is in development, primarily to support Ward Clerks using Unity to do this. This is expected to be completed by February 2021, and rolled out as part of a training program thereafter.

3.3   *COVID-19*

3.3.1   Whilst it is not possible to recode previous COVID-19 deaths, actions have been put in place to raise awareness and prevent further issues.

3.3.2   The Medical Examiner Officer has started to produce a new weekly report as of December to alert Clinical Leads when instances have occurred for patients who have passed away to raise awareness and disseminate to teams.

3.3.3   A similar report is produced for patients who have not passed away, whereby it may be possible to change the coding.

3.4   *Palliative Care Documentation and Coding*

3.4.1   The below graphs show the count of palliative coding, and the count of palliative episodes. Although the graph drops off after a peak in week 48 this is due to a lag in coding. The new spike after week 40 is the new expected level of coding.

Clinical Coding - Palliative Care Coding
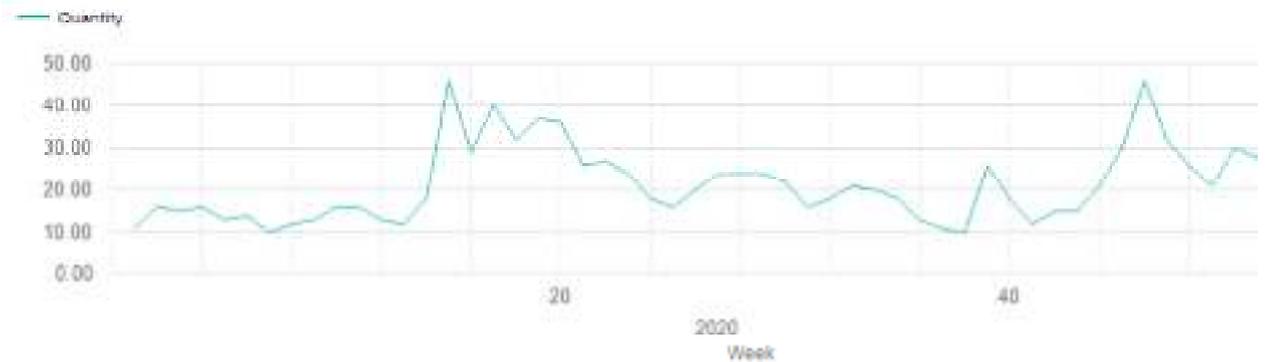
3.4.2 The second graph shows an increase in coding in the last few weeks, however this will be monitored to track consistent improvement over time. A palliative care specialty code was created in week 42 (October), as there is increased awareness of this code it is being used more and is expected to increase in the coming weeks.

Clinical Coding - Palliative Episodes
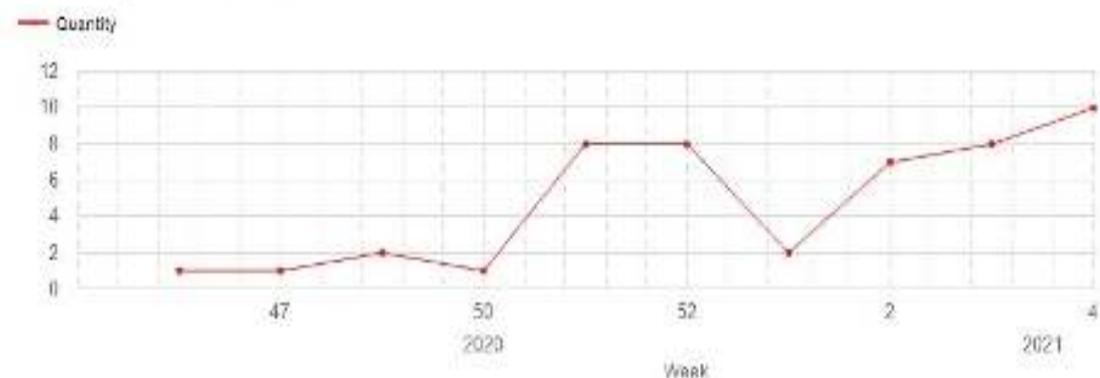
3.4.3 In September 2020 the Learning from Death Committee agreed that telephone and virtual methods for palliative consultations could be included in coding. This took effect in October 2020.

3.4.4 A change has been made on Unity to create a palliative care code in October, rather than using a specialty code. For example, Leasowes is now under GP Intermediate Care and GP Palliative Care rather than specialty code. A meeting was planned on 7th January to promote awareness with Group DOps to disseminate with their Group.

3.4.5 E-learning for medics on the Supportive Care Plan (SCP) went live in November, and it was promoted on Connect in November. There is regular reporting in place to monitor uptake.

3.4.6 Discussions are underway with the Unity team and Cerner to determine the best way to make the Supportive Care Plan (SCP) more visible on Unity and increase its use.

4.   Moving forwards

4.1   The task and finish group will continue with the identified actions to address the factors which influence the HSMR. It is expected that most actions will begin to have effect from February 2021 onwards, thus expecting a decline in the HSMR from June 2021 due to its reporting lag. Bi monthly until then, a paper will return to Quality & Safety Committee detailing progress made and lessons learnt.

5.   Recommendations

5.1   The Board is asked to:
   a. Note the importance of reducing HSMR and associated task and finish group
   b. Note progress made on the lead measures and the time lag to them impacting the HSMR.

Dave Baker/Dr Chizo Agwu
Director of Partnerships and Innovation/Deputy Medical Director

28rd January 2021

Annex 1: Driver Diagram
Annex 2: Primary Diagnosis Awareness Materials

Sandwell and West Birmingham Hospitals **NHS**
NHS Trust

Annex 1: Driver Diagram

Key:
| In order to achieve this aim.. | We need to ensure... | Which requires... | Ideas to ensure this happens |

Outstanding action
Completed action

Reduce HSMR score to 110

Primary Diagnosis Documentation
- Increase awareness
  - Awareness campaign
  - Information team to monitor CCIs 5<
- Change Language Use
  - Update Unity prefixes

Reduce unfinished consultant episodes
- Clarify Process
  - Agree process
  - Develop SOP
  - Information team to monitor episodes
- Training
  - Train ward clerks
  - Medic training

COVID-19
- Raise awareness
  - Medical Examiner Officer to share learning (weekly report)
  - Weekly report for patients not RIP

Palliative Documentation/Coding
- Identify Coding Opportunities
  - Code virtual palliative consultations
  - Code SCP
- Improve Documentation
  - Create palliative code
  - Raise visibility of SCP on Unity
- Training
  - SCP e-learning

Sandwell and West Birmingham Hospitals **NHS**

NHS Trust

Annex 1 Primary Diagnosis Awareness Materials

Clinical coding and Mortality statistics

NHS
Sandwell and
West Birmingham
NHS Trust

The way that diagnoses are documented in the patient records has a significant impact on clinical coding. The Coding Team are limited by what is documented, so by reducing ambiguity and using the approved terminology, it will help improve coding accuracy, which in turn has a downstream impact on the Trusts Mortality statistics.

When documenting a diagnosis, or probable diagnosis, the following terms are accepted in accordance with the National Clinical Coding Standards:

Other factors to take into consideration which have an impact on Coding and Mortality Statistics are:

Coding Can Use:
✓ Definite Diagnoses
✓ Treated As
✓ Probably/probable
✓ Presumed
✓ Possible and confirmed are acceptable in ED only, in line with ECDS mandates

Coding Can't Use:
× Differential Diagnosis
× Possible
× Maybe
× Suspected
× Impression
× Diagnosis follow by a '?'

Ensure you state the main diagnosis rather symptom
▸ For example, Anaemia probably due to Gastric Carcinoma, or
▸ Hyponatremia probably due to Metastatic Lung Carcinoma

Avoid Interchangeable terms and ensure you list all co-morbidities
▸ For example, instead of LRTI/Chest Infection, state 'treated as Pneumonia', if this is the presumed diagnosis which is being addressed in the current episode. This is as pneumonia has a greater impact on the Charlson Co-morbidity Index (CCI).
▸ Ensure all co-morbidities are documented on admission (which is listed as "problems"(active or resolved) on Unity), as this contributes to the patient's mortality risk profile.
▸ Ensure you are specific when recording the co-morbidities: e.g.
  o Recording creatinine levels does not permit a clinical coder to record CKD, this must be documented explicitly.
  o Congestive Cardiac Failure or Congestive Heart Failure needs to be stated as CCF and not CHF.

List Diagnoses in order of importance
▸ For example, 1. Sepsis, 2. CAP and, 3. AKI as this will influence the order in which diagnoses are coded, which again has a downstream impact on Trust Mortality Statistics.

Coding approved prefix terms when documenting diagnosis

When documenting a diagnosis, or probable diagnosis, the following terms are accepted in accordance with the National Clinical Coding Standards:

Coding Can Use:
- ✓ Definite Diagnoses
- ✓ Treated As
- ✓ Probably/probable
- ✓ Presumed
- ✓ Possible and confirmed are acceptable in ED only, in line with ECDS mandates

Coding Can't Use:
- ✕ Differential Diagnosis
- ✕ Possible
- ✕ Maybe
- ✕ Suspected
- ✕ Impression
- ✕ Diagnosis follow by a '?'

MS6301