SHEFFIELD TEACHING HOSPITALS NHS FOUNDATION TRUST

EXECUTIVE SUMMARY

REPORT TO THE TRUST BOARD

HELD ON 18 NOVEMBER 2015

Subject:	Data Quality Baseline Assessment
Supporting TEG Member:	Kirsten Major, Director of Strategy and Operations
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Status[1]	D

PURPOSE OF THE REPORT:

The report outlines the approach and methodology that will be used to assess data quality in line with the Trust's Data Quality Policy. It also sets out the progress of undertaking a self-assessment of the data quality of the performance indicators within the Integrated Performance Report (IPR).

KEY POINTS:

The Trust has recently revised its Data Quality Policy and it was ratified by the Board on 21 October 2015. The new policy emphasises that ensuring good data quality is everyone's business and departments will be expected to have standard procedures for the collection, validation and entry of data, which will be subject to future audit.

As part of the implementation of the Data Quality Policy, regular reviews of data quality will be undertaken to provide assurance on the quality of the data. It was agreed that the indicators contained in the IPR would be the initial area of assessment.

All 71 indicators in the IPR have been self-assessed. The current findings indicate that there are three indicators where there is an element of data quality rated as red. These relate to:

- Serious Untoward Incidents - Number of serious untoward incidents (SUI)
- Serious Untoward Incidents - Approved SUI Report submitted within timescales
- Complaints - Percentage of complaints answered within 25 working days

The stage 1 assessment has been completed and all areas that are red rated will be followed up with indicator leads to develop improvement actions. The stage 2 and 3 assessment will be completed by March 2016.

IMPLICATIONS[2]**:**

AIM OF THE STHFT CORPORATE STRATEGY 2012-2017		**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	✓

RECOMMENDATION(S):

The Board is asked to:

a) Debate the initial assessment of the data quality of the performance indicators within the Integrated Performance Report.

APPROVAL PROCESS:

Meeting	Date	Approved Y/N
Trust Executive Group	4 November 2015	Y
Finance, Workforce and Performance Committee	9 November 2015	Y
Board of Directors	18 November 2015	

Data Quality Baseline Assessment

1. Introduction

The importance of good data quality is acknowledged widely across the NHS as critical to service delivery. Good data underpins successful organisational performance management. It is possibly of even greater value in that it provides an evidence base for the quality of care being provided by an organisation.

The Trust has recently updated the Data Quality Policy and is introducing a framework to assess the quality of data used across the organisation and ensure that it is fit for purpose. This paper presents the initial assessment of the data quality of the performance indicators within the Integrated Performance Report (IPR).

2. Data Quality Assurance Framework

Previously the Trust has used a local subjective method to assess the quality of data used within the IPR. It is recognised that data quality is made up of a number of inter-related components. The Data Quality Policy for the Trust outlines that in order to be meaningful data must meet the following criteria:

- **Accuracy** – Is the data sufficiently accurate for the intended purposes?
- **Validity** – is the data recorded and used in compliance with relevant requirements?
- **Reliability & Consistency** – Does the data reflect stable and consistent collection processes across collection points and over time?
- **Timeliness** – is the data up to date and has it been captured as quickly as possible after the event or activity?
- **Relevance** – Is the data captured applicable to the purposes for which they are used?
- **Completeness & Coverage** – Is all the relevant data included?

The Trust has adopted the Data Quality Diamond methodology (recommended by the National Audit Office) as an approach to assess data quality. The methodology is outlined in **Appendix 1** to fully assure data quality it is important that the assessment is captured at the various stages of information management;

3. Data Quality Assessment

The data quality assessment undertaken has focused on stage 1 – the data collection process. The Trust IPR contains 71 separate indicators which are sourced from 12 separate systems. Indicator leads were requested to complete the self-assessment using the diamond methodology. A full assessment of responses received to date is contained within **Appendix 2**.

A baseline self-assessment has been undertaken on all 71 indicators in the IPR.

The findings from the assessment indicate that three indicators where there is an element of data quality rated as red (**Figure 1**).

Figure 1 – Indicators that have been assessed with a RAG rating of red in one or more dimension

Indicator	Measure	Accuracy	Validity	Reliability & Consistency	Timeliness	Relevance	Completeness & Coverage	Current IPR RAG rating
Serious Untoward Incidents	Number of serious untoward incidents (SUI)							
Serious Untoward Incidents	Approved SUI Report submitted within timescales							
Complaints	Percentage of complaints answered within 25 working days							

Figure 2 below identifies all the indicators have been self-assessed as green across all dimensions. It is worth noting that some of these indicators previously had an amber rating for data quality.

Figure 2 – Indicators that have been assessed with a RAG rating of green across all dimensions

Indicator	Measure	Accuracy	Validity	Reliability & Consistency	Timeliness	Relevance	Completeness & Coverage	Current IPR RAG rating
Hospital Mortality	HSMR							
Hospital Mortality	SHMI							
MRSA bacteraemia	Actual numbers							
MSSA bacteraemia	Actual numbers							
C Diff	Actual numbers							
Staff Friends & Family	Recommend as a place to be treated							
Sickness Absence	All days lost as a percentage of those available							
Appraisals	Completed appraisals in last year							
Mandatory Training	Overall percentage of completed mandatory training							

Indicator	Measure	Accuracy	Validity	Reliability & Consistency	Timeliness	Relevance	Completeness & Coverage	Current IPR RAG rating
Safer Staffing	Percentage of planned shifts worked by Registered Nurses/midwives during the day							
Safer Staffing	Percentage of planned shifts worked by Registered Nurses/midwives during the night							
Safer Staffing	Percentage of planned shifts worked by Clinical Support Workers during the day							
Safer Staffing	Percentage of planned shifts worked by Clinical Support Workers during the night							
Staff Friends & Family	Recommend as a place to work							
Agency spend	Agency and bank spend as a percentage of total pay budget							
I&E	Variance from plan							
Contract performance	Variance from plan							
Cash	Actual							
Capital expenditure	Variance from plan							
Recruitment to trials	Total number of patient accruals to portfolio studies							
Recruitment to trials	70 Day Benchmark for recruitment of first patient to a clinical trial							
Safety Thermometer	Harm free							
Quality recommendation	% staff who would recommend STH to a friend / relative for treatment							
Work recommendation	% staff who would recommend STH as a place to work							
Staff Engagement	Staff engagement score							

The table below identifies the areas where there is a concern regarding the accuracy of the information being captured.

Figure 3 - Indicators where accuracy of the data is not robust

Indicator	Measure	Accuracy	Validity	Reliability & Consistency	Timeliness	Relevance	Completeness & Coverage	Current IPR RAG rating
A&E 4-hour wait	Patients seen within 4 hours							
18 week waits referral to treatment time	Percentage of admitted patients treated within 18 weeks							
18 week waits referral to treatment time	Percentage of non-admitted patients treated within 18 weeks							
18 week waits referral to treatment time	Percentage of patients on incomplete pathways waiting less than 18 weeks							
52 week waits	Actual numbers							
Cancer Waits	Patient seen within 2 weeks							
Cancer Waits	Breast symptomatic seen within 2 weeks							
Cancer Waits	62 days from referral to treatment (GP referral)							
Cancer Waits	31 day first treatment							
Cancer Waits	31 day subsequent treatment (Surgery)							
Cancer Waits	31 day subsequent treatment (Radiotherapy)							
Cancer Waits	31 day subsequent treatment (Drugs)							
FFT Response Rates	Increased response rates for inpatient areas							
FFT Response Rates	Increased response rates for A&E							
Community care – information completeness	RTT information completeness							
Community care – information completeness	Referral information completeness							
Community care – information completeness	Activity information completeness							

4. Key themes emerging from baseline assessment

The baseline assessment has identified that a number of areas where there is strong assurance on data quality (25 of the 71 indicators assessed). There are a number of areas where gaps in assurance have been identified.

a) SUI's and complaints data

- The system for recording SUI's is datix and the team have identified that not all SUI's are initially notified through the datix system. A significant amount of effort is currently expended reconciling the data from different sources.

- All formal complaints are managed centrally in the Patient Partnership department with the exception of Emergency Care, SYRS and LEGION, which are managed locally. For centrally managed complaints, there are no concerns with regard to reliability and consistency. For complaints that are managed by the other three care groups, processes are varied depending on who has entered the data. There are no standard operating procedures for complaints received in those departments and this results in the Patient Partnership department having to follow-up complaints logged with incomplete or inconsistent data. It is for these reasons that this set of indicators has aspects of data quality rated as red.

b) Indicators derived from PAS data

- The accuracy of data quality from Lorenzo has been temporarily compromised as users familiarise themselves with the system affecting A&E reporting and Referral to Treatment indicators. The cancelled operations accuracy is amber as is a need to revisit the data definitions to ensure data is being collected in accordance with the national measures.

c) Cancer data accuracy

- The accuracy of cancer data has been rated as amber whilst there are national guidelines in place the Trust does not have local fully comprehensive procedures for all areas. This cancer team are working to establish these.

d) Reliability and consistency

- The reliability and consistency of 35 indicators was rated as either red or amber. In a number of these cases the procedures required to support data collection were not robust enough.

5. Next Steps

The stage 1 assessment has been completed and all areas that are red rated will be followed up with indicator leads to develop improvement actions. The stage 2 and 3 assessment will then be completed by March 2016. In parallel, an ongoing review of the accuracy of data quality following the implementation of Lorenzo will be taking place.

The findings from the completed assessment in March 2016 will form the basis of a data quality improvement plan. It will include a proposal on changes to the current RAG rating of data quality for the indicators in the IPR, a new rating methodology for each of the data quality elements and a timeline for the review of all other data returns that are submitted externally.

6. Recommendations

The Board is asked to;

a) Debate the initial assessment of the data quality of the performance indicators within the Integrated Performance Report.

APPENDIX 1 - SCORING OF DATA QUALTIY FOR THE INTEGRATED PERFORMANCE REPORT INDICATORS

The 'owner' of the indicator will be asked to provide details of the following against the criteria set out above:

Dimension	*Data Collection*	*Computer Systems*	*National Standards*	*Local Standards*
Accuracy	• Data reflects what actually happened **YES/NO/NOT KNOWN**	• Procedures are available to assist with data entry **YES/NO**	• Local reference tables are validated and updated regularly **YES/NO**	• Every opportunity is taken to ensure data accuracy (e.g. checking with patient) **YES/NO/NOT KNOWN**
Validity	• Data is collected to a pre-defined code-set **YES/NO**	• The system collects only valid codes **YES/NO**	• Codes comply with national standards, rules and definitions are applied correctly **YES/NO**	• All local categories are mapped to a distinct national category **YES/NO**
Reliability & consistency	• Relationships between data items are correct (e.g. sequential, correct context) **YES/NO**	• There is validation to ensure conflicting data cannot be entered **YES/NO**	• Progress towards performance targets reflects real changes rather than variations in data collection **YES/NO/NOT APPLICABLE**	• Staff have procedures and data collection is not subject to personal interpretation **YES/NO**
Timeliness	• Data is collected as real-time as possible (timely data is beneficial to the treatment of the patient) **YES/NO**	• Timely data recording makes information widely available **YES/NO**	• Data is collected to meet the deadlines for statutory returns **YES/NO/NOT APPLICABLE**	• Timeliness takes priority over accuracy for urgent treatment of patients **YES/NO/NOT APPLICABLE**
Relevance	• Data is relevant to the purpose for which it is used **YES/NO**	• Data collection is periodically reviewed to ensure changing needs are accommodated **YES/NO**		• There is an understandin g of the bigger picture of why certain data is required **YES/NO/NOT KNOWN**

Dimension	*Data Collection*	*Computer Systems*	*National Standards*	*Local Standards*
Completeness & coverage	• At record level all mandatory data is collected **YES/NO** • Data reflects all work done **YES/NO**	• Mandatory data items cannot be by-passed. **YES/NO** • Electronic records are an accurate reflection of manual records **YES/NO/NOT APPLICABLE/NOT KNOWN**	• The NHS Number is used in all identifiable references to patients **YES/NO** • External data submissions are an accurate reflection of work done **YES/NO**	• Default codes are used where appropriate and not to cover missing data **YES/NO/NOT APPLICCABLE**

These responses will then be scored as set out below

The scores will then be used to determine the quality of the data and any dimension where the score is amber or red will be asked to produce an action plan to improve the data quality.

Accuracy

4 YES answers	
3 YES, 1 NO/NOT KNOWN	
2 YES, 2 NO/NOT KNOWN	
1 YES, 3 NO/NOT KNOWN	
0 YES, 4 NO/NOT KNOWN	

Validity

4 YES answers	
3 YES, 1 NO	
2 YES, 2 NO	
1 YES, 3 NO	
0 YES, 4 NO	

Reliability & consistency

4 YES/NOT APPLICABLE answers	
3 YES/NOT APPLICABLE, 1 NO	
2 YES/NOT APPLICABLE, 2 NO	
1 YES/NOT APPLICABLE, 3 NO	
0 YES/NOTAPLLICABLE, 4 NO	

Timeliness

4 YES/NOT APPLICABLE answers	
3 YES/NOT APPLICABLE, 1 NO	
2 YES/NOT APPLICABLE, 2 NO	
1 YES/NOT APPLICABLE, 3 NO	
0 YES/NOTAPLLICABLE, 4 NO	

Relevance

3 YES/NOT APPLICABLE answers	
2 YES/NOT APPLICABLE, 1 NO	
1 YES/NOT APPLICABLE, 2 NO	
0 YES/NOT APPLICABLE, 3 NO	

Completeness & coverage

7 YES/NOT APPLICABLE answers	
6 YES/NOT APPLICABLE, 1 NO/NOT KNOWN	
5 YES/NOT APPLICABLE, 2 NO/NOT KNOWN	
4 YES/NOT APPLICABLE, 3 NO/NOT KNOWN	
3 YES/NOT APPLICABLE, 4 NO/NOT KNOWN	
2YES/NOT APPLICABLE, 5 NO/NOT KNOWN	
1 YES/NOT APPLICABLE, 6 NO/NOT KNOWN	
0 YES/NOT APPLICABLE, 7 NO/NOT KNOWN	

APPENDIX 2 – FULL LIST OF SELF ASSESSMENTS COMPLETED AS AT 29TH OCTOBER 2015

Indicator	Measure	Accuracy	Validity	Reliability & Consistency	Timeliness	Relevance	Completeness & Coverage	Current IPR RAG rating
Hospital Mortality	HSMR							
Hospital Mortality	SHMI							
MRSA bacteraemia	Actual numbers							
MSSA bacteraemia	Actual numbers							
C Diff	Actual numbers							
Serious Untoward Incidents	Number of serious untoward incidents (SUI)							
Serious Untoward Incidents	Approved SUI Report submitted within timescales							
Incidents	Increase in incident reporting levels							
Incidents	Incidents not approved after 35 days							
Average Length of Stay (by discharges)	Average LOS Elective							
Average Length of Stay (by discharges)	Average LOS Non Elective							
Staff Friends & Family	Recommend as a place to be treated							
Patient Falls	Number of patient falls							
Never Events	Number of never events							
Sickness Absence	All days lost as a percentage of those available							
Appraisals	Completed appraisals in last year							
Mandatory Training	Overall percentage of completed mandatory training							
Safer Staffing	Percentage of planned shifts worked by Registered Nurses/midwives during the day							
Safer Staffing	Percentage of planned shifts worked by Registered Nurses/midwives during the night							

Indicator	Measure	Accuracy	Validity	Reliability & Consistency	Timeliness	Relevance	Completeness & Coverage	Current IPR RAG rating
Safer Staffing	Percentage of planned shifts worked by Clinical Support Workers during the day							
Safer Staffing	Percentage of planned shifts worked by Clinical Support Workers during the night							
Staff Friends & Family	Recommend as a place to work							
Agency spend	**Agency and bank spend as a percentage of total pay budget**							
I & E	**Variance from plan**							
Contract performance	**Variance from plan**							
Efficiency	**Variance from plan**							
Cash	**Actual**							
Capital expenditure	**Variance from plan**							
A&E 4-hour wait	Patients seen within 4 hours							
>12 hr Trolley waits in A&E	**No. of patients waiting > 12 hours**							
Ambulance turnaround	**Time taken for ambulance handover of patient**							
Ambulance turnaround	**Time taken for ambulance handover of patient**							
18 week waits referral to treatment time	Percentage of admitted patients treated within 18 weeks							
18 week waits referral to treatment time	Percentage of non-admitted patients treated within 18 weeks							
18 week waits referral to treatment time	Percentage of patients on incomplete pathways waiting less than 18 weeks							
52 week waits	Actual numbers							
6 week diagnostic waiting	Percentage of patients seen within 6 weeks							
Cancelled Operations	Number of operations cancelled on the day for non-clinical reasons							

Indicator	Measure	Accuracy	Validity	Reliability & Consistency	Timeliness	Relevance	Completeness & Coverage	Current IPR RAG rating
Cancelled Operations	Number of patients cancelled on the day and not readmitted within 28 days							
Cancelled Outpatient appointments	Percentage of out-patient appointments cancelled by hospital							
Cancelled Outpatient appointments	Percentage of out-patient appointments cancelled by patient							
DNA rate	Percentage of new out-patient appointments where patients DNA							
DNA rate	Percentage of follow-up out-patient appointments where patients DNA							
Cancer Waits	Patient seen within 2 weeks							
Cancer Waits	Breast symptomatic seen within 2 weeks							
Cancer Waits	62 days from referral to treatment (GP referral)							
Cancer Waits	31 day first treatment							
Cancer Waits	31 day subsequent treatment (Surgery)							
Cancer Waits	31 day subsequent treatment (Radiotherapy)							
Cancer Waits	31 day subsequent treatment (Drugs)							
Choose & Book Utilisation	Percentage appointments booked through C&B							
Ethnic Origin data collection	% valid ethnic group							
Elective Inpatient activity	Variance from contract schedules							
Non elective inpatient activity	Variance from contract schedules							
New outpatient attendances	Variance from contract schedules							
Follow up op attendances	Variance from contract schedules							

Indicator	Measure	Accuracy	Validity	Reliability & Consistency	Timeliness	Relevance	Completeness & Coverage	Current IPR RAG rating
A&E attendances	Variance from contract schedules							
Complaints	Percentage of complaints answered within 25 working days							
FFT Response Rates	Increased response rates for inpatient areas							
FFT Response Rates	Increased response rates for A&E							
Community care – information completeness	RTT information completeness							
Community care – information completeness	Referral information completeness							
Community care – information completeness	Activity information completeness							
Day surgery rates	BADS - day surgery rates							
Mixed Sex Accommodation	Number of breaches of Mixed Sex Accommodation standard							
Recruitment to trials	Total number of patient accruals to portfolio studies							
Recruitment to trials	70 Day Benchmark for recruitment of first patient to a clinical trial							
Safety Thermometer	Harm free							
Quality recommendation	% staff who would recommend STH to a friend / relative for treatment							
Work recommendation	% staff who would recommend STH as a place to work							
Staff Engagement	Staff engagement score							