Paper M1 (revised)

	TRUST BOARD
From:	Suzanne Hinchliffe, Deputy Chief Executive/Chief Nurse
Date:	29th November 2012
CQC regulation	All applicable
Title:	Data quality diamond assessment

Author: Charlie Carr , Head of Performance Improvement
Responsible Director: Suzanne Hinchliffe, Deputy Chief Executive /Chief Nurse

Purpose of the Report:
To provide members with an understanding of the Trust's proposed data quality diamond assessment

The Report is provided to the Board for:

Decision		Discussion	√
Assurance	√	Endorsement	

Summary / Key Points:

- The DoH and SHA are likely to require greater assurance of data quality in respect of submitted data
- The current UHL data quality diamond is not fit for purpose
- The revised data quality diamond is based in the 6 dimensions of quality identified by the Audit Commission
- The UHL RTT process is used as the example of a complex process to provide assurance to the Trust Board that performance data undergoes a series of thorough data quality checks and validation process prior to submission
- The process has limitations which must be mitigated by clear policy and procedure and regular audit
- It is proposed that this process is adopted and rolled out to cover the targets and standards in the 'UHL at a glance' section of the Quality and Performance report

Recommendations: Members to note and receive the report

Strategic Risk Register	**Performance KPIs year to date**

Resource Implications (eg Financial, HR) N/A

Assurance Implications: That submitted data reflects actual performance

Patient and Public Involvement (PPI) Implications: Potential innacurate performance reporting could have negative impact of patient experience and Trust reputation

Equality Impact N/A

Information exempt from Disclosure N/A

Requirement for further review?

UNIVERSITY HOSPITALS OF LEICESTER NHS TRUST

REPORT TO: **TRUST BOARD**

DATE: **29th NOVEMBER 2012**

REPORT BY: **SUZANNE HINCHLIFFE, DEPUTY CHIEF EXECUTIVE /CHIEF NURSE**
CHARLIE CARR, HEAD OF PERFORMANCE IMPROVEMENT

SUBJECT: **DATA QUALITY DIAMOND ASSESSMENT**

1.0 Introduction and background

The Quality Diamond that is currently displayed in the Trust's Quality and Performance reports has been assessed as inadequate. The updated UHL Quality Diamond proposed in this paper has been developed as an assessment of data quality for high-level key performance indicators. It provides a level of assurance that the data reported can be relied upon to accurately describe the Trust's performance. On an iterative basis it will apply to each indicator in the Quality and Performance Reports in the 'UHL at a glance ' section. This paper describes how the assessment is undertaken and uses the example of Referral to Treatment (RTT) to demonstrate the assurance process.

Additional background information

A recent National Audit Office (Nov 12) summary report on Information Assurance, made a number of generic recommendations to the DoH, including the following: '*In the main the Department currently receives no formal assurance from the Chief Executives of data providers about the quality of the data submitted or their assurance processes. The Department should require Chief Executives to confirm formally that they have reviewed the quality of the performance and cost data they are submitting, and that they are content with the quality or are highlighting known weaknesses.'*

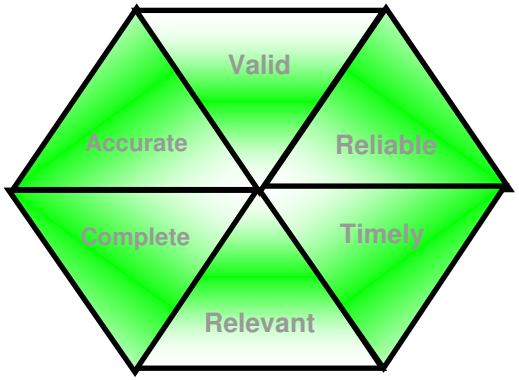
The approach detailed in this paper will put the Trust in a stronger position to respond to any such requirements.

2.0 Scope of the data Quality Diamond assessment

The procedure applies to all staff who have responsibility for submission of data for performance reporting which features in the 'UHL at a glance' section of the Quality and Performance report.

3.0 The Quality Diamond

3.1 The Diamond is based on the 6 dimensions of data quality as identified by the Audit Commission:



- **Accuracy** – Is the data sufficiently accurate for the intended purposes?
- **Validity** – is the data recorded and used in compliance with relevant requirements?
- **Reliability** – 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** – Is all the relevant data included?

3.2 In order for the Quality Diamond assessment to be made, information about the data collection and processing should be provided by those with responsibility for each stage. This is undertaken by completing the proforma (example Appendix 1). Guidance regarding the information required is given in each box requiring completion.

3.3 Data for each indicator should be summarised by describing what the data represents and how targets have been set. Responsibilities must be clearly defined. Definitions should be transparent regarding any data *exclusions* applied.

3.4 The process should be mapped to show all distinct key steps/stages from data collection through to reporting

3.5 Each stage should be tabulated with assessment against the 6 data quality dimensions describing which dimensions specifically apply.

3.6 This should accumulate a picture of whether each dimension can be assured through evidence of effective controls in place. Controls are objective checks undertaken to confirm or refute the data. They may be automated or manual, e.g. a system will only allow certain data to be entered, a report shows records for review, someone checks the data.

The 6 dimensions of Data Quality, and examples of types of checks				
	Data collection	*Computer system*	*National standards*	*Local standards*
Accuracy	Data reflects what actually happened	Procedures are available to assist with data entry	Local reference tables are validated and updated	Every opportunity is taken to ensure data accuracy e.g..

			regularly	checking with patient.
Validity	Data is collected according to a pre-defined code-set	The system collects only valid codes	Codes comply with national standards. Rules and definitions are applied correctly.	All local categories are mapped to a distinct national category
Reliability & consistency	Relationships between data items are correct e.g. sequential, correct context	There is validation to ensure conflicting data cannot be entered	Progress towards performance targets reflects real changes rather than variations in data collection	Staff have procedures and data collection is not subject to personal interpretation.
Timeliness	Data is collected as real-time as possible. Timely data is beneficial to the treatment of a patient	Timely data recording makes information widely available	Data is collected to meet the deadlines for statutory returns	Timeliness takes priority over accuracy for urgent treatment of patients.
Relevance	Data is relevant to the purposes for which it is used.	Data collection is periodically reviewed to ensure changing needs are accommodated		There is understanding of the bigger picture of why certain data is required
Completeness & coverage	At record level all mandatory data is collected. Data reflects all work done	Mandatory data items cannot be by-passed. Electronic records are an accurate reflection of manual records	The NHS Number is used in all identifiable references to patients. External data submissions are an accurate reflection of work done.	Default codes are used where appropriate and not to cover missing data

4.0 Limitations of the approach

Although the proposed assurance process is thorough, as evidenced by the RTT example, it cannot give absolute assurance of no margin of error. Accompanying policies and procedures must be complied with to reduce subjective interpretation of 'the rules'. Regular audit must be built into the assurance process, with clear plans to address identified shortfalls.

5.0 Example of RTT

To test the proposed approach the RTT process has been reviewed (Appendix 1). This includes all data collection points and the various validation processes from referral receipt to the submission of performance data. The Board will note that in this process there are a number of points which are recorded as non compliant with the 6 dimensions of quality. These areas on non compliance are not surprisingly more notable where human intervention is required. Risks associated with these areas of potential non compliance are mitigated by the

application of policy or standards and a suite of data quality reports that are reviewed at the weekly access meeting which identify obvious anomalies in practice. An example of this is the standard that requires all additions to a waiting list to be done within 24 hrs of decision to add to a list, where this is not the case anomalies are highlighted in a data quality report and the record amended.

6.0 Planned roll out

It is proposed that the current data quality diamonds in the Quality and Performance report are removed as they are not useful. The process described in this paper will be rolled out to cover the indicator in the Quality and Performance Reports in the 'UHL at a glance ' section.

Phase 1 by end Feb 2013: all FT Framework indicators

Phase 2 by end March 2013: all remaining DoH indicators

7.0 Recommendations to Trust Board

The Trust Board is requested to:

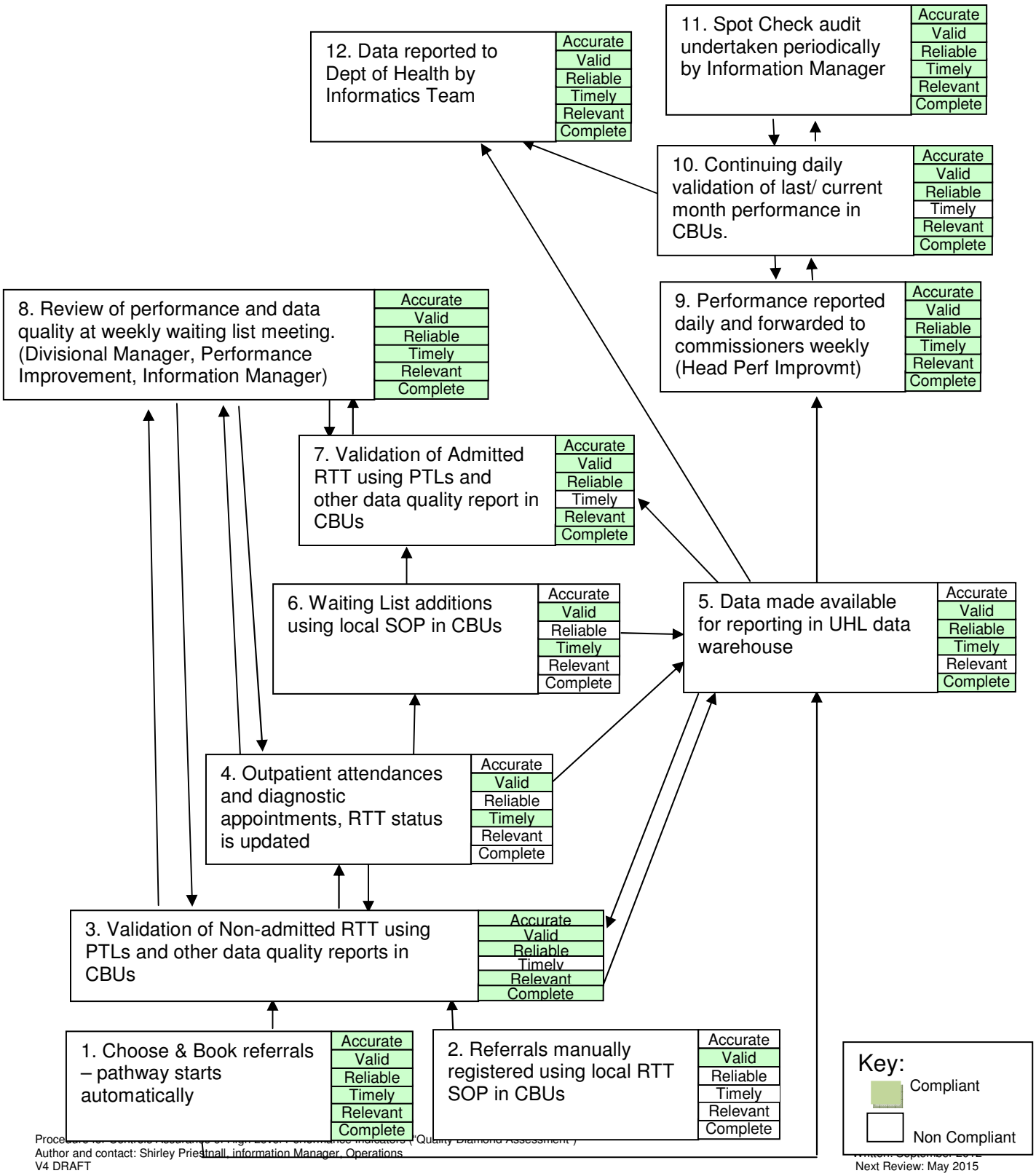
- note the increased scrutity that both the SHA and DoH are likely to apply to the quality of submitted data
- receive the proposed revision of the 'UHL Data Quality Diamond', and the additional assurance that this will provide, aknowledging its limitations
- receive the assessment of the RTT data quality assessment
- note the propose timetable for roll out of the Data Quality Diamond Assessment to 'UHL at a glance' indicators

1. Indicator Title	RTT 18 week – admitted RTT 18 week – non-admitted RTT – Incomplete 92% in 18 weeks RTT delivery in all specialties		
2. Indicator details	RTT = Referral To Treatment The indicator measures the percentage of patients treated (or where a clinical decision not to treat is made) within 18 weeks of their referral for treatment.		
3. Completed by	Names		Date
	Shirley Priestnall, Information Manager Charlie Carr, Head of Performance Improvement		31st August 2012
4. Target	Figure	Admitted RTT: 90% to be treated within 18 weeks of referral Non-admitted RTT: 95% to be treated within 18 weeks of referral Patients awaiting treatment: 92% should be waiting less than 18 weeks.	
	Description	These figures represent how many patients wait less than 18 weeks throughout their pathway prior to treatment.	
	How and why is it set at this level?	The targets are set nationally and should be achieved by each specialty each month. A national short list of specialties is defined, with others being captured under 'other specialties'.	
	Profile	The targets are applied each month, so each month is measured as a separate entity. The quarterly aggregated position will also be measured by Monitor as part of our Foundation Trust status.	
5. Threshold	Is there a threshold?	Yes	
	Performing (GREEN)	Admitted 90 – 100% Non-admitted 95 – 100% Incompletes 92 – 100%	
	Under-performing (RED)	Admitted 0 - <= 85% Non-admitted 0 - <=90% Incompletes 0 - <=87%	
	Mid-range (AMBER)	Admitted > 85%, <90% Non-admitted >90%, <95% Incompletes >87% , <92%	
	How were these thresholds	They have been set in the Department of Health	

	agreed?	Performance Framework. Locally there are 2 categories – performing (as above), or failing to perform.	
6. Timeliness	Frequency	Data is reported monthly	
	What is the timeliness of data reported?	Monthly data including the last complete month is reported.	
	Delays	The final position for the last complete month is not fully validated until the 20th day of the following month – i.e. results are provisional up until this date.	
Scope of Indicator		External	Internal
7. External / Internal Indicator		Defined by the Department of Health	Performing category mirrors national target.
8. Benchmarking	Externally benchmarked?	Yes	
	Organisation	Department of Health	
Roles and Responsibilities			
9. Who is the most senior person to sign off the data each time it is reported?		Charlie Carr – Head of Performance Improvement	
10. Please give lead names regarding roles and responsibilities for both aspects of this indicator		Data collection / provision of results	Review of results and taking action
11. Executive Lead / Director			Suzanne Hinchliffe, Deputy Chief Executive / Chief Nurse
12. Accountable Officer (Corporate)		Charlie Carr – Head of Performance Improvement	Nigel Kee, Monica Harris, Neil Doverty, David Yeomanson – Divisional Managers
13. Accountable Officer (Divisional / CBU level)		CBU Managers	CBU Managers
14. Administrator		Shaun Leah – Information Manager	Shirley Priestnall – Information Manager
Data Collection			
15. What data is used for this indicator? (raw data / source)		HISS data	
16. Is any data specifically excluded from measurement of the Indicator?		Planned patients, emergency activity, as per national guidance	
17. Are specific exclusions documented		Yes – Referral to Treatment Policy	
18. Describe whether results can be tracked back to individuals (patients or staff) for validation purposes, or are the results based on a representative sample?		Patients	Staff
		Yes – patient level data on HISS and on reports for action and validation	Yes - Data entry on HISS is accessible via transaction logs to individual staff input.

19. What is the process used for collecting the data? (e.g. provide procedure document)	Recording dates and Referral to Treatment Status at referral, appointment and treatment as per the Referral to Treatment Policy. Local CBU Standard Operating Procedures are in place.

20. Provide a flow chart to indicate data collection and validation processes used for assuring the quality of data. Validation processes are independent checks undertaken on data subsequent to data collection. Number the steps in sequence and then indicate (using shading) where each step significantly relates to the 6 dimensions of data quality (as defined in appendix 1).



21. Describe how each step relates to the 6 dimensions of data quality						
Stage	*Accuracy*	*Validity*	*Reliability*	*Timeliness*	*Relevance*	*Completeness*
1. Choose & Book referrals – pathway starts automatically	Automated procedure	Valid codes guaranteed	Pathway consistently applied	Data collected automatically at time of booking	Intrinsic relevance in national rules applied	Pathways applied to all CAB referrals
2. Referrals manually registered using local RTT SOP in CBUs	Pathway info may not be clear on referral (esp. cons to cons)	Start date and pathway ID collected as per national standards	If a new pathway is 'assumed' multiple pathways may exist	Referrals are recorded as real time as possible	Subsequent validation requirements imply it's not clear whether patient is on new or ongoing pathway.	Some referrals may be missed from RTT
3. Validation of Non-admitted RTT using PTLs and other data quality reports in CBUs	Validation ensures that correct codes are applied to activity	Only valid codes are accepted	Validation involves an overview of consistency and application of local rules	Validation is late entry/correction of data	Validation views data in context	Coverage is reviewed and improved
4. Outpatient attendances and diagnostic appointments, RTT status is updated	Information may not be present on outcome sheets	Only valid codes are accepted	A non-valid code (out of sequence) may be entered	Outcomes & RTT status are collected as real time as possible	Subsequent validation requirements imply it's not clear what RTT should be. (Improved documentation & clinical engagement required)	Completion of RTT data on HISS is not mandatory
5. Data made available for reporting in UHL data warehouse	N/A - Warehouse holds data and does not manage user accuracy	Warehouse allows code use to be validated and analysed	Warehouse structure ensures data integrity	Warehouse processing ensures data is available for reporting	N/A - Warehouse holds data and does not manage relevance	All data collected is uploaded to the data warehouse
6. Waiting List additions using local SOP in CBUs	Pathway info may not be clear in waiting list request	Only valid codes are accepted	A non-valid code (out of sequence) may be entered	Waiting List additions are recorded as real time as possible	Subsequent validation requirements imply it's not clear whether patient is on new or ongoing pathway. (Improved documentation required)	Completion of RTT data on HISS is not mandatory
7. Validation of Admitted RTT using PTLs and other data quality report in CBUs	Validation ensures that correct codes are applied to activity	Only valid codes are accepted	Validation involves an overview of consistency and application of local rules	Validation is late entry/correction of data	Validation views data in context	Coverage is reviewed and improved

Stage	*Accuracy*	*Validity*	*Reliability*	*Timeliness*	*Relevance*	*Completeness*
8. Review of performance and data quality at weekly waiting list meeting. (Division Mgr, Perf Improv, Info Mgr)	Data Quality reports address concerns re accuracy	Rules and definitions are clarified when necessary	Variations and anomalies in performance and data collection are reviewed and addressed	Coverage and quality issues are addressed as per meeting deadlines	Capacity and performance issues discussed in relation to RTT management	Coverage is reviewed. Data Quality issues addressed
9. Performance reported daily and forwarded to commissioners weekly (Head Perf Improvnt)	Figures undergo final top level check prior to submission	Data is submitted in compliance with required code set	Data is submitted in required format	Data submitted to meet submission schedule	Data submitted describes RTT performance as intended	Coverage issues are identified and addressed. All RTT data submission (no exclusions applied)
10. Continuing daily validation of last/current month in CBUs.	Validation ensures that correct codes are applied to activity	Only valid codes are accepted	Validation involves an overview of consistency and application of local rules	Validation is late entry/correction of data	Validation views data in context	Coverage is reviewed and improved
11. Spot check audit undertaken quarterly, radom sample of 200 records (Information Manager)	Checks that local procedures are accurately applied.	Application of national data definitions are used to validate accuracy of code usage	Application of national data definitions are used to validate patient pathway sequence	Timeliness of erroneous data collection checked– whether resulting from real-time errors or poor validation	Validation informs staff training and improvements to documentation	Checks ensure that all records are accounted for.
11. Data reported to Department of Health by Informatics Team	Figures undergo final top level check prior to submission	Data is submitted in compliance with required code set	Data is submitted in required format	Data submitted to meet submission schedule	Data submitted describes RTT performance as intended	All RTT data is submitted (there are no exclusions)
SUMMARY	PASS	PASS	PASS	PASS	PASS	PASS
Stage	*Accuracy*	*Validity*	*Reliability*	*Timeliness*	*Relevance*	*Completeness*

22. Who has undertaken the assessment	Names	Date Completed	Next Scheduled Assessment Date
	Shirley Priestnall – Information Manager	4th September 2012	March 2013

	Charlie Carr – Head of Performance Improvement		

23. Describe actions (with timescales) that will result in improved controls (this is mandatory where assessment indicates failure against 1 or more dimensions)

1. Clear SOPs in all specialties that cover relevant scenarios – being reviewed
2. New report to monitor coverage of RTT pathways on referrals – required by Dec 2012
3. Clear marking of referrals and waiting list slips with RTT information
4. Improved pathway management functionality on HISS/PatientCentre – available in system upgrade.