



**BOARD OF DIRECTORS MEETING**  
11<sup>th</sup> January 2017

Open BoD 11.1.17  
Item No: 07iii

<b>TITLE OF PAPER</b>	Service Performance - QlikView Project Summary Report
<b>TO BE PRESENTED BY</b>	Mr. P. Easthope, Executive Director of Finance
<b>ACTION REQUIRED</b>	Information

<b>OUTCOME</b>	To note progress on the implementation of QlikView and revised timetable.
<b>TIMETABLE FOR DECISION</b>	January 2017 Board of Directors
<b>LINKS TO OTHER KEY REPORTS / DECISIONS</b>	-
<b>LINKS TO OTHER RELEVANT FRAMEWORKS BAF, RISK, OUTCOMES ETC</b>	- NHS Constitution: Patients <input type="checkbox"/> Public <input type="checkbox"/> Staff <input type="checkbox"/> HSE <input type="checkbox"/> MH Act <input type="checkbox"/> Equality Act 2010 <input type="checkbox"/>
<b>IMPLICATIONS FOR SERVICE DELIVERY AND FINANCIAL IMPACT</b>	-
<b>CONSIDERATION OF LEGAL ISSUES</b>	Not Applicable

<b>Author of Report</b>	Peter Sorrell/Nicola Haywood-Alexander
<b>Designation</b>	Head of Informatics & Information Systems/Director of IMST & Chief Information Officer
<b>Date of Report</b>	December 2016



## SUMMARY REPORT

Open BoD 11.1.17  
Item 07iii

**Report to:** BOARD OF DIRECTORS

**Date:** 11<sup>th</sup> January 2017

**Subject:** Service Performance – QlikView Project Summary Report

**From:** Phillip Easthope, Executive Director of Finance

### 1. Purpose

<i>For Approval</i>	<i>For a collective decision</i>	<i>To report progress</i>	<i>To seek input from</i>	<i>For information</i>	<i>Other (please state below)</i>
				X	

### 2. Summary

The following paper was recently received by the Trust’s Business Planning Group and provides a summary of the recent “health check” undertaken by the Chief Information Officer in October 2016, following the transfer of technical leadership of this project to IMST.

This health check has allowed an appraisal of the project, the work carried out and a forecast to be made.

### 3. Next Steps

As a result of discussion at the Business Planning Group (BPG) in December 2016, the following was agreed:

In relation to decision D-07 the BI Leadership Group should not be developed and that any decisions that need to be made should fall into an existing group under the new digital transformation framework.

In respect of D-04: Advocate and authorise activities to reduce the current number of data issues and inconsistencies, it was agreed that a meeting should take place with the Deputy Chief Executive; Executive Director of Finance and the Director of IMST in the new year to take stock and understand what the risks are; identify a plan for going forward and the plan for prioritization.

### 4. Required Actions

To note the discussions at BPG and agreed actions.

### 5. Monitoring Arrangements

Via the Business Planning Group.

### 6. Contact Details

Phillip Easthope, Executive Director of Finance  
[Phillip.easthope@shsc.nhs.uk](mailto:Phillip.easthope@shsc.nhs.uk)

## QlikView BI Dashboards (BI Systems Phase 1) Project – Status Report

<b>Programme/Project</b>	BI Systems Project Phase 1: QlikView Dashboards
<b>Governing Body</b>	Business Planning Group
<b>Exec SRO</b>	Phillip Easthope, Executive Director of Finance
<b>Change Leader</b>	Jason Rowlands, Director of Strategy Planning
<b>Digital Leader</b>	Nicola Haywood-Alexander, Director of IMST and PMO
<b>Programme/Project Manager</b>	Leia Hardy (until 16/12/16)
<b>Programme/Project Purpose and Objectives</b>	<p>The Project was set up to:</p> <ul style="list-style-type: none"> <li>• Reduce number of silo BI systems in use across the Trust.</li> <li>• Collate Trust information from these systems without manual intervention.</li> <li>• Address issues regarding the quality and availability of information in circulation not being consistent.</li> <li>• Be able to disaggregate information back to services and teams for greater understanding of performance.</li> <li>• Have standard and consistent processes across the Trust that save time and are resource efficient.</li> <li>• Address previous lessons learnt: <ul style="list-style-type: none"> <li>○ lack of on-going revenue to support and develop BI</li> <li>○ amending indicators for reporting is resource-intensive, requiring dedicated and skilled staff</li> <li>○ lack of stakeholder engagement to use the system.</li> </ul> </li> </ul> <p>The Project set out to deliver a number of dashboards, developed to provide the following KPI information electronically:</p> <ol style="list-style-type: none"> <li>i. a monthly directorate dashboard that provides a snapshot of Trust-wide and directorate performance for a number of areas including quality and effectiveness of service, incidents, HR &amp; workforce and financial standing</li> <li>ii. automated dashboards carrying information held on Insight relating to the quality, effectiveness and safety of clinical services</li> <li>iii. further dashboards for the Inpatient directorate.</li> </ol> <p>The dashboards are an intermediary step, replacing paper-based processes for reporting.</p>
<b>Author</b>	Nicola Haywood-Alexander, Leia Hardy
<b>Report Date</b>	20 December 2016
<b>Reporting Period</b>	02 November 2016 – 20 December 2016
<b>Version</b>	V1.0
<b>Distribution</b>	Business Planning Group

<b>Status</b>	↑	Amber				
<b>QLIKVIEW DASHBOARDS PROJECT STATUS<sup>i</sup></b>						
Project work streams	Owner	14/08/16	14/10/16	02/12/16	14/02/17 (Forecast)	14/04/17 (Forecast)
<b>Products</b>						
1.1 Specialist	DH	G	Completed			
1.2 Community	PN	G	Completed			
1.3 Care Pathways and Packages	JB	G	Completed			
1.4 Learning Disabilities	AW	G	G	R	A	G
1.5 Inpatient	LJ	A	G	Completed		
1.6 Incidents	TB	A	G	Completed		
1.7 Finance	JS	R	A	A	A	G
1.8 HR	DW	A	R	R	R	A
1.9 Mandatory Training	GH	A	R	R	A	A
2.1 Care Pathways and Packages Version 2	JB			G	G	G
2.2 Safeguarding	ER			G	G	G
2.3 Mental Health Act	CD			G	G	G
2.4 Infection Control	GS			A	A	A
2.5 Deprivation of Liberty	CD			A	A	A
2.6 Primary Care (LTNC, CG)	PE			R	R	R
<b>Cross-cutting Themes</b>						
Commutations and Promotion	TBC	A	A	G	G	G
Data Ownership	TBC	A	A	A	G	G
Trust Dashboards	JR	R	R	R	R	A

<b>Project Management Strategies</b>						
		14/08/16	14/08/16	02/12/16	14/02/17 (Forecast)	14/04/17 (Forecast)
Risk and Issue Management		R	R	G	G	G
Timescales		R	R	R	A	G
Resources		R	A	A	A	A
Costs		R	A	A	A	A
Product Quality (assurance)		G	G	G	G	G
Stakeholder Engagement		A	G	G	G	G
Change Management		A	A	A	G	G

Benefits Realisation	R	A	A	G	G
OVERALL STATUS	R	A	A	A	A

<b>COMMENTARY</b>					
<p><b>Summary</b></p> <p>The Project was initiated in March 2015. It was re-baselined in March 2016. The absence of a project plan has meant there has been no projection from this baseline as to when the work would be completed.</p> <p>The Health check undertaken in October 2016 has allowed an appraisal of the work carried out and a forecast to be made based on this appraisal.</p> <p>It is now estimated that all dashboards, except the HR and Training dashboards, will be complete by end the January 2017. The HR dashboard's completion is dependent upon the HR system upgrade as key data will not available until then.</p> <p>There have been several challenges in regard to delivery of these dashboards:</p> <ul style="list-style-type: none"> <li>• <b>Time Commitment from Domain Experts:</b> Sufficient time and resource were not anticipated and planned for by the business to ensure the MI analysts had well defined and documented KPIs to work with. This could be especially problematic where report writing had previously been based on salient knowledge.</li> <li>• <b>KPI Definitions:</b> These were not always agreed and this resulted in source code having to be rewritten.</li> <li>• <b>Data Quality:</b> There were many examples of data inconsistency or missing data for which there was insufficient resource to implement a permanent fix.</li> <li>• <b>Data Source:</b> Some of the systems we use do not have the necessary source data, or we do not have the right data mining tool and people the use other sources leading to data quality issues.</li> <li>• <b>Reporting Capabilities:</b> have been limited due to the absence of an Enterprise Data Warehouse. It is proposed that the scope of the original Business Intelligence Systems (BIS) Project is adjusted to build an Enterprise Data Warehouse as part of Phase 2. (D-06).</li> </ul> <p><b>Costs and Resources</b></p> <p>Technically the Project is not over budget, in terms of spend but that spend has slipped and this could pose problems for wider management of the Trust's finances.</p> <p>The workload for converting existing reports into dashboards will have involved 3.4 wfe skilled analysts over 12 months. These resources were not ring-fenced to the Project until March 2016. Therefore, the actual and forecast cost against planned have changed.</p> <p>The original business case did not identify project savings. It is expected that real savings will come from a highly centralised management of data and delivery model for the provision of MI and BI across the Trust.</p> <p>As a result of issues encountered in terms of data quality, structure and the efficient and effective production of dashboards (and reports), it is also recommended that the scope of the original Business Intelligence Systems (BIS) Project is adjusted.</p> <p>The outline case for this is explained in more detail, later in this report. If the case for changing the Project scope in phase 2 is agreed (D-06) a revised business case will be produced. In which case, resources will need to be allocated to undertake the discovery work to develop the full business</p>					

case.

An estimate of the most likely costs for Phase 2 is provided, but more detail investigations are required. It is considered that this work could be capitalised as a Data Warehouse is an asset.

	Phase1 Planned and Actual Proposal: QlikView Dashboards			Phase2 Outline Financial Proposal: Data Warehouse, Suite of BI Tools and Self-Serve Reporting (D-06)		
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Actual and Forecast spend	£ 155,769	£ 91,103	£ 200,541			
Planned	£ 218,600	£ 124,544	£ 130,364	£ 725k	£ 350k	£ 275k
Annual variation	<b>-£ 62,831</b>	<b>-£ 33,441</b>	£ 70,177			
Forecasted variation			<b>-£ 26,095</b>			
Original planned cost			<b>£ 473,508</b>			
Estimate of revised investment proposal						<b>£ 1350k</b>

### Outcomes and Benefits

In terms of contributing the outcomes stated in the business case for this project, to date it has:

- built a suite of dashboards that collate Trust information from our systems without manual intervention
- enabled the disaggregation of information back to services and teams for greater understanding of performance where it is part of the suite of dashboards built
- not reduced the number of silo BI systems in use across the Trust.
- not addressed issues regarding the consistency, quality and availability of information
- generated a standard and consistent processes across the Trust that save time and are resource efficient

Of the previous lessons learnt:

- The lack of on-going revenue to support and develop BI had been addressed but required permanent and optimised investment in the necessary skills
- Resource-intensive amendment of indicators for reporting will remain a problem until some fundamental data governance policies and practices are put in place.
- Stakeholder engagement has improved but resourcing delivery is still problematic as the delays in the Project demonstrate

In terms of the outputs cited in the project scope, progress with specified dashboards developed to provide KPI information electronically is provided by this status report with details under the Delivery section.

If BPG endorse recommendation 8 from the lessons learnt this will be addressed by establishing a BI Leadership Group under DIGB to oversee the establishment of a central data capability and to prioritise the optimal production of reports across the Trust through a hub and spoke delivery framework.

## **Project Review Lessons Learnt**

Data issues have been encountered regularly while building the dashboards. These issues were recorded, and common occurrences were reported as thematic problems. These common themes have been logged alongside other data management and cultural challenges as lessons learnt from the Project. These lessons learnt are presented in the table towards the end of this report, with proposed actions to be followed-up now and after the Project's closure.

An overarching lesson learnt from this project is that benefits cited in the original business case for BI Systems, taken to Financial and Investment Committee in March 2015, will not be fully realised unless a holistic and architectural approach is taken to the management of our data and information systems.

In February will the cultural acceptance and organisational changes required to facilitate this.

## **Stakeholder Engagement**

Good stakeholder engagement has and continues to be facilitated by the MI Team in the Informatics and Information Systems Department in IMST. Business areas have generally engaged well where work load permitted. Unfortunately, a lack of engagement upon completion of development has slowed up the transition and sign-off of dashboards (R-11).

It is recommended that a reference group consisting of clinical directors, service directors and data managers is set up as a design and change authority that oversees the Project, sets priorities in terms of build and production of dashboards and reports (D-07)

## **Project Management and Documentation**

This was lacking including the management of risk and issues (R-08). Project management tools have been put in place from 03/10/16, with retrospective work being carried to appraise the Project's performance and its delivery.

## **Follow-on Actions from last Status Report**

The QlikView Project provided a status report to the Business Planning Group on 1<sup>st</sup> November. Some queries were raised by BPG:

### (i) Learning Disabilities Dashboard

Business Planning Group questioned the status of the Learning Disabilities Dashboard in the previous meeting, as it had shown as a green RAG status on the dashboard, while the commentary in the previous report stated it was in process of 'identifying data requirements'.

This work is on-time and in line with the original plan established in May 2016, and will complete in December 2016.

### (ii) R-04 Finance Dashboard

*The data for the finance dashboard has been prepared by the MI Analyst. Finance domain experts are struggling to commit time to define and document the KPIs.*

*Action: The Deputy Director of Finance is committing time to defining the KPI and dashboard requirements with the Senior MI Analysts who is prioritising this.*

The production of the Finance Dashboard is still a delivery risk. There has been some movement in the last two weeks; however, the MI Team estimates a March 2017 and not a December 2016 completion as originally forecast.

The BPG did not finalise the following decisions pending further information, provided below:

(iii) D-01 HR Dashboard

*Postpone the provision of HR dashboards until the ESR2 release to assess the new interface (expected late 2017) and re-baseline delivery of this package of work. There is a need to understand the feasibility and resource implications that this will include, and needs further investigation as to whether a dashboard that HR could use now and integrate at a later date once ESR2 was implemented.*

The Project raised a request with IBM to understand the full specifications of the ESR2 interface, including if there is an expectation that there will be a better interface with more information once ESR2 is implemented. IBM have confirmed that there will be no change to the interface when ESR2 is released, so no further data items will be made available (I-01).

The HR dashboard developed to date includes metrics that are available through the current ESR interfaces so these elements of the dashboard can be automated within a QlikView dashboard with the exception of PDR data, Mandatory training and information on WTE.

The possibility of getting the missing data to flow in the extracts from ESR2 will continue to be pursued with the system supplier. In the meantime, it is proposed to manually upload the PDR information to the QlikView dashboard based on monthly reports produced by the Workforce Information Analyst. This will allow monthly PDR information to be updated and displayed on the Qlikview dashboard until such a time as are more automated solution can be developed.

It is proposed to test the manual upload of the PDR data from the January PDR report produced by the Workforce analyst and hopefully a process can be signed off following this testing.

A decision is required to endorse the above recommendation to manually upload PDR data to QlikView dashboards. It is important to note that the PDR will not be real-time data as originally planned however; the aim is to upload the data monthly so it is viewable in an HR dashboard until a more automated solution can be developed.

(iv) D-02 Mandatory Training Dashboard

*As we cannot use QlikView to provide Mandatory Training dashboards, it is proposed that we use the Oracle BI Suite and extract and transfer in data required from other systems.*

Data that enables us to identify the mandatory training undertaken by particular job role or assignment is not accessible, preventing the team from developing the specified dashboard of the key Training indicators.

As an alternative suggestion at the last BPG, it was put forward that the Project either produces the mandatory training dashboards via the BI Oracle Suite or via team reports expected to be implemented by February 2017, which would be accessed via the shared drive. BPG endorsed the option to provide this information via team reports.

In addition, there is the possibility of also manually uploading mandatory training data to the QlikView dashboard via existing reports produced by the Training department. This approach will be tested in January by the training department and IMST. As with the PDR information, it is important that an automated solution continues to be pursued in the longer term.

Next set of Dashboards (R-09)

Business Planning Group previously identified further Corporate Dashboards and it was requested that these be included in the Project. These include:

- **Safeguarding Children and Adults**

- **Infection Control**
- **Mental Health Act**
- **Declaration of Liberty**
- **Primary Care**

Business Planning Group also decided to commission a second version of **Care Pathways and Packages Dashboard**.

There is a project risk that in the absence of an original project definition document, these are new requests and as such the Project is suffering scope creep that must be managed and governed appropriately.

It is recommended that a group of senior management representatives, henceforth known as the BI Leadership Group work with the Project Team to:

- (i) agree what is and what is not in the scope for this project for BPG to ratify
- (ii) become the design and change authority for prioritising the future build of data sets, reports and dashboards during the proposed Phase 2 of the BIS Project.

The BPG did not finalise the following decisions at the last BPG:

#### **Case for Change to Phase 2 of the BIS Project (D-06)**

As part of her review of the Project when taking over its technical leadership, the Chief Information Officer (CIO) has identified that the QlikView dashboards have been developed without the provision of a Data Warehouse (R-10) or Data Governance Policy.

In the original business case, there is a recommendation to review the organisational arrangements around the provision of information, reports and dashboards. The need to define and establish a BI, MI Reporting Delivery Framework is still relevant.

Consequently, the CIO is recommending that the scope for Phase 2 of the BIS Project is reviewed and a new business case brought to BPG to consider to invest in capable resources and tools to deliver the data infrastructure required to ensure better data quality and governance and support more efficient delivery of reports and dashboards.

It is important that building the data infrastructure required to enable staff to produce dashboards effectively, efficiently and with ease, is now seen as a priority.

This involves building a Data Warehouse and Self-Service Reporting Portal, and developing and establishing a set of processes (Reporting Delivery Framework) that will enable the production of reports and QlikView dashboards.

In the longer term and following further training, these dashboards could be done by business support officers (currently located in the service areas), while the central MI Team in IMST concentrate their specialist capabilities on producing statutory, strategic and ad-hoc reports where advanced data mining skills are required. To assure better data integrity going forward, data mining should only be carried out by skilled analysts and access to databases actively constrained.

This requirement can be prescribed by a Data Governance Policy, which would be primarily implemented to address data quality by establishing clear ownership and accountability for data, the necessity to take data only from its source and to ensure provenance of all data used to create BI and MI reports.

As the Data Warehouse will need to be built for the Trust by the Central IMST Team, the relevant business and service areas will need to commit the resources for continuing to design and develop reports (Lessons Learnt recommendations 1 and 2).

It is anticipated that an investment of up to £1.5M over 4 years for the Data Warehouse and Self-Service Reporting Portal. The Finance Directorate is aware of this potential investment so they can incorporate this into the Trust's finance planning and the MI Team are currently reviewing hardware

costs.

It is important to note that regional CIOs do not expect this area of work to be implemented as a shared service, however, there are options currently being explored whereby the approach, schemes and tools will be shared across Trusts and CCGs, to support Carter efficiencies.

### **Data Issues**

Issues associated with live and statutory reports will be best fixed through collaborative working between the services and Central Informatics team, with the order of work being aligned to business priorities (set by a BI Leadership Group, see D-07) and the logical build of the data warehouse (technical advice coming from the Data Warehouse Architect, as a member of the BI Leadership Group).

### **Integration Issues**

In the previous Business Planning Group, two queries were raised as to whether a Primary Care Dashboard could be produced, and whether SystemOne would link to Qlikview.

It is important to note that QlikView is not a system; it is a tool. There is the potential to expect issues when extracting data from TTP. It is well known amongst CIOs that this has been the experience of other healthcare organisations, and for this reason the Trust must be aware that this is likely to be even more problematic than extracting data from ESR and JAC.

It is strongly recommended that the Trust procures an integration platform, which is a standard IS architect's tool. This is currently being investigated and a further business case will be brought to BPG or included in the BIS Project Phase 2 business case.

The standardised Trust Integration Engine (TIE) for integrating new solutions with existing applications was not taken up when offered (at no cost) by the YHSHA back in 2009.

## **DELIVERY**

### **FIRST TRANCHE OF DASHBOARDS**

#### **Specialist Dashboard**

This dashboard went live on 01/05/2016.

During production, a number of multiple data inconsistencies were identified. These have been logged and it is recommended that the Informatics Team works with the Directorate to address these (D-04). These included:

- Patients on current waiting list who have had an assessment
- Patients on current waiting list with no removed date but a removed reason
- Patients on current waiting list but with the associated episode closed

#### **Community Dashboard**

The Community Dashboard went live on 01/06/2016.

Allocation of licenses needs to be reviewed in order to meet demands coming from the Service since the release of the Dashboard.

#### **Care Pathways and Packages Dashboard**

The Care Pathways and Packages Dashboard went live on 01/09/2016.

A second version was requested but it is recommended to build mental Health Clustering indicators

into other dashboards rather than house them in a separate dashboard.

### **Learning Disabilities Dashboard**

The Learning Disabilities Dashboard is in process of identifying data requirements with the directorate. It is anticipated that these will be closely related to indicators already developed for other directorates.

It is estimated the work will be completed in February.

### **Inpatient Dashboard**

The Inpatient dashboard is now fully developed.

Testing by Informatics and Information Systems Department by comparing figures to the existing MS Excel Dashboard is completed. At the moment this is awaiting a final demonstration to Richard Bulmer and Lisa Johnson for them to sign off.

As with the Specialist dashboard, during production number of multiple data inconsistencies were identified. These have been logged and it recommended that the Informatics Team work with the Directorate to address these (D-04).

These included:

- Waiting lists closed or episodes ended with dates in the future,
- Contacts recorded whilst waiting lists are still open or with dates before the referral date.

These can be prevented in future with better built-in system-checks on entry, the Insight2 development would be the appropriate place to do this. The amount of existing data that will need to be amended will depend on how much historical data is included in the QlikView dashboards.

### **Incidents Dashboard**

This Incidents Dashboard has been completed, tested and went live on 14/11/16.

### **Finance Dashboard**

The data for the Finance Dashboard has been identified and initial load completed and verified. Further development work involving the Finance Directorate will be necessary (R-04).

### **HR Dashboard**

Some of the data needed to create the required indicators cannot be extracted from the current ESR system and IBM have now confirmed that there will be no change to the interface when ESR2 is released so no further data items will be made available (I-01).

We have no historical HR information from the ESR system before 2015 because we only purchased the current interface from 2015. There are data issues when the WTE is changed in the system affecting information about sickness and other management information we require. However, data is available for other indicators which do not rely on WTE numbers.

Information on PDRs is not available because this is not provided as part of IBM's generic interface. We would need to specify and procure this as a service from IBM or collect and store it ourselves in a separate but linked data repository, both solutions would be involve resources and cost.

When gathering HR dashboard requirements KPI definitions were correct and consistent, however people across the Trust are not always using the HR systems as the definitive source. A policy paper regarding was brought to EDG in July.

The LOS calculation was incorrect but has been fixed.

### **Training Dashboard**

Data that enables us to identify the mandatory training undertaken by particular job role or assignment is not accessible, preventing the team from developing the specified dashboard of the key Training indicators. (I-03, R-06)

An alternative solution would be to use Oracle Business Intelligence Tools with our EDT systems to extract the necessary data and create the dashboard.

## **SECOND TRANCHE OF DASHBOARDS**

### **Safeguarding Children and Adults Dashboard**

Safeguarding information is recorded on Insight and reports currently exist to extract information. It is expected that the Safeguarding Children and Adults Dashboard will be completed post-implementation of the new Insight Safeguarding module in March 2017.

### **Mental Health Act Dashboard**

Detentions are currently recorded on Insight. Weekly audits are compiled in a separate spreadsheet. It is expected that this Dashboard will be completed in March 2017.

### **Infection Control Dashboard**

The requirements will need to be discussed and fully explore including what they report already, The MI Team think the current method may be separate spread sheets.

It is difficult to give an overall timescale for completing the dashboard until a full investigation into the data requirements, source and extracts is completed. It is anticipated that this discovery work will be complete by the end of December.

### **Declaration of Liberty Dashboard**

DOLS information is not currently recorded on Insight. A separate DOLS register is held in a separate spreadsheet by Anita Winter.

It is difficult to give an overall timescale for completing the dashboard until a full investigation into the data requirements, source and extracts is completed. It is anticipated that this discovery work will be complete by the end of January 2017.

### **Primary Care Dashboard**

Primary Care uses SystemOne. From discussions with other Trusts we know we will be faced with a similar situation to ESR where we can run their predetermined reports to get the answers but not our own queries on the raw data.

Initially we will need to know what reporting Primary Care already do and then approach TPP.

An update will be provided once this work has been undertaken, but it anticipated that this will need to be planned later in 2017.

Project Issues				
ID	Date raised	Description and Impact <i>Management action</i>	Board Owner	Confidence <sup>ii</sup>
I-01 (R-02)	12/09/16	HR dashboards cannot be fully developed because the either data via the current interface or the historical is not stored. <i>Update 02.12.16:</i> IBM have now confirmed that there will be no change to the interface when ESR2 is released so no further data items will be made available.  <i>Revised Recommended Action:</i> (i) Continue with the constrained development of the QlikView HR dashboard (D-01) (ii) Review options for storing and reporting on PDRs	DW	
I-03 (R-06)	04/10/16	We cannot use QlikView to with to extract data from our EDT system and create Mandatory Training dashboards <i>Recommended Action:</i> Either continue with QlikView HR dashboard and mandatory training dashboards Or use the Oracle BI Suite to provide Mandatory Training dashboards, by extracting and transferring required data from other systems (D-02)	DW	

Issue I-02 is now closed and mitigating action regarding the lack of project management documentation have reduced this to a low level risk R-04

Issue I-04 and Risk-07 is now closed.

Key Risks					
ID	Date raised	Description and Impact <i>Management action</i>	Risk P/I	Board Owner	Confidence <sup>ii</sup>
R-01	11/07/16	The project was significantly behind schedule when it was transferred to IMST and PMO to deliver. MI analysis resources relating to this project from the PPG Directorate were transferred over to IMST but not the project manager as they had moved to another role before this project was completed. Project Managers elsewhere in the PMO had be allocated to other work across the Portfolio.  <i>Impact: Extra work for staff in IMST and PMO in undertaking a project health check, and taking on management responsibilities until planned resources allocated to Phase 2 of BI Systems Project were in place and can take on this outstanding work as well.</i>	12	NHA	

Key Risks					
ID	Date raised	Description and Impact <i>Management action</i>	Risk P/I	Board Owner	Confidence <sup>ii</sup>
		<p><i>This will be from December 2016</i></p> <p><u>Action:</u> <i>The Director of IMST will provide interim project management where they can to help move the project forward and provide better information for managing the expectations of the Trust</i></p> <p><u>Update 02.12.16:</u> <i>A project manager was assigned to project from December but is leaving the Trust. This risk remains moderate until a new project manager is appointed.</i></p>			
R-03	23/09/16	<p>The data for the Finance Dashboard has been prepared by the MI Analyst. Finance domain experts are struggling to commit time to define and documenting the KPIs</p> <p><i>Impact: The finance dashboard is behind schedule and will not be delivered March 2017.</i></p> <p><u>Action:</u> <i>The Deputy Director of Finance will commit time to defining the KPI and dashboard requirements with the Senior MI Analyst who is prioritising this.</i></p> <p><u>Update 02.12.16:</u> <i>This work has been re-planned and is due for completion in March 2017. This is now a low level risk and will only be reported on again if risk increases..</i></p>	5	PE	
R-08	27/09/16	<p>No management documentation for the project other than the business case which went to Trust Board in March 2015</p> <p><u>Action:</u> <i>The Director of IMST to carry out a health check of the project, work with the team to create a plan and management logs, and provide a status report for the BPG</i></p> <p><u>Update 02.12.16:</u> <i>Mitigating action has reduced this I-02 to a low level risk and will only be reported on again if the risk increases again.</i></p>	5	NHA	
R-09	02/11/16	<p>There is no original project definition document, and new requests for dashboards are being raised without clarity as to whether these were part of the original project plan. There is a risk that the project is suffering scope creep.</p> <p><u>Action:</u> <i>It is recommended (D-07) that a group of senior management representatives, henceforth known as the BI Leadership Group work with the</i></p>	15	CC	

Key Risks					
ID	Date raised	Description and Impact <i>Management action</i>	Risk P/I	Board Owner	Confidence <sup>ii</sup>
		<p><i>Project Team to</i></p> <p>(i) <i>agree what is and what is not in the scope for this project for BPG to ratify</i></p> <p>(ii) <i>become the design and change authority for prioritising the future build of data sets, reports and dashboard during the proposed phase the 2 of the BIS Project.</i></p>			
R-10	22/11/16	<p>The Trust has developed the QlikView dashboards without the provision of a Data Warehouse. Once the Trust does implement a Data Warehouse the existing dashboards will need to be amended to use that as a source requiring additional work/resources.</p> <p><u>Action:</u> <i>The Chief Information Officer (CIO) will bring a revised business case for Phase 2 of the BIS Project to DTB for them to consider and recommend to BPG. This will outline the investment required to deliver the data infrastructure required to ensure better data quality and governance and support more efficient delivery of reports and dashboards</i></p>	16	NHA	
R-11	22/11/16	<p>Development of the QlikView dashboards has been slowed by delays in directorate engagement to verify and sign-off dashboards.</p> <p><u>Action:</u> <i>Services need to own and sign off their own dashboards to ensure engagement is continuous, and milestone delivery dates are met.</i></p>	10	CC	

Risk R-03 has been closed

Lessons Learnt (D-05)				
ID	Description and Impact	Recommendations	Exec Owner	Confidence <sup>iii</sup>

<b>Lessons Learnt (D-05)</b>				
<b>ID</b>	<b>Description and Impact</b>	<b>Recommendations</b>	<b>Exec Owner</b>	<b>Confidence<sup>iii</sup></b>
LL-01	<p><b>KPI Definitions</b></p> <p>Services hadn't always agreed and documented KPI definitions</p> <p>Source code has to be rewritten</p>	<p><b>Recommendation 1</b></p> <p>The Trust develops and introduces</p> <ol style="list-style-type: none"> <li>Data Governance Policy to reinforce the notion of one single source of data,</li> <li>Data Dictionary to define data and ensure consistency</li> </ol>	PE	
LL-02	<p><b>Missing data</b></p> <p>The required data could be collected from our existing systems, but the data capture was not completed during the processes that would input data</p>	<p><b>Recommendation 2</b></p> <p>The Trust develops and introduces a structured Data Warehouse to store data it uses for BI and MI generated from across our information systems, in particular statutory and regulatory reporting and where we need to keep legacy data for presenting trends</p>	CC	
LL-03	<p><b>Data Quality</b></p> <p>There were regular problems with existing data e.g. inconsistent dates.</p> <p>Often it was difficult for services to identify what the data should be and needed to actually change.</p>	<p>Long term this will be addressed as part of building an enterprise data warehouse. In the short-term it will involve data cleansing and system validation</p> <p>Implement recommendation 1 and 3 and consider</p> <p><b>Recommendation 3</b></p> <p>Introducing a cycle of:</p> <ol style="list-style-type: none"> <li>Data checks built into system design and development (note: retrospective work would be costly)</li> <li>Data cleansing audits</li> <li>Evaluation of what data issues warrant cleansing</li> </ol> <p><b>Recommendation 4</b></p> <p>Communications and staff training on importance of data quality and governance</p>	LL	
LL-04	<p><b>Data Exports</b></p> <p>Unable to export legacy data from externally supplied systems, specifically IBM for ESR</p>	<p><b>Recommendation 5</b></p> <p>BI requirement to be part of the selection criteria for any information system and/or service going forward</p>	PE	
LL-06	<p><b>Choice of BI Tool</b></p> <p>QlikView cannot be used for mining certain types of</p>	<p><b>Recommendation 6</b></p> <p>Review what BI tools and skills the organisation needs to invest in to be fully</p>	PE	

Lessons Learnt (D-05)				
ID	Description and Impact	Recommendations	Exec Owner	Confidence iii
	database	<p>effective in delivering the reports and dashboards it requires.</p> <p>Gather all trust data, information and directorate requirements.</p> <p>Always involve expertise from IMST in technology purchases (through the new digital transformation governance processes) especially technical tools.</p>		
LL-07	<p><b>Sign Off</b></p> <p>Difficulty in securing sign-off for completed dashboards for services</p>	<p><b>Recommendation 7</b></p> <p>Introduce a process for all Data Trustees and Service Performance Managers as accountable officers to sign-off products as part of the Data Governance Policy (recommendation 1) and Performance Management Framework</p>	CC	
LL-08	<p><b>Resource Management</b></p> <p>Competing demands for IMST staff time</p>	<p><b>Recommendation 8</b></p> <p>Establish a BI Leadership Group under DIGB to oversee the establishment of a central data capability and to prioritise the optimal production of reports across the Trust through a hub and spoke delivery framework</p>	PE	

Decisions to be endorsed or made by the Governing Body			
ID	Date	Description	Proposed by
D-04	01/11/2016	<p>It is recommended that the following steps are taken to reduce the current number of data issues and inconsistencies:</p> <p>a) Business as usual activities: Issues associated with live and statutory reports are fixed through collaborative working between the services and central Informatics team, and the order being in line with priority (set by a BI Leader Group) and logic (as advised by the Data Architect)</p> <p>b) Mandate phase 2 of this project: This phase will facilitate the Trust in implementing recommendations 1 and 2 from the Lessons Learnt</p>	NHA

Decisions to be endorsed or made by the Governing Body			
D-06	01/11/2016	It is recommended that the CIO is asked to produce a revised business case for Phase 2 of the Project, which is based on the lessons learnt and the recommendations outlined above in this report.	NHA
D-07	02/12/2016	It is recommended that the CIO is asked to set up a BI Leadership Group consisting of clinical directors, service directors and data managers to act as a design and change authority that oversees the project and sets priorities going forward in terms of build and production of dashboards and reports.	IS
D-08	08/12/16	BPG to endorse the manual upload of PDR and Mandatory training information to the HR and Mandatory Training Dashboards.	LH

## KEYS

### <sup>i</sup> Project Status

G	Confident of delivery, risks being actively managed, no issues
A	Problems regarding a number of elements to resolve; for some escalated decisions and action required, some urgent.
R	Significant problems, decisive action is required to resolve to achieve success
	Not started

### <sup>ii</sup> Risk and Issues Confidence Key

### Risk Probability/Impact Key

G	Under control and acceptable. Stable. Actions in hand.	1-6	LOW
A	Being managed. Reasonably stable. Mitigating actions being implemented, but needs close monitoring.	8-15	MODERATE
R	Not being adequately controlled/managed and/or is currently rising OR factors are beyond the programme/project's direct control.	16-25	HIGH
	Closed		

### <sup>iii</sup> Lesson Learnt Confidence Key

### Probability/Impact Key

G	Easily resolved
A	Resolution possible with development - within the gift of leadership and management

---

R	Resolution is possibly not viable, feasible or affordable – outside remit of programme/ project to resolve.
	Closed