

Trust Board Meeting in Public: Wednesday 13 January 2016

TB2016.15

Title	Summary of plans and governance for EPR and IM&T – Go Digital
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Status	For information and approval
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History	<p>Papers and presentations to prepare for this have occurred as detailed below:</p> <ul style="list-style-type: none"> • Board Seminar February 2015 • Health Informatics Committee 18th May 2015 • Workshop with a wide divisional representation in Tingewick Hall on 21st May 2015 • Widely circulated to the Divisional and Directorate teams for comment • Presentation to Divisional and Clinical Directors, 3rd June 2015 • Presentation to Divisional and Clinical Directors , 2nd September 2015 • Discussion at EPR Steering Group, 15th September 2015 • Health Informatics Committee, 21st September 2015 • Trust Management Executive, 10 December 2015 • Health Informatics Committee, 14 December 2015
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Board Lead(s)	Mr Andrew Stevens, Director of Planning & Information			
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Key purpose	Strategy	Assurance	Policy	Performance
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Executive Summary

1. This paper provides information on the current and proposed governance structure for the future management of EPR and IM&T Services projects. It also details the annual plan for the EPR and IM&T work programme for 2016/17.

2. Recommendation**The Trust Board is asked to:**

- i) Note the revised governance arrangements which will be worked up with relevant Terms of Reference for the next Health Informatics Committee [HIC]
- ii) Approve the annual plan for 2016/17 as detailed in this paper
- iii) Note the requirements for business cases on a number of the core projects included in this paper
- iv) Note the requirement for additional resource to support this programme including £800k to provide additional clinical leadership and ownership from divisions. This will be reviewed as part of the 2016/17 budget-setting process and the development of individual business cases.

1. Purpose

This paper aims to set out:

- a) the governance for the future management of EPR and IM&T projects with new groups to control prioritisation in line with benefit opportunities and, separately, how the programmes are to be managed
- b) the process for priority setting with an annual plan reflecting the priorities of services and departments
- c) A summary of the plans for the next 12-24 months

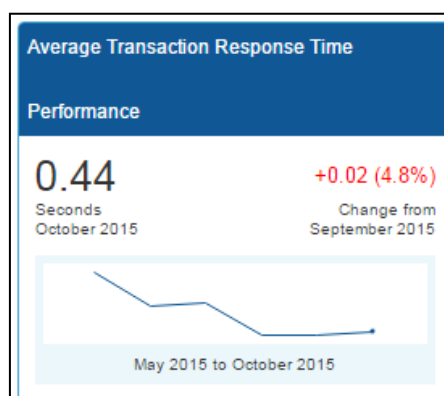
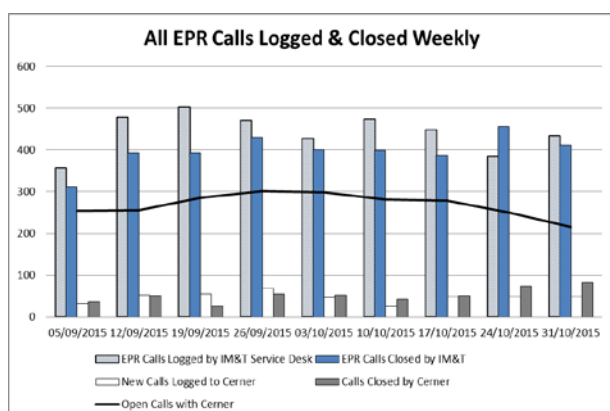
Now EPR is essentially “business as usual” it is critical that the mechanism for agreeing developments is firmly rooted in service management so that changes:

- reflect the benefit priorities of clinical services
- are transparent with committed due dates
- are implemented with a rigour that preserves integrity of the system as a whole preventing regression, rework, and surprises for services.

2. Current Issues

The data centre transfer has placed our contract with Cerner and new procedures and processes have been put in place to manage the new contract.

EPR performance has been significantly better with far fewer occasions of poor performance being reported and performance monitoring is showing that over 95% of transactions are taking less than 2 seconds with usually only 0.5-0.6% taking longer than 5 seconds. Numerous issues have been fixed but there are still a number of problems outstanding. There have been no unplanned outages since the data centre transfer.



A set of 30+ issues are being managed as high priorities to be fixed and there are still some issues around regular data downloads arriving late. These are being escalated routinely. An EPR dashboard covering all aspects of the system and its use is now being

produced regularly and is on the intranet along with reports on current issues. [EPR Cerner Dashboard Reports](#)

3. Baseline

EPR is now no longer a 'one off' project, it is how business is done within OUH to improve tools for staff, service to patients, and benefits for the Trust. The following table illustrates the increasing usage across the Trust.

Powerchart Stats	Aug-15	Sep-15	Oct-15	% change
Logins	331,894	377,497	442,622	33%
Transactions	25,453,348	27,432,247	30,423,225	20%
< 2sec	95	96.7	96.1	1%
Results Endorsed from Inbox	256,233	285,988	304,789	19%
EMAR Opened	838,274	857,427	916,120	9%
Meds Administered	547,868	546,972	574,056	5%
IV Events documented	50,594	49,330	49,135	-3%
Powerplans Ordered	19,696	19,565	20,080	2%
Orders	2,030,175	2,118,685	2,238,976	10%
Chart Opens	1,063,940	1,107,214	1,157,062	9%
Clinical Notes Signed	79,793	91,935	97,033	22%
Powernotes Signed	28,603	31,115	32,524	14%

There are over a million user-triggered transactions every day, including a significant proportion of nursing and most therapist documentation and all discharge summaries being completed on-line. It is now absolutely clear that EPR has, like PACS, reached a tipping point where all clinicians need to use the system to treat patients. This means we now have a common platform that can be used for many different purposes and where additional functionality can be added without the escalating maintenance and support costs associated with increasing the variety of systems in use. This is a huge achievement and means we can deliver further cost effective benefits utilising EPR.

At a wider level IM&T and informatics are now as vital to care as other utilities and need appropriate support and investment to ensure the continued delivery of safe and effective care. Alongside this, information governance, information security and cyber security need to be managed carefully as an integral part of these plans.

4. Overall Programme Governance

The current governance arrangements have a combined Health Informatics Committee and EPR Programme Board reporting in to TME with an EPR Clinical & Operational Steering Group and EPR Programme Management Group providing day to day governance of the programme.

This paper notes that:

4.1 A new strategic Health Informatics Committee will be formed. This will have the responsibility:

- to oversee all Health Informatics work across the Trust
- to approve the IT Capital Programme and any business case involving IM&T
- to set the IM&T strategy and agree rolling annual work plans with appropriate leadership and funded resource
- to approve the plans and policies of the Information Governance and Data Quality group.
- to approve all proposals for new or revised IM&T solutions in the Trust.

This will have senior Divisional Representatives, Clinical Directors/General Managers, Transformation, Information, Chief Information Officers Chief Clinical Information Officers IM&T representatives.

4.2 A new Clinical Leadership Group which will report in to the HIC will be set up. This will have the responsibility:

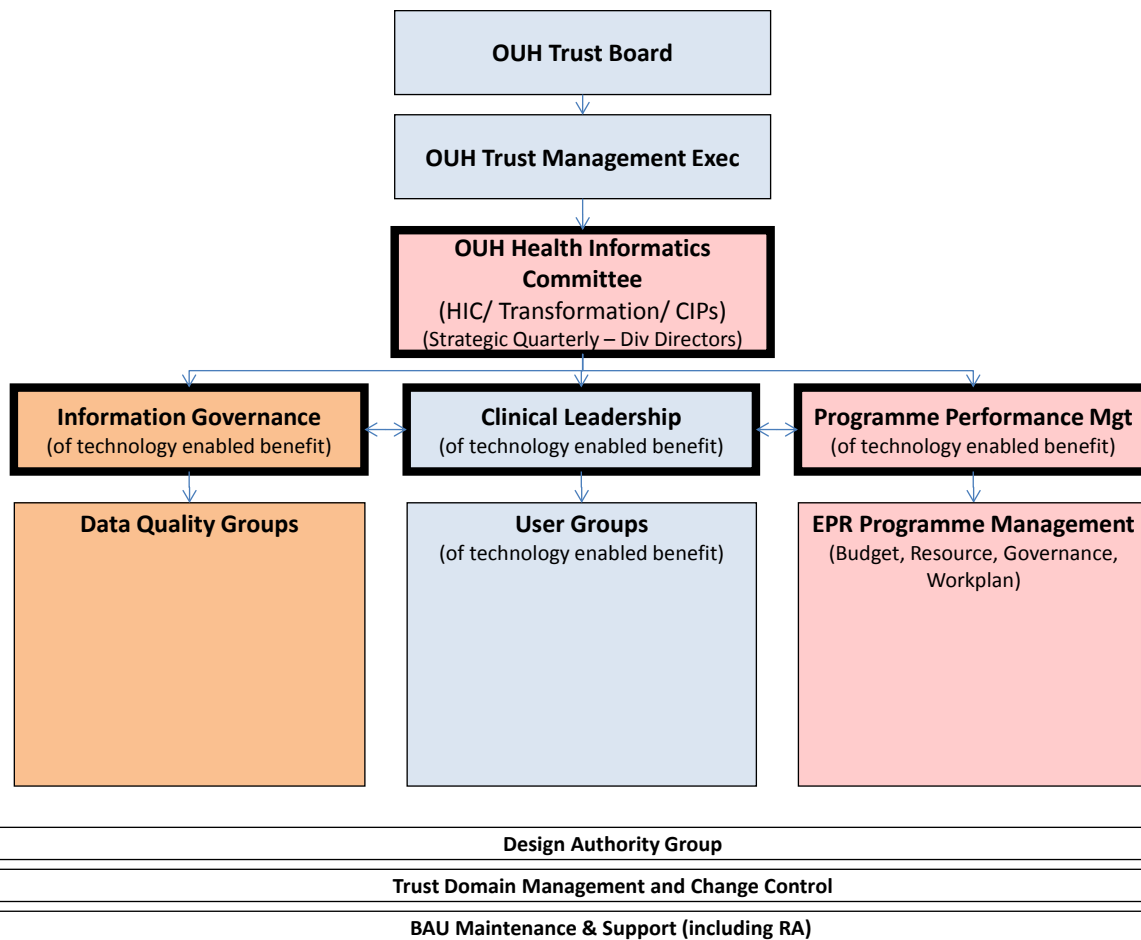
- To draw up the rolling annual work programme, evidencing benefits
- To prioritise and evidence benefits of clinical developments within IM&T
- To identify and manage the pipeline of new developments based on demands and innovations from Trust user groups

The Trust is aiming to appoint medical, nursing and operational informatics leads within each division who have some dedicated time to provide clinical leadership and prioritisation to the programme.

4.3 A new Programme and Performance Management Group will be established:

- To manage delivery and adoption of the programme of work through to full benefits realisation
- Sign off specific projects and packages of work ensuring that these are delivered on time and budget.

4.4 The Information Governance and Data Quality Group will be maintained reporting in to the Health Informatics Group as a critical function that provides guidance, policy and information governance oversight for all the IM&T plans.



This diagram reflects the proposed new structures. Terms of Reference have now been agreed through TME.

5. Annual Plan & Service Led Priorities – Go Digital

A review of IM&T and EPR was held earlier this year. One of the key recommendations was that an annual 2 year plan needed to be developed and agreed with divisions to provide an agreed and transparent programme for all IM&T developments. This would help set a common agenda and an understanding that additional work would require existing priorities to be revised or possibly additional resources agreed. A wide consultation process has been undertaken with workshops, presentations to the board and to clinical directors and this has led to the development of the first iteration of the annual plan. A summary of this is included in this paper.

During the consultation it became clear that in addition to the larger programmes there was a need for numerous smaller developments to be delivered to ensure that existing functionality was enhanced.

Out of this a recommendation is made that a float of 20% of the development resource is retained for local developments to be prioritised by the Clinical Leadership Group. These

could be from divisional needs, the medical director's office or other requirements. A paper on this has been prepared and will be referenced to provide details on the process.

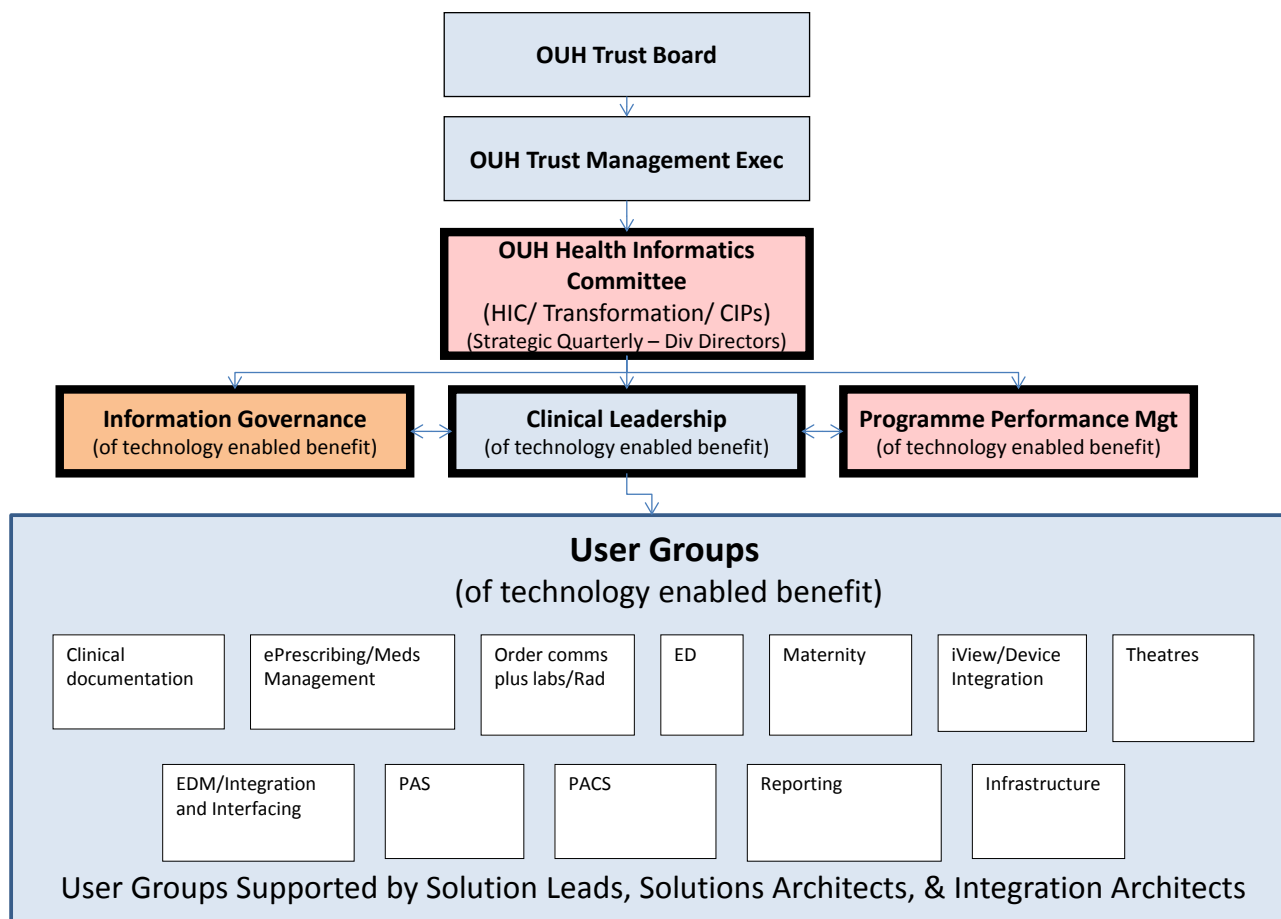
In addition, some services indicated that they would be prepared to invest in their own capacity (staff) to develop enhanced designs, which could then be delivered through the Cerner Application Managed Service (AMS) for EPR developments. It is recommended that such initiatives should be able to proceed without prioritisation through the Clinical Leadership Group, provided there is no conflict with the delivery of the wider programme.

All developments will need to be vetted and agreed in detail by the Design Authority Group to ensure consistency of design and data. The Design Authority Group (DAG) will not prioritise, but will be responsible for ensuring the integrity of the design and development of EPR and will have authority to mandate and control all aspects of the event set hierarchy, the design, and agreed standards for the structure of the electronic record. The DAG and wider EPR Programme will support Clinical Leadership and User Groups and members will attend relevant Clinical Leadership and User Group meetings. DAG membership will include all critical users (such as pharmacy). DAG will also be responsible for maintaining a list of planned changes in a form that is understandable for non-technical users. Changes will be presented as a transparent pipeline with committed effort and due dates reflecting priorities of clinical services

The DAG and Trust Subject Matter Experts (SME) will manage changes through the formal change process with AMS. The standard change control procedure will authorise and schedule changes through the Millennium Change Group, with all relevant internal and supplier teams (again to ensure a consistent delivery process). Weekly meetings are held to progress all changes to Millennium with a formal sign off each week for any changes going through into live service.

The structure below shows how the groups currently determining changes to the EPR systems would relate to each other under the proposed new governance. The precise details of all of the relevant user groups still requires more work so the table below is illustrative rather than a finalised structure, however the principle is that changes will need to go through formal processes to ensure that they are delivering against a whole Trust need, to a consistent standard and that the electronic record has consistent folders and structures to enable all information to be retrieved intuitively.

Weekly meeting of the partnership board with Cerner monitor progress of all live service issues, key priorities and the performance of the back office and AMS services. This group manages the contractual performance of our supplier and can escalate issues where needed. These structures are bedding in and will be reviewed after some months.

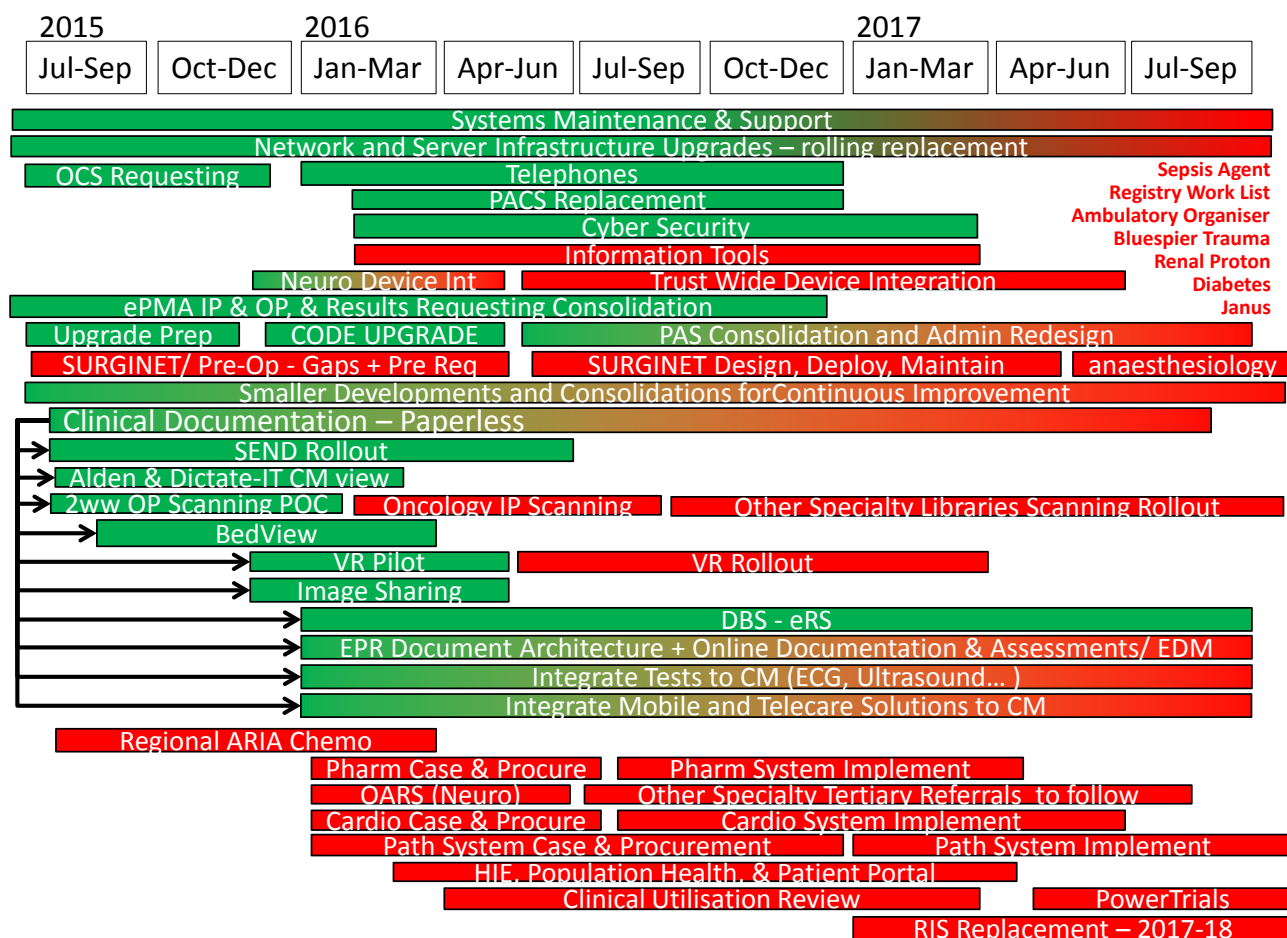


Terms of Reference for these groups have been agreed by TME and nominations for the groups have been requested through the Clinical Directors and plans are in place to set up the first meetings of the groups in the new calendar year.

6. Outline Plans

There has been a long process of consultation to develop outline plans for the next 12-24 months. The plans are summarised in the chart below with subsections summarising the main development areas.

When development areas have been agreed there is a need to ensure resource implications have been addressed (section 7) and co-ordinate agreement of any further deployments with Cerner so that best value is secured. Significant Cerner deployments require a deployment layer to co-ordinate delivery that can be combined across multiple projects.



KEY:

Green: Immediate and funded projects and developments
 Red: Projects and developments not currently funded and/ or requiring a business case
 Top to Bottom: Immediacy is highest from the top, to lowest at the bottom, of the plan

6.1 Code Upgrade (Dec 2015 – May 2016) (Core Project resourced)

This is planned for April 2015 in order to avoid the winter pressures and the Junior Doctors intake as well as to give sufficient time to consider all of the options that become available with the upgrade. The upgrade itself will improve the user interface and will fix numerous problems and issues particularly for prescribing. It will provide a basis for future enhancements.

6.2 SurgiNet/Transforming Theatres (from June 2016) - Requires a Business Case

There is an urgent need to replace the current theatre system and to support plans to transform theatre services. There is a real need for this to be led from within the services rather than from the EPR or transformation teams. A significant amount of work is required to update the reference files and design any new workflows. This will not start until after the code upgrade. Implementation will need to be planned after the code upgrade to take advantage of new functionality. However, dedicated surgical leadership is an essential pre-requisite and this is not yet in place. Vacancies for the Subject Matter Expert roles for this will need to be filled.

This will be progressed through a business case outlining the scope, benefits and the resources required to deliver SurgiNet.

6.3 PAS Consolidation & Improved Patient Pathways (May 2016 – Sept 2017) – Business Case and additional workup required

This would involve optimising the Millennium PAS application that was deployed in December 2011 to utilise real time workflows for scheduling and locating patients and embed them in the organisation with metrics and SOPs that are enforced. The proposition is to do these initially in two substantial clinical areas where there is willingness and enthusiasm to change. This will involve a fundamental review of the patient pathways, including the administrative and clinical workflows, with a view to reducing cost and improving the patient experience.

This would prove the concept and the reporting and benefit metrics to ensure the changes are fully optimised. Once this is proven the benefits can be further developed and more work can be done in other areas.

Within this project a pilot implementation of Kiosks probably in Cancer and the Eye Hospital will be undertaken; this is likely to start in May and will run for 3 months to establish the benefits of the technology, potential savings and issues with implementation.

Direct booking is nearing completion and is proving popular with both GPs and services.

Options for implementing the revised outpatient module of PAS which has new workflows designed to make the 18 week pathway much clearer and more intuitive. This is currently being piloted in Homerton and Newcastle. It is expected to be available for wider use from around September 2016. New bed board functionality is also being built to enable better handover and improved management of the workflows. The aim of the overall project will be to embed good practice across all parts of the system. The project will include looking fundamentally at the processes used to book patients into our system to reduce non value adding rework, improve the patient experience and reduce complaints. Issues around the separation of the NOC and OUH systems will also be revisited.

It is likely that we will need to implement EPR in the community hospitals to support the Integrated Care Alliance; this will be incorporated in the project scope.

The pilot project to deliver Kiosks will be resourced in the programme. More work is needed to scope this and to understand more about the new PAS modules. Once this is understood a business case will be prepared to detail the scope, the benefits and associated costs. Work on implementation across the community hospitals will be linked to plans for the Integrated Care Alliance.

6.4 Clinical Documentation and EDM Proof of Concept; Business Case required for full rollout

The need to consolidate and develop the clinical functionality that exists is obvious. Trusts will be required to meet the NHS paperless targets for 2018 and our objective of becoming

a paper light hospital. This project will have an absolute objective of establishing the preconditions for not having to use the paper notes in most routine care. This will be undertaken by first creating a critical mass of content in EPR through:

- a) Scanning or copying all referral letters into Millennium; this will commence with Cancer 2 week wait in January to be followed by a phased rollout across other services once the technology and the workflows are proven
- b) Indexing and delivering all outpatient outcome letters produced in Alden or Dictate-IT to be viewed in Millennium; 40,000 letters are being stored every month; the backlog of 800,000 Alden letters will be made available in January/February of 2016
- c) All old and current discharge summaries can be seen in Millennium
- d) Baselineing current documentation used in the paper records and providing more and more online documentation within EPR, taking advantage of what other Trusts have developed such as the Croydon care plans;
- e) Interfacing with diagnostic services that currently report within their own silo systems including Cardiac Diagnostics, Endoscopy and Ultrasound; this will reduce the need to look at the paper record;
- f) Preparing and undertaking day forward scanning for inpatients and outpatient activity in the Cancer Centre and the NOC (replacing paperclip) in preparation for a Trust-wide rollout
- g) Through the pilot develop either a devolved or centralised/outsourced scanning model in time for rollout

This project will also look to make the most of the existing solutions including wider use of message centre, power plans, power notes and other tools that are already in place. Once Oncology has been delivered in the summer of 2016 other services will follow, probably commencing with specialties who maintain their own paper record libraries. A business case will be developed to argue the case for fast or slow rollout based on the experience of the initial implementation in Oncology, as well as articulating the benefits and costs associated with the rollout.

6.5 Information Management

Delivery of appropriate information to support decision making by services is critical as is the ability to provide information back to clinical users. A new strategy for delivery is needed and potentially additional tools and capacity. In addition, information is going to be critical for each of the above projects. While much progress has been made with ORBIT reporting tool, there is still a feeling that the levels of service are insufficient to deliver what divisions need. A programme of work is being planned with divisional representation to improve and enhance the services with new business intelligence tools to support the delivery of self service information. Along with the competition on the Business Intelligence system to adopt, the information team has improved its responsiveness to services and is developing a new strategy for service delivery.

With the number of projects needing improved information the information team will need to have clear priorities and additional resources if they are not going to be a bottleneck. There are specific requirements for improved information for the PAS consolidation and

SurgiNet projects which will need to be planned. Further investment may be needed to support this. A business case is being developed to articulate the costs and benefits associated with the rollout.

6.6 Other EPR Projects

Voice Recognition Trial (Dec 15 – May 16): There are plans to trial Voice recognition from December. A short small trial with 3-4 consultants will then be enhanced by a trial with 30-50 users to establish the feasibility of replacing the dictation services with voice recognition as part of an invest to save initiative. The longer term aim (subject to a successful launch) will be to have a site license to use this technology to speed up clinical documentation for all clinical teams. This will be planned after the pilot finishes in May 2016. A business case will be developed to support the rollout.

BedView/ Clinical Utilisation Review (Dec 15 – Dec 16): The potential to use Bed Board type technology to better manage the throughput of patients is being explored. Royal Berkshire Hospitals have a very effective bed board system which we are in the process of implementing. The Clinical Utilisation Review software which is a CQUINN requires a separate licenced system is not being acquired but functionality similar to that could be implemented within EPR. Currently this is not being progressed.

Device Integration (NICU Dec 15-May 16): A small project to integrate medical devices in Neuro ICU will be started with the aim of delivering learning to provide the framework for Trust-wide integration of infusion pumps and other devices outside of the ICU setting which will commence later in 2016. A business case will be required for the full rollout

PowerTrials: There is significant demand to use PowerTrials to ensure the Trust recovers the full costs of trials activity; there is also some demand from some clinical services undertaking trials; while there is demand for this it is likely that this will be postponed unless additional resource can be found.

Health Information Exchange, Population Health and Patient Portal: There is considerable demand for this but there is a need to gain a consensus across the local health economy that the Cerner approach is the best across the county. The HIE in particular has enormous potential with its ability to do mutual medicines reconciliation and also to enable access to HIE direct from a GP desktop logged in to the EMIS system used by practices in Oxfordshire. This would have enormous benefit at relatively low cost but the political and IG issues will need to be tackled. OUH will be arguing for this to be a critical part of the Oxfordshire Digital Roadmap. If it is included the project would probably kick off in March 2016.

New functionality available following upgrade: There are three low cost enhancements available to implement from Cerner following the code upgrade that offer significant benefits and can be implemented without the support of an overall engagement layer – these are:

- St John's Sepsis Agent

- Dynamic Worklist
- Ambulatory Organiser (possibly for implementation alongside PAS optimisation)

6.7 Diagnostic (radiology) Image Sharing (Dec 2015 – May 2016)

An improved image sharing solution from Insignia has been purchased and will be implemented in January/February 2016. This will enable patients of interest to be flagged across the clinical networks and any imaging undertaken to be shared with other clinical teams looking after the patient. Reports will also be made available and the processes used to import non-Trust images into PACS will be enhanced. This will improve care, reduce duplication and make networks more efficient. The AHSN are very supportive of this initiative.

6.8 PACS Replacement (Feb 2016 – Dec 2016)

The current GE PACS system needs to be upgraded or replaced. A decision has been made to run a limited competition to choose either the GE upgrade or the PACS system used for our image sharing solution (Insignia). Recommendations on the system will be made by the end of December with a formal order being placed in January. The implementation of the system will then take place over the following 9-10 months.

6.9 SEND – Vital Signs recording system (- June 2016)

The delivery of the SEND solution has been run through the RAID committee. It has successfully delivered the application across the Churchill, NOC and Horton sites. Some PSO support is being used to deliver this across the John Radcliffe site over the next 7 months. The application has been hugely popular with clinical staff with overwhelming acceptance of it and there is a real desire to see this rolled out across all sites. There is an assumption that this will be prioritised but that needs confirmation. The equipment costs are estimated at £200k and a business case to support this is being developed. In addition, the longer term development and support model needs to be worked out as well as the governance approach on new developments.

6.10 Telephones 2015 - December 2016

The Trust needs to replace all of the analogue telephone exchanges by the end of 2017. This year the merger of the switchboards has been completed. All the phones at the Horton and the NOC have been replaced. More phones are being replaced at the JR and the Churchill. It is planned to do all of the phones on the Manor House switch at the JR and 50% of the Churchill analogue phones. Next year the remaining 1500 phones across the JR and Churchill will need to be replaced.

Investigatory work is being undertaken to establish the best way of improving mobile phone coverage within the hospital sites. It is likely that new “hot-spot” technology will be trialled to enable Trust mobile phones to use the wifi network seamlessly. This is part of a drive to improve communications and begin to establish a 21st century bleep strategy.

6.11 Cyber Security (Feb 2016 – March 2017)

Following the increasingly high profile breaches of security with companies like Talk-Talk there is going to be a major push to improve and test cyber security across the Trust. This will cover:

- a) Improvements to VPN with two factor authentication
- b) Increasing the strength of the network passwords
- c) Re-implementing the automated password re-set facilities alongside making the passwords stronger
- d) Eliminating shared network log-ons
- e) Improving the patching & security across the board on PCs, servers and network equipment

A cyber security task force has been established to follow this through with the aim of having a year-long effort to improve our security. This work has been requested by the Audit Committee who will receive regular reports on progress.

6.12 Departmental System Replacements

There are a range of legacy departmental systems that now need to be replaced. Each will go through a business case, procurement and implementation phase. For each specific solution the Cerner offering will be assessed with indicative costs and a decision will be made as to whether to compete the solution or to run with the existing Cerner contract. In the procurement process used to buy Cerner, options for extended scope were included and can be agreed through contract change control if required.

a) Pathology system replacement

(Business Case & Procurement 2016, Implementation 2017)

The current solutions for pathology need to be replaced. Specifically, the in-house developed LIMs solution for Biochemistry, Haematology and Immunology is supported by a small team who are close to retirement; the Histopathology system is supported by a single laboratory scientist who also undertakes clinical work. The requirement to replace with an integrated solution is going through the business planning process. There are significant advantages in having a solution integrated with EPR (one catalogue, less messaging, improved alerting to other clinicians), but previously the costs of the Cerner solution was prohibitively expensive.

b) Cardiology System Replacement

(Business Case and Procurement Jan-June 2016, Implementation over the subsequent 12 months)

Currently the Cardiology department records its diagnostic tests and produces its departmental returns through the Datacam/Solus systems. It also uses the McKesson imaging system for the Cath Lab and other imaging storage. The Datacam/Solus

solution has ceased to function safely, with incorrect data output for national reporting systems, and the company has rapidly lost market share with the Trust being the last major user of the package. It is clear that a new system is needed urgently. The business case is being developed and pre-tender investigations are underway to determine whether it is feasible to have a single integrated solution or to just replace the Datacam/Solus database component. Cerner options are also being looked at.

c) Pharmacy System Replacement

(Business case under way, Implementation June 2016 – April 2017)

The Bedford pharmacy system has served the Trust well but the solution is dependent on a single main developer and the other Trusts using this solution are moving elsewhere. A replacement system is needed and the business case for this is being worked up. It is unlikely that the Cerner option for pharmacy stock control will be adopted as it is geared to US practice.

d) Radiology Information System replacement

(Business case being developed – post PACS implementation c2017/18)

The current CRIS Radiology Information System has a number of key deficiencies as the solution requires all reference tables including current clinicians to be kept in step with EPR to have a safe radiology requesting process and to ensure that IRMER regulations are complied with. There is a desire within Radiology to implement the Cerner module (Radnet) to correct these deficiencies and to improve the mechanisms to alert other clinicians where there are concerns with a scan. Given the current PACS procurement it is unlikely that any project to implement this could commence until 2017. Having an integrated radiology solution has other benefits including complete transparency of scheduling a pathway.

6.13 Oxford Acute Referral System (OARS)

Implementation January 2016- June 2016, other specialties to follow

OARS has been developed with Neurosurgery being the first specialty to adopt it. It has been designed by Trust staff to document the advice and referral process for Tertiary referrals. It will be implemented for Reading Neurosurgery referrals in January and will then be rolled out for all the Neuro work. The system documents the advice given providing transparency across the service and if a referral leads to work in the OUH the referral will be messaged into EPR. Once Neurosurgery is complete the system will be rolled out to other tertiary services with a small charge for use by each service to fund development and support. This is well supported by the partner Trusts who have helped design the system.

6.14 Varian Upgrades & Cancer system developments

There are plans to upgrade the current regional Aria Chemotherapy system early in 2016. In addition, there are a major set of developments being led through the BRC on

enhancing the way Cancer data collection is undertaken. This includes enhancements to Histopathology, Infoflex, Janus and other reporting systems to support the OUH's participation in the 100,000 genome project. Improving our Cancer data quality is vital to ensure high quality data is associated with the genome sequencing. This will be a key test in relation to the Trust being selected to continue genetics testing.

6.15 Mobile and Telecare solutions

OUH has developed a number of initiatives to support point of care testing, mobile working and telecare solution. The Trust has probably the largest number of point of care testing devices linked to the labs in the country inkling in community hospital settings. We have played a leading role in developing gestational diabetes applicat6ions and in using technology like True Colours for undertaking patient questionnaires and self-monitoring. Over the next year we will establish with the BRC a platform for growth using True-Colours as a basis (or other technology if there are limitations). This will provide a basis for multiple new mobile applications linked to EPR.

6.16 Network and Server Infrastructure Upgrades

The Trust has a complex infrastructure which needs an increasing investment to keep equipment up to date. All of the West Wing switches are now 8 years old and the Cancer Centre equipment is 7 years old. The Trust needs to have a rolling replacement programme to ensure effective networking. This will be done with acuity and need in mind ensuring high throughput areas (imaging, ED, Cardiology) are prioritised. The Trust has 700 older wireless access points that only support slow legacy wireless standards; these need to be replaced with newer, faster solutions that can support fast mobile access to information or diagnostic services.

With new scanners and diagnostic equipment, the need for storage is increasing exponentially. The Trust is currently utilising over 2000Tb of storage managed by IM&T services including over 400Tb for imaging alone. This is increasing at c40-50% per annum. New services such as digital pathology and the potential to store theatre imaging will pose massive new storage requirements which will need further investment and management. In addition the records retention policies for imaging have never been clearly defined or agreed as services by default want to keep the images in perpetuity.

Alongside the growth in storage the Trust is generally adding 1-200 servers every year. The table below indicated current capacity and expected growth. The increasing use of virtual servers is marked and the switch from the expensive VMWare to the less expensive Microsoft Hyper V has been beneficial.

	2015	2016	2017
Hyper V farm	350	550	700
VMWare	100	50	50
Physical Servers	200	150	100
	650	750	850

There are major projects to keep all of this technology working and the increase in technology in active use has not been matched by numbers of support staff. There is a need to continue to invest in the overall IM&T infrastructure and it is estimated that an annual programme of c£2.3m is needed to ensure continued efficient running of services without taking account of new systems. The detail is in Appendix 1.

7. Human Resource

IM&T Staffing

Increasing workload and increasing dependence on IM&T means that the delivery teams will require more resource to deliver a better 24 hour service. There has been increasing demand for this and it cannot be delivered without additional resource. The number of calls handled by the service desk has increased from 51,000 in 2011 to a projected 140,000 this year. If the Trust takes a strong and urgent move towards going paperless following the trials, the savings arising from reducing medical records, clinic prep and other "Paper" based costs should provide the resource to transfer into this service. Essentially the ask will be for additional resource to be hypothecated until these benefits can be delivered.

In addition to the need for investment in additional people there is increasing pressure on grading and recruitment. A significant number of staff have been lost to the University as our teams are operational and frequently require on-call and are pressured to deliver a service to the Trust. With increasing investment in IT and Information management the pay progression and structures need to reflect the real pressures for IT staff in the area which will only increase with the big data institute and similar local developments. The detail of this will be followed through with either a further iteration of this paper or a separate paper going to HIC.

Divisional Stakeholder Resource

To make the clinical leadership group work and to embed clinical ownership it is important to establish the Divisional nursing, medical and operational informatics leads who must have protected time to devote to the role. These appointments need recurring revenue funding to ensure that the clinical leadership group works and can provide effective leadership for this agenda.

The cost of supporting Divisional Leaders, Champions and Super-users is estimated at £800K pa and is included under the EPR team below.

EPR Team

As EPR becomes a business as usual affair the need for a permanent team to drive progress towards a paperless future is essential. This will need recurrent revenue funding to support the rolling plans for this agenda.

2015-16 forecast to support the EPR and IM&T Annual Work Plan was £900k pay & non pay revenue plus £900k capital funding becoming £1.8m revenue for 42 core EPR Programme Staff. In addition £800k is needed for Divisional Leaders, Champions, and Super-users (making £2.6m pa total funding).

The divisional funding estimate of £800k is based on five divisions each requiring the following weekly for new developments and significant projects: 5 Consultant PA's, plus 2.5 Band 8b days, 2.5 Band 7, and 1 WTE Band 6 (from across Nursing, Midwifery, AHP, Scientific, and Pharmacy). This excludes 'back office' ongoing maintenance and support of systems and developments delivered, and would support the historical rate of progress to 2014-15

8. Recommendations

The Trust Board is asked to:

- i) Note the revised governance arrangements which will be worked up with relevant Terms of Reference for the next HIC
- ii) Approve the annual plan for 2016/17 as detailed in this paper.
- iii) Note the requirements for Business cases on a number of the core projects included in this paper
- iv) Note the requirement for additional resource to support this programme including £800k to provide additional clinical leadership and ownership from divisions. This will be received as part of the 2016/17 budget-setting process and the development of individual business cases.

Mr Andrew Stevens
Director of Planning & Information

January 2016

Appendix 1 - Capital Programme for IM&T Infrastructure

The following table details the level of recurring investment needed to ensure the core infrastructure is maintained. This level of investment does not include any investment for projects or systems.

Item	Numbers in the estate	Replacement cost	Average life of item before it needs replacing	Annual equivalent
PCs	8000	500	5	£800,000.00
Servers	250	5000	5	£250,000.00
Storage	5	50,000	5	£50,000.00
PACS Workstations	70	7000	5	£98,000.00
PACS storage				£50,000.00
Edge Switches	Approx. 1,050	£5k per switch	6 -7years	£750,000.00
Core switches	7 x Cisco 6509	£50-60k per switch	10years	£38,500.00
Access points	Approx. 3,000	£300-500 per AP (depending on model)	5-6 years	£150,000.00
Wisms	5x WISM2's / 3 x WLC for guest wifi	Each Wism2 = £50k, each WLC = £10k	7years	£35,714.29
Datacentre network	8 x Nexus 5K, 16 x nexus 2ks	Nexus 5K = £10k each, Nexus 2K = £3K each	7years	£11,428.57
Firewalls/Security	6 x Firewalls	£15k each	5-6 years	£15,000.00
VPN firewalls\appliances	18 x VPN devices	£5k each	6years	£15,000.00
Total				£2,263,642.86