

<b>To:</b>	<b>Trust Board</b>
<b>From:</b>	<b>Director of Strategy</b>
<b>Date:</b>	<b>3 November 2011</b>
<b>CQC regulation:</b>	As applicable

**Paper L**

<b>Title:</b>	<b>IM&amp;T Strategy</b>
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**Author/Responsible Director: John Clarke/Abigail Tierney**

**Purpose of the Report:**  
 The attached document form the basis for a discussion with the Trust Board around the size, scope and direction of the Trust's IM&T Strategy

**The Report is provided to the Board for:**

Decision	<input type="checkbox"/>	Discussion	<input type="checkbox"/>
Assurance	<input type="checkbox"/>	Endorsement	<input checked="" type="checkbox"/>

**Summary / Key Points:**

The aim of this strategy is to provide an excellent technical platform for clinicians to deliver world class care to their patients. The successful delivery of this strategy will break our dependence on paper and it being co-located with the patient. We will improve workflow around the organisation, decrease the administrative work of clinical teams and help provide a higher quality experience for staff and patients.

However to achieve our vision we are, as an organisation, facing a plethora of IM&T challenges; technical, financial, changing clinical need and a large potential programme of replacing obsolescent equipment and systems.

To face these challenges head on and provide systems and services that truly meet the need of our organisation we need to increase our IT skills and staffing as well as a providing major systems replacement programme.

To achieve this we propose to engage in the development of a new commercial venture with a significant commercial partner. This venture will bring access to skills and resources that we do not have, allow us to refresh our aging technology and provide a platform whilst allowing us to spread this costs through the life of the contract. This approach will immediately assist the organisation's transformation programme through some tactical deployments supported by the partners transformational expertise.

We also envisage the new venture to secure work from other organisations which there has been some tentative approaches already. This will provide income,

through a profit share or similar, back to UHL.

The partner will also utilise their worldwide expertise in assisting us to determine the best strategy for procuring and implementing an Electronic Patient Record system. This will effectively replace the majority of our current clinical systems and assist in the re-design of clinical workflow. This will also give us the opportunity to use the, more effectively collected and comprehensive, information for other purposes such as planning and research.

The strategy also highlights the need to implement some new systems and services before the Electronic Patient Record (EPR) as they will help change the organisation, create visible signs of progress and will deliver demonstrable organisational value assisting the transformation agenda.

**Recommendations:**

The Trust board to endorse this strategic approach.

**Previously considered at another corporate UHL Committee?**

The concepts and then details within this paper have been to many groups in the organisation for comment and debate.

This document has been through the Executive Team Meeting, and the newly formed Clinical IT Strategy groups whose comments have been included within this document.

**Strategic Risk Register**

This provides the IT Strategy for the organisation

**Performance KPIs year to date**

N/A

**Resource Implications  
(eg Financial, HR)**

The implementation of this strategy will have implications for Finance and HR but we will produce the business cases for these elements at the appropriate time.

**Assurance Implications**

N/A

**Patient and Public Involvement (PPI) Implications**

There will be PPI implications as we move through the strategy, as it will open up new ways of working/communicating with the organisation/clinicians for patients and the public. We will ensure that we produce a PPI engagement strategy within the whole communications and engagement work.

**Equality Impact**

The initial impact assessment, of the overall strategy, has highlighted the issue engagement of non-digitally enabled patients or patients with disabilities that will affect their ability to use digital services. As we are still at the conceptual stage

we will ensure that these concerns are taken into account within the final solutions.

We will produce further impact assessments with each significant change/business case that is presented for approval.

**Information exempt from Disclosure**

No

**Requirement for further review?**

We will ensure that there are regular updates to the board. We will be producing business cases to support the elements of the strategy and these, if appropriate, will come to the board for review.



Paper L

# **Information Management and Technology Strategy**

**2011-2016**

***Executive Overview***



## Introduction

This summary sets out an updated Trust Information Management and Technology strategy for the next 5 years. It directly relates to the Trust's overall 5 year business strategy and supports the two main business themes within the strategy - quality and productivity.

This IM&T Strategy has been developed at a time of considerable change, reform and uncertainty in the NHS. Allied to this there has been a societal change in the approach and use of information. This rise of social networking and the almost universal availability of mobile connectivity to information is changing how members of the public interact with their preferred services.

Today, information technology is indispensable in many hospital areas. Highly successful hospitals utilise their information systems to achieve integral support of their clinical and administrative processes. The object of this strategy is to optimise the quality of services provided, drive economic efficiency and ensure the support of high quality innovative clinical services.

In comparison with other sectors, hospitals and specifically UHL are still behind other sectors in their investment in and subsequent use and exploitation of IM&T. Across the UK there has been significant investment by healthcare organisations in the Electronic Patient Records as well as exploiting new technology, especially mobile/wireless technology, to improve the quality and effectiveness of their workforce.

In terms of investing in an Electronic Patient Record (EPR), it is clear, through experience and evaluated studies, there are significant advantages to our organisation in.

- Improved patient safety – e.g. a clear reduction in medication errors
- Clear correlation between EPR use and Improvement in quality measures
- Streamlining of patient care e.g. by having access to the right information there is a reduction in the utilisation of Laboratory Tests and Radiology Examinations
- Reduced cost of care – e.g. through improved clinical practice/workflow and also simple cost reductions such as not printing over a million sheets of paper a year.

The national strategy to delivering the EPR solutions, which had previously been to replace local systems with a nationally procured solution, has moved towards a more local approach which aims to move the focus to the needs of individuals and local communities. This has allowed us to decide on what is right for Leicester, as a large university Teaching hospital, and with no “regression to the mean” by having to use a blanket solution designed for all types of provider.

The national approach has moved towards an “Information Revolution”; the way information is accessed, collected, analysed and used by the NHS and adult social care services so that people are at the heart of health and adult social care services.

To deliver ‘caring at its best’ we must respond to all the challenges and opportunities above and transform how we view and use information technology. To achieve this we will need to

find innovative approaches to delivery and financing as we recognise this will be in a period of significant financial constraint.

## Overview of the Strategic Approach to IM&T

Covering a period of at least five years this strategy is carefully split into manageable components. Firstly focusing on ensuring we deliver what we need today, focusing on getting ready for tomorrow's challenges and delivering the components needed to propel this organisation forward.

The successful delivery of this strategy will change this organisation radically and there will be new opportunities, not foreseeable at this moment, which arise from this key change of direction.

- **Stabilisation**

We will put in place the necessary actions to ensure that we both understand and deliver to the needs of the organisation today. Creating and supporting opportunities that will help transform the organisation as well as ensuring it can meet its core function of treating patients:

- **Patients;** we will ensure that we deliver excellent IM&T services to enable clinicians to treat patients effectively. We will also work to enhance the patient experience; for example by facilitating access to the internet whilst within the hospital.
- **Process;** we will work with the organisation to embed recognised standards with regard to IM&T. We will improve the transparency of the IM&T function and regularly publish reports on our performance to help the organisation hold us to account for our delivery.
- **People;** we will work with staff and patients to understand their requirements of a modern dependable IM&T Service. We will work hard to ensure that these requirements can be met by the service provided by IM&T.
- **Partnerships;** we will work with all key stakeholders, internal and external, to ensure we plan and deliver a joined up service that puts the patient at the centre of information rather than the organisation. We will work with other institutions, of similar values, to share ideas and develop new opportunities for the organisation.
- **Performance;** we will ensure that we have the right processes, control and skills needed to deliver excellent services to the organisation and plan to build this capability to world class.
- **Profitability;** we will ensure that we have robust financial control and that we target resources where we can make most benefit to the organisation. We

will ensure that IM&T processes and deliverables support the delivery of excellent clinical quality and work to enhance processes and workflow.

- **Partnership/Managed Services**

To help us deliver the future model we recognise we don't have, and don't necessarily need all the time, the range of skills required to make this happen. To this end we intend to work with a partner to create a commercial partnership to both help us deliver this strategy and provide future income into the organisation:

- **Create:** we will create a new commercial partnership with a significant IT services and transformation organisation to help us deliver our core services more efficiently: to help us deliver new products to help the transformation of the organisation and to help us procure and deliver the Electronic patient Record (EPR) system.

We will use this new partnership to augment our capabilities and access new skills allowing us to increase the speed and the benefits from transformational projects. We will incentivise the delivery of transformational activities, through appropriate risk/reward mechanisms, to ensure that it is all parties interest for this to be successful.

- **Growth:** we will work with the newly created entity to provide further service to other organisation using a mix of our intellectual property and NHS specific skills and their experience of running world class IT services.

- **Clinical Value**

Key to this strategy is the delivery of clinical value to the organisation. In the short term this will be through tactical implementations of key products, such as supporting prescribing and medicines administration, through to the procurement and implementation of the EPR solution. This will be a transparent, clinically led, programme of work focusing on transforming how we record and progress patient care in the organisation; giving the most flexibility for clinicians to be innovative and safe in their pathways of care.

- **Records:** with the EPR in mind as the final destination for this strategy we will invest in steps along this road that will enable us to achieve this as fast and safe as possible. Three early steps, already identified as possible candidates due to their positive impact on patient care, evidence from other NHS organisations and the relative confidence of implementation are:
  - the deployment of the Electronic Prescribing and Medicines Administrations software (EPMA)
  - the development of a Clinical Portal
  - the development of an Electronic Document and Records Management System (EDRM)



Each of these will contribute positively to clinical process we have today but they will also start the work of transferring information away from a paper based system to an electronic based system prior to the EPR being in place.

- **Workflow:** we will focus on both the exploitation of our current systems and their eventual replacements. We will help to automate, where possible and safe, clinical administrative processes, thus freeing up people from both paper forms and their computerised data collection. We will aim to do this, especially as we improve our clinical systems, by collecting the majority of information from clinical workflow rather than from separate systems and processes.
- **Communication:** over the life of this strategy we will implement new communication methods to enable our workforce be more effective, agile. This will include the introduction of new mobile communications, improved collaboration tools as well as building on the existing video conferencing etc.

We will look to bring in, starting in 2012, an approach called “Unified Communications”. This is the integration of real-time communication services such as instant messaging (chat), presence information, telephony (including IP telephony), video conferencing, data sharing (including Interactive White Boards), call control and speech recognition with non-real-time communication services such as unified messaging (integrated voicemail, e-mail, SMS and fax). Unified Communications is not a single product, but a set of products that provides a consistent unified user interface and user experience across multiple devices and media types. This approach has been very successful at other hospitals in the UK and beyond and can be directly associated with helping to deliver the Trust’s vision.

- **Community Wide Access:** we will ensure that we build in appropriate mechanisms for sharing information with, and receiving information from, clinicians outside the hospital. We are already sharing a significant amount of systems and information, with GPs and community based staff, and we will ensure that we continue to strengthen this approach. This will be inherent in the final EPR design but we will also ensure that we take advantage of tactical solutions that are available now; such as the deployment of appropriate access to GP information systems in A&E

- **Organisational Value**

As well as being clinically relevant we need to deliver for the organisation as a whole. Part of this process will be an on-going communications strategy that will help us focus on delivering the right messages to the organisation, allow us to meet the expectations of our stakeholders and be seen as a value to the organisation not a cost.

- **Value:** through both the stabilisation process and the new commercial partner we will deliver safe, reliable systems and services to UHL. When there are issues to be resolved they will be resolved safely within the

expectations of the organisation. Were we are committed to delivering projects and services to the organisation every effort will be given to ensure that they are to time and budget. If there are any problems we will be proactive and communicate effectively to the appropriate people.

- **Income generation:** through the creation of the new commercial partner we will seek to offer services to other NHS and non NHS organisations. We will use this relationship to leverage better commercial deals for all users of the service as well as providing, as part of a profit sharing agreement, income back from the venture to UHL.

- **Modernisation of IT Services**

A key part of the strategy is modernising the equipment on which we will run our services. This will enable staff to be agile and adapt to new challenges. This will be underpinned by a skilled support service that can be relied on to deliver safely and reliably.

- **Equipment:** like any large organisation we have a range of equipment that goes from new to very old. There are a lot of hidden costs within the IM&T systems which would need to be covered over the next few years as systems and technology becomes obsolete. Moving to the EPR solution will mitigate some of this. We would also look to the new commercial partnership to help us, innovatively, deal with our capital requirements and provide a predictable cost model to allow us to plan our investments over the life of the arrangement.
- **Communications Services:** we are already looking to invest in our communications ability (to implement a unified communications system). This will be enhanced over the years. It will allow us to communicate more effectively (internally) and work collaboratively. We will also be able to utilise these new services to track high cost items as well as being able to direct communications to the most relevant person (supporting projects such as Hospital at Night).
- **Agility:** the days of fixed location for a computer are at an end. We will create a suite of tools that will work where ever the clinician is needed. They will be ergonomically suited to their tasks and provide a stable platform for us to exploit our investments.
- **IM&T Staff:** the aspiration to deliver a “world class service” for this organisation needs to be backed up by investment in both the quality and productivity of IM&T staff. We will work with our commercial partner to enshrine the development of staff with the partnership. We will ensure that they have the right tools and training to carry out their tasks in the most effective manner.

## **Delivery Strategy**

To deliver this strategy it will need a strong coherent implementation plan. There is a large amount of complex commercial decisions to be made and we will also need to commit to change our current paper dominated processes, and embrace electronic information flows and automation.

### **1. Turnaround (Short Term now – 2013/14)**

- a. Ensure that IM&T is fit for purpose and is meeting the core requirements of its clients.
  - i. Review organisation wide IM&T structure
  - ii. Review current practices and procedures for fit with national /international standard practice
  - iii. Ensure we have safe and resilient infrastructure in place to support the users at UHL
  - iv. Link closer with client groups to ensure we are delivering what is required
  - v. Review governance to ensure organisational ownership of IM&T issues/opportunities
  - vi. Ensure we can meet the needs of new ventures/partnerships such as the joint pathology venture with Nottingham
- b. Review current systems suitability e.g. PACS and propose new solutions if needed.
- c. Enter into a “commercial arrangement” with a significant third party for the on-going deliver of IM&T functions and projects.
- d. Work with new partner to Procure and deliver new systems such as Electronic Document and Record Management (EDRM), Enterprise Resource Planning (ERP), clinical portal etc...
- e. Procure an Electronic Patient Record (EPR) system.
- f. Work with commercial partner to develop the offering to other Trusts/organisations.

### **2. Maximise (Medium Term 2014 – 2016)**

- a. Define benefits realisation strategy for EPR solution.

- b. Implement EPR system. <sup>1</sup>
- c. Start reducing existing systems as they are replaced by the EPR solution.
- d. Continue to work with commercial partner to provide improved services to UHL.
- e. To work with the commercial partner to bring in other organisation into the service, this will provide a potential income source to UHL.
- f. To work with the commercial partner to exploit the intellectual property developed through the new implementations, to other Trusts and organisations. This will be also be a potential income source to UHL.

### **3. Integrate (Long Term 2016+)**

- a. To further maximise our benefits from the deployed solutions
  - i. Internally - maximising both the quality and cash benefits from the solutions by ensuring our workflow and patient care is maximised by the new systems rather than compromised.
  - ii. Externally – working with the partner to develop a suite of offerings to other trusts and organisations. This will be based on our newly developed intellectual property, and will enable a portion of the profit of this venture to be returned to UHL.
- b. To continue to develop and replace systems as required e.g. Picture Archiving and Communication Systems (PACS) will be end of life in 2016 and will need to be replaced.
- c. To continue to strive to be the best in what we do and enhance the reputation and brand of University Hospitals of Leicester.

## **Change and Benefit Realisation Strategy**

For each delivery element of the IM&T Strategy through to 2016 we will identify leaders from the affected areas to take on the responsibility for managing the change processes.

The effect of bringing in new IT and its associated change in processes will have a disruptive effect. We will reduce this to a minimum by having world class planning and delivery support

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<sup>1</sup> See appendix A for more information on the type and scope of an EPR that would be applicable for this organisation

from IM&T and its partner. We will also work with the clinical and managerial areas well in advance to agree, plan and maximise the benefits that can be realistically achieved.

The NHS has never been totally successful in achieving benefits from major IM&T programmes. Where it is identified as a quality improvement the clinical and management teams for the benefitting areas will be tasked with ensuring that this is achieved. Where it is an agreed financial benefit this will be removed from the baseline budget of the benefitting area.

## Delivering Organisational Value

To be of benefit to this organisation we will need to deliver value to stakeholders, both internally and externally. The scope of “e” enabled service will extend well past our walls, into GP surgeries, other hospitals, and of course patient’s homes and mobiles.

Below is a short collection of narratives detailing some of the “value” that the successful implementation of this strategy will deliver.

### **Clinical Value**

The successful implementation of this strategy will deliver a truly world class infrastructure and services to support the clinical activities of the organisation. The focus will be delivering clear, demonstrable, clinical benefits as soon as possible and allowing a level of flexibility in the use and development of the clinical pathways

- **Core clinical value:** by building upon a reliable infrastructure and support services *we will work with the wider clinical community* delivering an easy to use collection of clinically focused resources and tools focused on *supporting patient care* and helping clinicians deliver their *quality outcomes*.
- **Supporting research and education:** the implementation of this strategy will ensure that we will support the transformation of this organisation into a *world class centre for research and education*. We will deliver systems, processes and data analysis that both support research i.e. automatic identification and management of patients for trial recruitment and participation and the *sharing of best practice* and *innovation* internal and externally.
- **Supporting clinical transformation:** this strategy will deliver opportunities to develop *new ways of working*, new processes focused around *improved safety*. With these processes developed around clinical care which will create/need *less paper work and bureaucracy*. The modern infrastructure, underpinning the clinical activity, will enable us to look at both how and where we work. It will allow *working remotely*, *working together*, becoming *location agnostic* utilising *modern clinical devices and tools* designed for this new environment.

## **Patient Value**

A key component in designing the future systems and infrastructure is to enable UHL to maximise the potential from the ever increasing digitisation of everyday life of its patients and their carers. This strategy will allow us to focus on both how we interact with patients and deliver new ways for patients to work with clinicians to deliver their care together

- **Informed patients:** the successful implementation of the EPR solution will provide patients with an electronic method of *reviewing their care*, the ability for *sharing information* with their general practitioner as well as a much improved input into both the *personalisation* and *scheduling* of their care.
- **Co-production of healthcare:** moving forward our organisation will have to develop methods of facilitating others to contribute to activities for which we were singularly responsible. The tools and techniques delivered by this strategy will allow patients and clinicians to *work together* to produce *new models of care delivery* which are *more efficient and mutually beneficial*.
- **Supporting choice and control:** our current portfolio of systems does not allow us to easily respond to this challenge. This strategy will allow the patient to have *better communications* with clinicians and support services within UHL and provide *more integration with other providers* to provide a more *seamless care pathway*. The *enhanced security* and control will allow patients to have *greater confidence* in their data and allow them greater control on who has access to it.
- **New ways of interacting with our services:** the aim of this strategy is to deliver a multi-channel approach to *improve communication from and to patients* and carers. The development of social media over the last five years has outstripped its' original intentions. The new technological and information platforms envisaged in the strategy will allow us to leverage the current digital space and allows us to *flexibly respond* to *new developments and demands* from the public of Leicester.

## **Delivering world class Information Technology**

Alone it is highly unlikely that an organisation of our size and capability would be able to deliver truly world class services and technologies. The investment costs alone would be prohibitive for a single organisation. Through this strategy we are looking for a commercial partner to allow us to leverage their varied, worldwide, resources for the time that they would be needed here. This will allow us to accelerate our pace of “catch up” to put us in a position to truly exploit the infrastructure and services we have.

- **Resourcing:** Through the pursuit of an internationally recognised “Strategic Partner” to work with us to create a *mutually beneficial commercial venture*, which at its heart will *deliver world class service* to this organisation. This will give us access to resources and service we would not be able to afford or manage on our own.
- **Infrastructure:** To deliver the benefits of becoming an information led organisation we require *enterprise class infrastructure* capable of *supporting this organisation 24x7*. To deliver this we will be working with our commercial partner; looking at *innovative solutions* and funding opportunities to make this a reality.
- **Improve Communications:** As a major University Hospital, spread over multiple sites, we need an *agile workforce* with the capabilities of working flexibly across our estate. We need to support them through an approach to communications that is not just based on telephony but leverages our whole IT estate to bring in *mobility* and presence to give us the ability to communicate with the *right person at the right time*.
- **Better Intelligence:** The increase in both the quality of the systems, the level of *data collected routinely as part of clinical practice* and the breadth of the clinical services covered will ensure we have *high quality, accurate* and *timely information* to base decisions on. This strategy will help us to understand and better manage our business.
- **Better Value Services:** To deliver this level of service on our own will be cost prohibitive. The successful implementation of this strategy will enable us to work with our partners to deliver the required services in a *timely* and *cost efficient* manner with the *risks being shared* across the partnership (which will include both public and private input).

### **Wider Value**

- **Staff Development:** To deliver *world class services* we require *world class staff*. The roles for staff within the current arrangements have been limited and their development has been constrained by the availability of funding. We will be looking for our partner organisations to help us *develop staff* and broaden their experience through the *new opportunities and services* that will be created.
- **Corporate Social Responsibility:** When choosing the right partners to work with us over the next few years we will ensure that their *goals and values are a match to ours*. We would require a formal sign up to delivering our values and we would

look to extend this into giving *opportunities to develop employment opportunities for disadvantage people* through innovative use of apprenticeships, internships, partnership with development bodies etc.

- **Carbon Footprint:** the joint working off all staff at UHL through this strategy will allow us to significantly *reduce our carbon footprint*. Through consolidation of equipment and increased virtualisation we will *reduce our consumption of raw materials and electricity* as well as increasing the usable length of time for equipment. The move to electronic records away from paper will mean a *reduction of millions pieces of paper* per year and *save a forest of trees*.

## Conclusion

This strategy is aimed at supporting the values and goals of the organisation. It will be a major contributor to delivering the “6 Ps” that underpin our journey from “Good to Great”.

At the heart of this strategy is a key modernisation theme; moving from a paper based organisation to one based on electronic communications. This will create universally available information and streamline clinical workflow enabling patient care to be liberated from where the physical paper notes are. This will facilitate the ability of clinicians to work together on a problem even if they are separated by our geography.

Where there have been significant investment of this type there has also been a rise in the patients’ participation of their care; access to their information, ability to make/change appointments, to add information to their record etc.

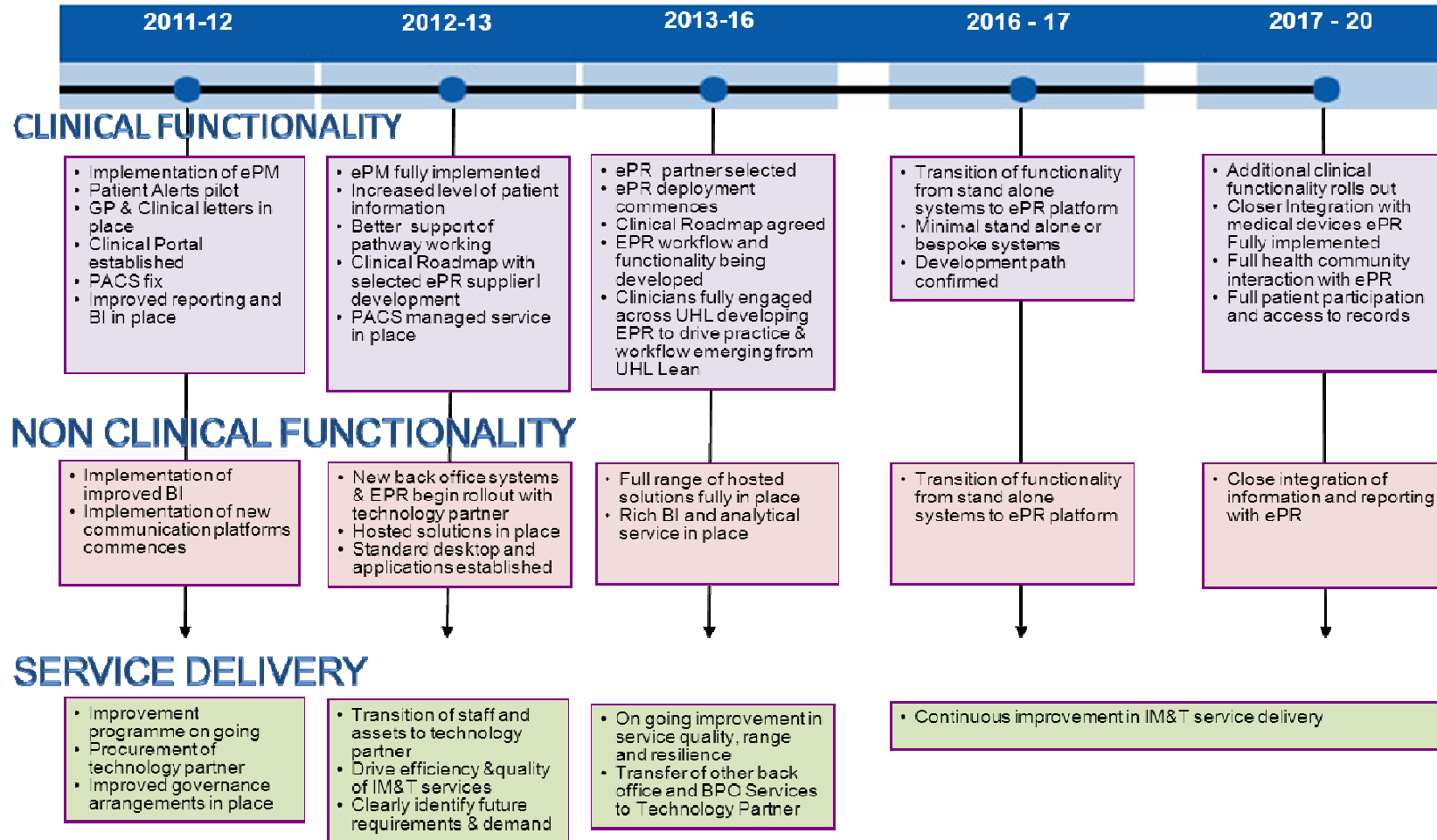
Evidence on successful implementations shows there will be a clear demonstrable return on the investment required as well as an increase in quality and patient/clinician experience.

This work is not to be underestimated but it needs to happen as soon as it is possible to support the transformation of the organisation. We will be undertaking this within an organisation that will be changing to meet its challenges and we will be able to help by making available key tools to transform how we work and treat patients.

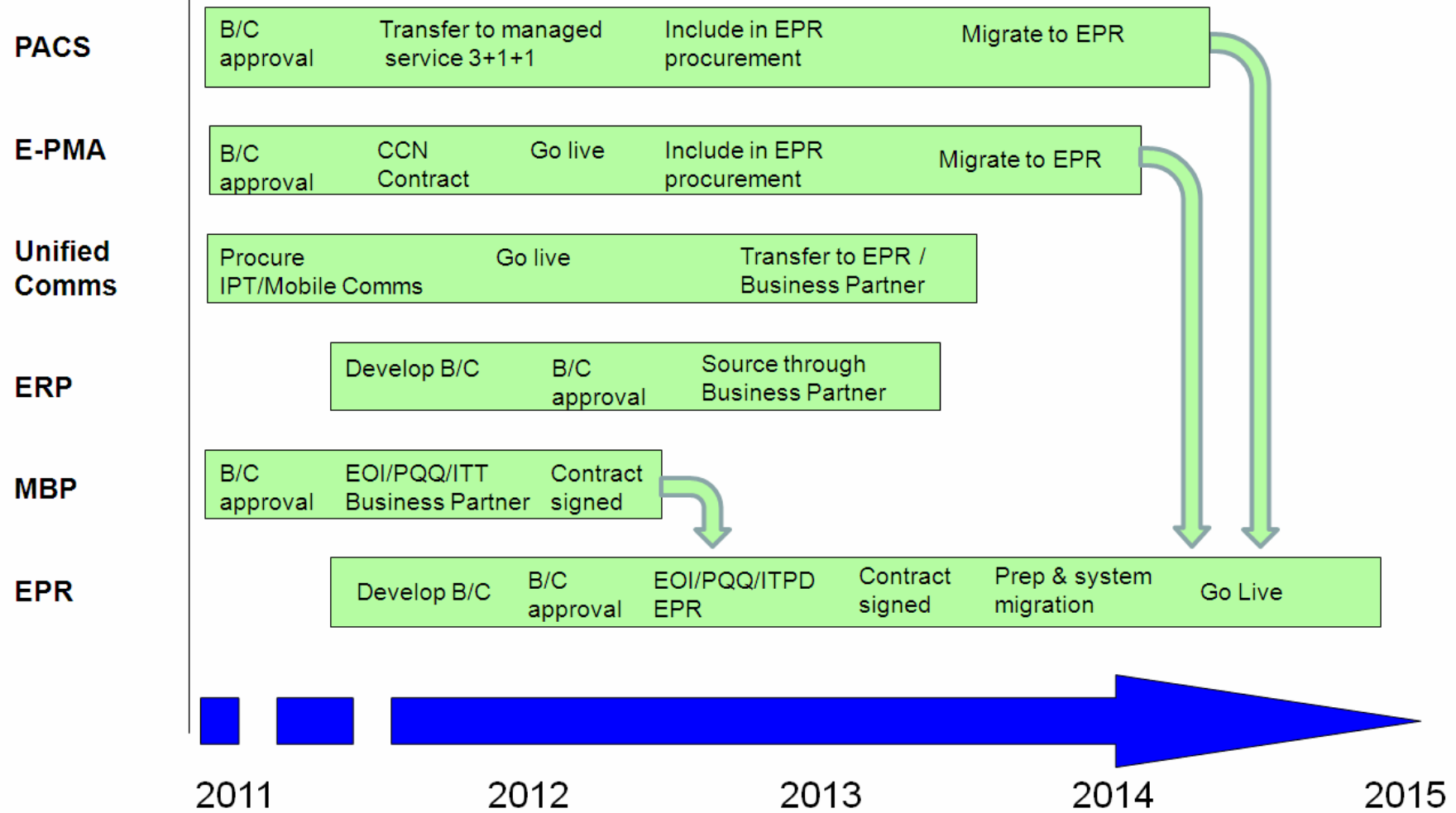
It will be a difficult journey and it will require a large amount of process and culture change. However we will be engaging with partners, who have been successful in similar organisations, to help us deliver this programme of work.



# High Level Timeline of Activities



## Enterprise Wide IT Solutions – Procurement Timeline



High level initial activities. More Activities will be added when they have been agreed

# Outline Journey



- Customer Culture
- Consolidation (all IM&T)
  - Systems
  - Services
  - People

- Create Relationship
- Support Transformation
- Tactical/Strategic Deployments
- Create growth → income stream back to UHL
- Support procurement of EPR

- Procure
- Implement
- Realise benefits
  - Process
  - People
  - Technology



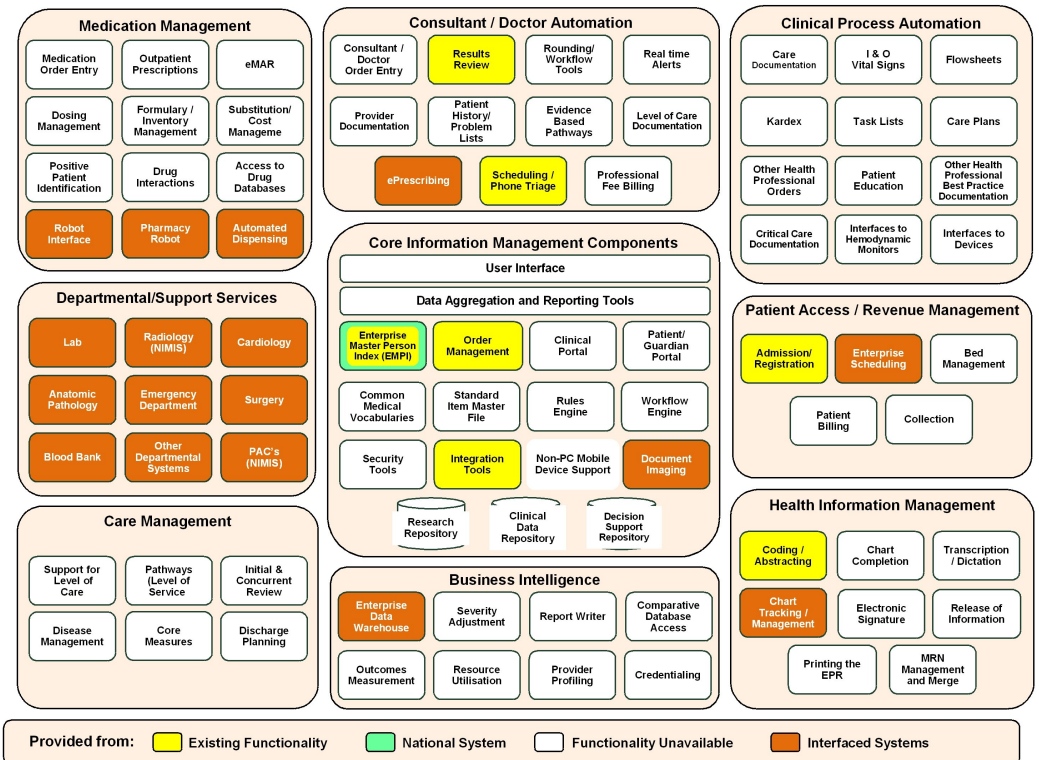
# Appendix A EPR: Best of Breed vs. Integrated solution

Historically UHL divisions have been largely free to evaluate and implement whatever application they feel best meets their immediate needs (a best of breed approach). As a result, UHL now has over 100 disparate supported systems and several hundred unsupported ones. There is no map of information assets across or unified flow of data through these systems and multiple entry points occur for identical pieces of information. This causes duplicates and requires reconciliation. This, in turn, exposes UHL, our clinicians and patients to significant clinical, information governance and commercial/business risk.

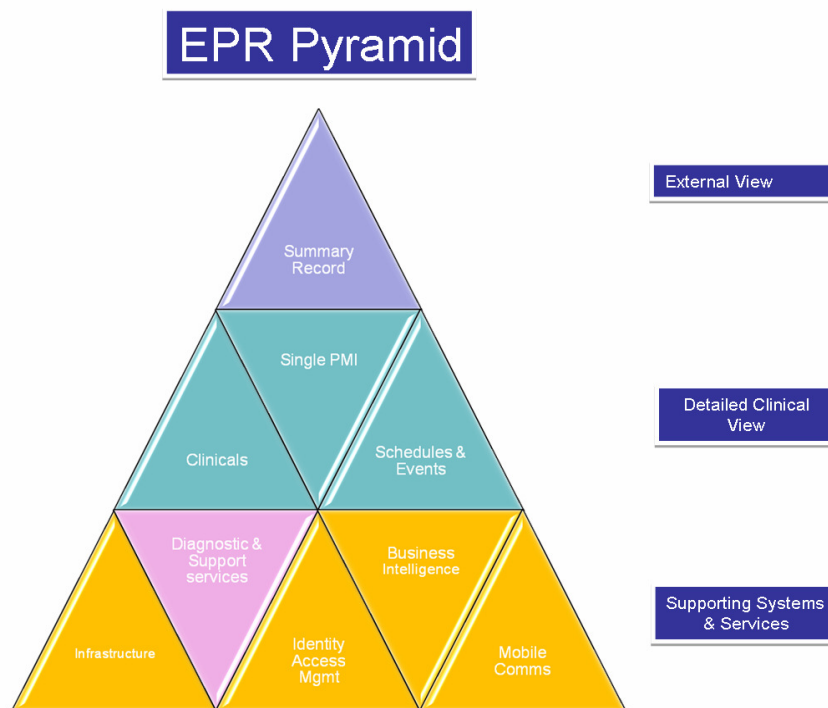
Integrating multiple disparate systems in such a complex web of connectivity can be tricky, error prone and lead to unstable applications and delays or errors that could affect patient safety. This complexity will only get worse as more and more systems are integrated using one off custom

integration solutions. In addition, most applications installed at UHL have one or more maintenance upgrades every year. Each of these need to go through a change control process and can result in numerous upgrades every month. Each upgrade takes considerable resource and has the potential to impact integration, service delivery and clinical safety. The approach currently used by the Trust is only as good as the underlying systems. UHL currently has a 30 year old Clinicom PAS system. This causes significant difficulties and makes it difficult to update information within the PAS from clinical systems, such as maternity or order communications. This has an impact on the capability of the overall Electronic Patient Record system.

This position is no longer sustainable. To continue as we currently are, with a range of systems that are reaching the end of their useful life and rely on old and often unsupported technologies is simply not a realistic option. We need a clinical information solution for the future where the clinician has one view of the patient, where clinicians can work closely together within UHL and across the health economy, and where patients can take a more active and informed role in determining their care and outcomes.



Consequently, a major part of our IM&T strategy over the next 5 years is to simplify and consolidate our IT landscape and architecture, moving where possible to a single integrated electronic patient record (EPR), with the minimum of specialist stand-alone systems linked to it.



To support this model, fundamental infrastructure and systems must be in place to ensure information can be delivered reliably to the right place at the right time in a form that can be easily accessed. These requirements can be viewed as a pyramid of information needs, supported by the right infrastructure and processes (as illustrated).

The requirement is for a long term clinical solution that brings

together the majority of clinical systems and information. The solution will need to promote and support improved care, deliver integration across UHL and health and social care partners, and deliver technology enabled service improvements & efficiencies.

Such a programme will require visible and active leadership from across UHL and at the most senior levels. The design and implementation of the system will be a challenging journey in financial, resource and cultural terms. It will place a heavy load on all staff who are engaged with the programme. However, as an organisation we have no choice if we wish to have an organisation and clinical services that are fit for the future.

As well as moving to an EPR over the 5 years of this strategy, there are some systems and applications that will require earlier replacement or implementation, for example PACS and 'heartlab'. There are other systems that need to be implemented to address key clinical risks and deliver significant efficiencies, for example e-prescribing. We will also seek to implement additional functionality as outlined later in this paper. Our focus will be on exploitation and early adoption to enable business and clinical benefit to be realised prior to transition to a new clinical platform.

There are two main options available to us to achieve a single integrated view of a patient record:

- 1) *Continue with our current integrated approach*

A range of niche systems are implemented and integrated through an integration engine. This is a continuation of our current approach and requires significant ongoing investment in systems integration and development to ensure the diverse systems can continue to interoperate. The transition of technical implementation to the new external service arrangements should address some of the issues experienced through NPfIT and the ITS programme.

This approach would enable us to roll out functionality more quickly and select systems based on their best clinical fit. It may also be a lower cost model to implement, but would almost certainly require significant capital funding. Our experience is that to manage such a hybrid solution is both difficult and costly, often outweighing the initial capital savings of implementation. This is sometimes referred to as the “Forth Bridge” approach as the maintenance task is unrelenting. We would also require a technology partner who would take on this systems integration role and be the prime contractor.

The lifetime of such a solution would require on-going investment in new best of breed solutions and place a heavy reliance on the ability and capability of sometimes relatively small systems providers to invest in and sustain innovation and systems development. There is also the on-going commercial risk of a range of SME suppliers being involved where we can anticipate less security in terms of their ability to stay in business and manage commercial risk. Alternatively we could look to a technology partner to manage this on our behalf but this is anticipated to attract a significant level of risk loading on the fees charged to UHL.

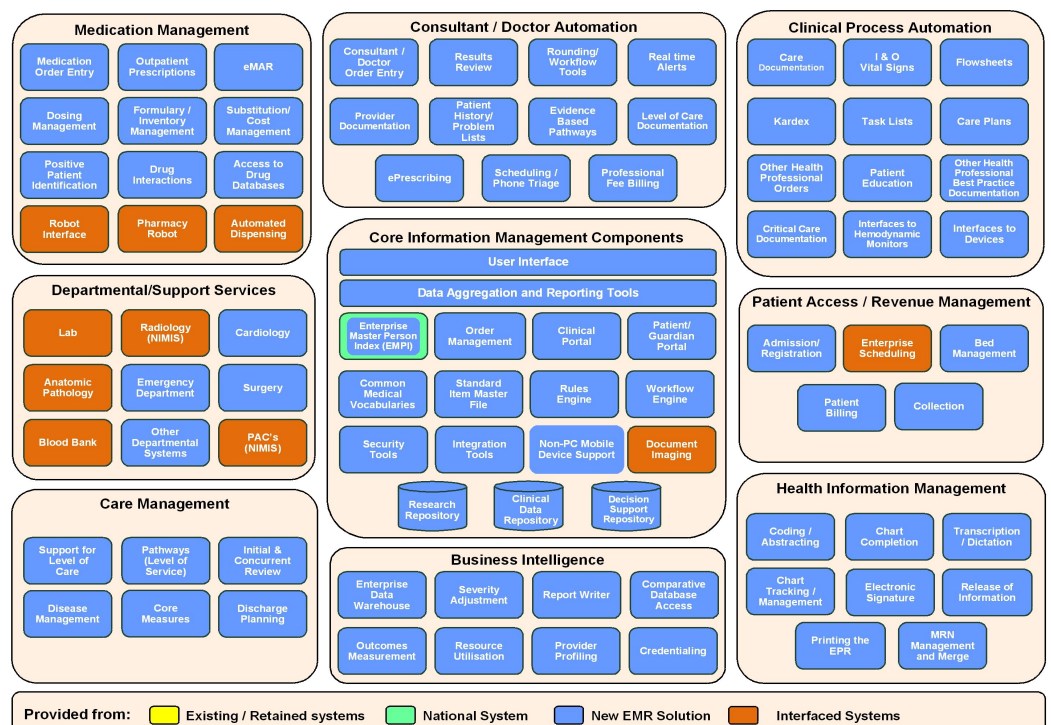
Gartner and other industry commentators strongly recommend that organisations should not take this hybrid approach, because although it delivers short term financial savings it does not deliver the level of sustained clinical improvement and is more expensive in the longer term.

## 2) Implement an Enterprise Wide Solution

Identify a single primary clinical solution that will deliver the majority of our clinical requirements.

This has the benefits of a fully integrated solution, with integrated workflow, a common user interface and reporting. This option would have a longer implementation timescale with new layers of functionality being rolled out over time.

On the plus side, this approach would be provided by a



single solution supplier with an on-going commitment and investment in R&D, system development and innovation. This ensures we have a system fit for purpose for the next ten years or more. It would also bring the benefit of a technology partner who has the commercial gravitas and substance to amortise capital investment through a revenue based pricing model, based on functionality releases. In other words, we only pay for functionality as it becomes available to us. This helps to address the anticipated reduction in availability of future capital funding.

Such a solution would also drive consistent best practice workflow and clinical decision making and practice. The disadvantages of this approach include typically higher costs over time. There will also be restrictions on bespoke development to meet any specific UHL needs. To be successful, an Enterprise Wide approach will involve a highly complex and lengthy period of clinical and business change as the layers of functionality are implemented. We would also be less able to accommodate divisional demands for bespoke functionality.

Industry commentators, including Gartner in their recent Magic Quadrant report, indicate that complex healthcare organisations are electing to move forward with a major EPR provider system (as described here).

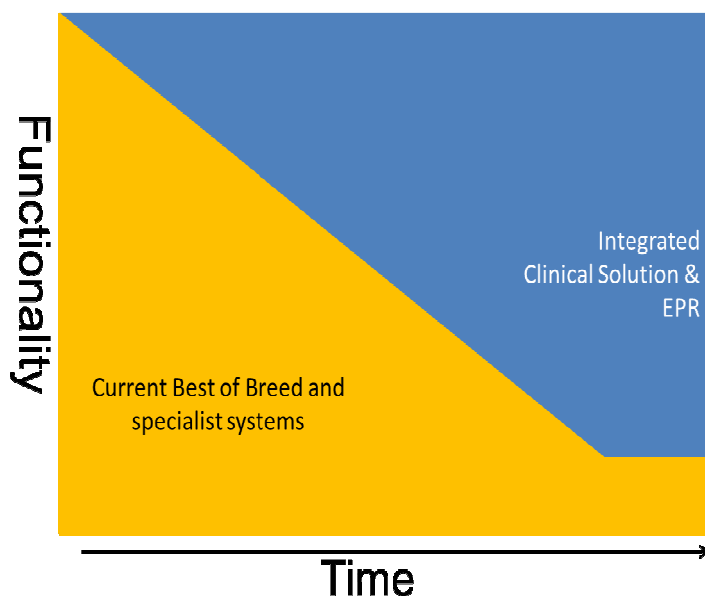
This is the option that provides maximum security of delivery and on-going solution development and innovation through the next 10-15 years. This was essentially the objective of NPfIT, and is the strategic choice of most major healthcare providers in the US and Europe.

Option 2 - a single enterprise wide EPR, would be managed through our technology partner, the EPR contract however being held by UHL . This could also include hosting our systems in a secure commercial data centre with the fullest business continuity and disaster recovery facilities.

An enterprise wide EPR offers we believe the most robust solution to meet our needs into the future. It also enables us to fund our investment on a revenue basis as functionality is released, and thus avoid major on-going capital investment.

Once such a solution is fully deployed it is anticipated that it would be our primary clinical platform for the next 10 – 15 years, and would enable us to drive workflow and pathway redesign across departments and the wider healthcare community.

Our strategy, over the next 2-4 years, would be to bring together our existing solutions and



thereby reduce the number of unsupported systems. We will also implement ePrescribing, a clinical portal, other clinical improvements and better business intelligence. In other words, our IT development will not stand still waiting for the enterprise solution.

We would then transition to a single integrated clinical solution over the medium and longer term, procured

as part of larger technology partner procurement. This would also look to secure PACS, pathology and non-clinical functionality as well.

Bringing together a larger package of services and solutions makes the deal size larger and should also enable us to negotiate a more commercially attractive contract.

In terms of the clinical solution supplier, it is anticipated that for the complexity of an organisation and size of implementation that UHL demands, our only credible partners would be leading US or European players. These suppliers, we believe, would look to partner with a major systems integrator. Early discussions indicate that we would be an attractive partner for these organisations and that there would be sufficient competition to ensure a competitive deal for UHL.

This approach enables us to realise early benefits for our clinicians and GP communities, meet some pressing functionality gaps such as ePrescribing, whilst reducing our outlay on replacing existing systems, such as the PAS.

We would propose transitioning from our current systems to the new integrated solution at a pace that fits with our clinical & organisational requirements and capacity. Under this model, we would only retain those specialist systems that cannot be delivered effectively through an EPR. Typically implementation would take some 3 – 4 years from contract signing to being fully implemented, potentially going live in April 2016.

We would expect the technology and systems partners to provide resourcing and programme management for the project, and also to provide business and clinical change services to support our clinicians in developing the solution for UHL.



## Appendix B: Programme Governance

The programme will be governed by an programme Board, reporting through the Executive Team and the Trust Board . This will be supported by a clinically focused IT strategy group who will be setting direction and priorities for the development/delivery of the component parts of the strategy. Each of the significant projects will have its own board to reflect the individual nature of the project. We will ensure, through the unified governance of the programme board, that we can control these collectively and relate them to the other organisational transformational programmes that are underway.

### Programme Governance

