Barking and Dagenham, Havering and Redbridge Local Digital Roadmap

2016/17 – 2020/21

Contents

1. Executive Summary

Barking and Dagenham, Havering and Redbridge organisations, including the Clinical Commissioning Groups, local London Boroughs, North East London NHS Trust and Barking, Havering and Redbridge University NHS Trust have historically made headway in developing their organisational systems in relative isolation of others in the region. Whilst progress has been made, for example real-time GP records with read/write access, interoperable care planning tool, organisational health integration environments established and channel shift and amalgamation of services into user friendly portals in Local Authorities, as a collective group of health and care organisations we recognise we have not worked closely together and are therefore not exploiting the sheer potential of interoperation across health and care.

In order to achieve better outcomes for service users, better connectivity of health and care services and a far better and more modern working environment for our care professionals we recognise this must change. We now need to work together, sharing our resources and skills and delivering against a common and agreed portfolio of changes which move the maturity of our organisations around digital services significantly forward.

To achieve this we have engaged organisations and individuals across our region, from care professionals to service users. We have agreed to a common vision which centres on our citizens, services users and patients and recognises the importance of equipping our front line staff “bringing citizens, health and care professionals and commissioners into the 21st century with exceptional digital experiences wherever they interact”. We reinforce this with a set of ten key principles under which change will happen, for instance, ensuring that we build on our existing successes and investments (including those being made within the London Digital Programme and at national level), keep data safe, and operate systematically and to consistent standards.

A set of some 150 plus ‘user stories’ were gathered, analysed and prioritised. These were developed to work alongside the Sustainability and Transformation Programme (STP) and have coalesced into seven themes under which each will support organisations to enhance their own plans and to become better connected. The themes are Planned and Urgent Care, Co-ordinated Care and Care Planning, Channel shift, Population Health Management, Self-care and Personalisation, Paperless and Efficient Infrastructure.

We are also alive to the complexity of the task ahead of us. Implementation will take c. five years and be formulated into a programme where, at its core will reside new technology and systems to form an interoperable layer between the key organisations, and more broadly the London region and nationally. This core system technology will include an interoperability broker, master directories and indexes, common care record, citizen portal and care planning systems. It will then be built on through an agile development, using a team of technical specialists and business change agents, which will prioritise key functionality and capabilities and deliver this in an agile development fashion, exploiting new advances in health technology as they become available (e.g. to accelerate delivery cost and reduce cost).

An estimate of the total cost of the five year programme is £42.24M which is a mix of both capital and revenue funding. Further to this it is estimated that c. £4.32M of reoccurring revenue may be required to fund new technology (e.g. licenses), maintenance (e.g. of systems and of training) and an important new set of skills to continually work to exploit the new environment, build new capabilities and respond to changes (e.g. regulation). These new skills may be an amalgamation of existing and new resources and will be defined during implementation.

1. Local Context

The Barking and Dagenham, Havering and Redbridge (BHR) health and care economy covers three boroughs and serves over 750,000 people. With pockets of high deprivation and some of the very youngest, oldest and most transient populations in London, the system is faced with significant challenges in managing the health of

the population. Along with national challenges, such as an aging primary care workforce and difficulties recruiting and retaining staff, key system challenges across BHR include:

- High rates of admissions for acute and chronic conditions
- Fragmented health and care commissioning system
- Increasing spend across urgent care and planned care
- Difficulties generating robust data and intelligence on interventions and outcomes across whole pathways of care

The three local boroughs vary greatly in their demographic make-up, and therefore face their own challenges.

Redbridge

- One of the highest **rates of stillbirths** in London and England
- **Health and social care needs** arising from temporary accommodation and large family size and effects of welfare reform
- An upward trend of **excess winter deaths** in recent years
- High prevalence of **diabetes**
- Poor one year **cancer survival**
- **Communicable diseases**: a relatively high prevalence of HIV and TB and travel-associated infections.

Havering

- 110,000 adults registered with a local GP (and with a recorded BMI) are **overweight or obese** and Public Health England's estimated prevalence of adult obesity is 63.3%, significantly higher than the London average of 57.3%
- **Rates of children classified as overweight or obese** (25.8%) is significantly higher than for London (23.1%) and England (22.5%).
- **Male life expectancy** at 65 (18.8 years) is lower than the London average (19.1 years)
- **Largest net inflow of children** across London boroughs (4,606) between 2009-14
- Estimated to have one of the highest rates of **serious physical disabilities** among London boroughs.
- One of the largest proportions of the population in the country with **dementia**

Barking and Dagenham

- **Rapid population increase**: now 198,294; forecast to increase by 25% to 250,500 by 2031
- **Life expectancy** among the worse in London
- **Child poverty** 30.2% compared to London value of 23.5%
- **Highest proportion of smokers** in London: 23.1% compared to 17.3% in London, resulting in the highest number of chronic obstructive pulmonary disease (COPD) unplanned admissions in London and twice the number of expected COPD deaths
- Highest prevalence of **childhood overweight and obesity** in London
- Increasing proportion of the adult population diagnosed with type 2 **diabetes** with 1969 unplanned admissions
- Lowest one year **cancer survival rates** in London.

Figure 1. Key challenges for Barking and Dagenham, Havering and Redbridge CCGs

The effective use of technology can aid in addressing some of these challenges; patients can take a more proactive approach to managing their care, clinicians can be supported to make informed decisions, and the system can provide a better patient experience by ensuring patients only need to tell their story once. These benefits will not only lead to better health outcomes for our population but will also create efficiencies in a system that is under increasing financial pressure.

2. Developing BHR'S Local Digital Roadmap

Through the establishment of our Integrated Care Coalition, organisations across BHR have an emerging track record of effective partnership working, leading to notable improvements for our local population. The BHR health and social care economy is comprised of the organisations below, each of which have contributed significantly to the development of the Local Digital Roadmap (LDR) through the LDR Working Group and numerous engagement events and workshops.

- Barking and Dagenham, Redbridge and Havering Clinical Commissioning Groups (CCGs)
- Barking, Havering, Redbridge University Hospitals NHS Trust (BHRUT)

- North East London NHS Foundation Trust (NELFT)
- Partnership of East London Co-operative (PELC)
- London Boroughs of Havering (LBH), Redbridge (LBR) and Barking and Dagenham (LBBD)
- London Ambulance Service (LAS)

Other organisations that have also been involved in developing the LDR include:
- Healthwatch, citizens and service users
- London Digital Programme
- Age UK
- UCL Partners
- Primary Care

The BHR LDR is aligned to the North East London (NEL) Sustainability and Transformation Plan (STP) footprint, which covers two other LDRs: Waltham Forest and East London, and City and Hackney. Organisations in NEL have a strong history of working collaboratively and share a number of key challenges, including high A&E usage, low dementia diagnosis rates and poorer cancer survival rates.

Alignment with the STP and other LDRs has been critical through the LDR development process, and has been maintained via the Accountable Care Organisation (ACO) Executive Committee and the STP Programme Board, which provides collaborative leadership for the NEL footprint. LDR leads and SROs for the three NEL LDRs have also been working closely to ensure that each LDR addresses its local challenges and priorities, whilst ensuring a cohesive approach across NEL.

The NEL STP Programme Board has agreed that the STP will undergo a formal approval process via the appropriate boards at organisational level once it has been assured by NHS England. The LDR has been endorsed by senior representatives of the ACO Executive Committee and will align with the STP sign off process following NHSE assurance (see timeline in figure 2).

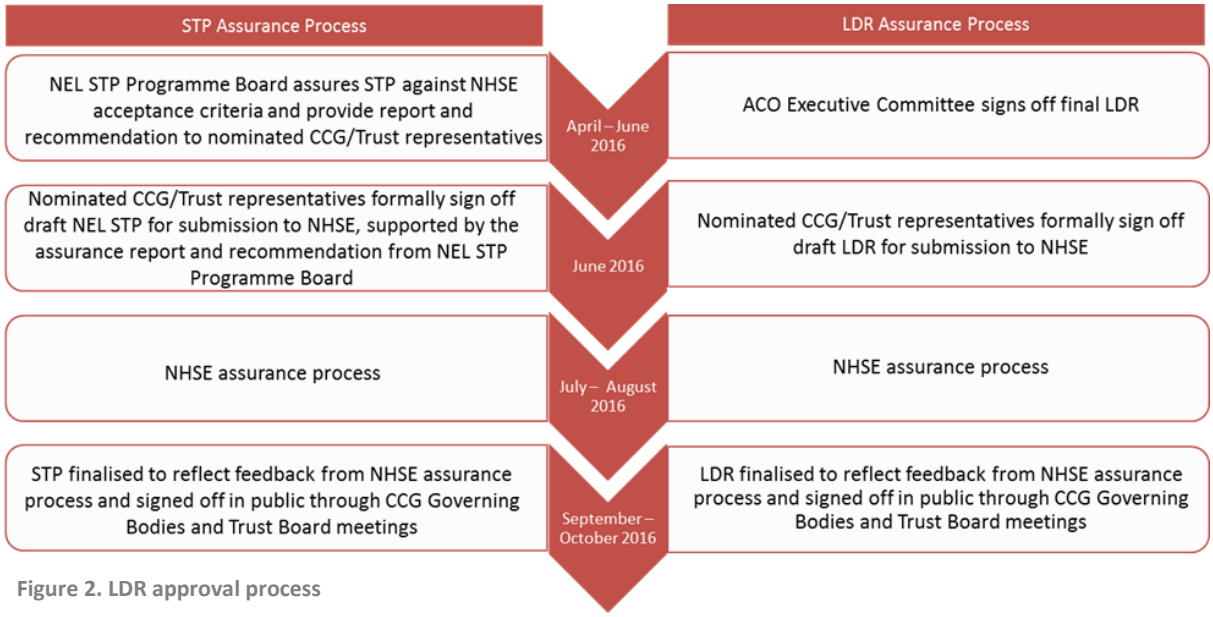


Figure 2. LDR approval process

3. A Vision for Digitally Enabled Transformation

Over the last 6 months extensive stakeholder engagement across the system has been carried out, including three Local Authorities, three healthcare providers, local clinicians, service users and patient representatives. Through this process we have collectively agreed a vision for a digitally enabled future for health and social care-

We will bring citizens, health and care professionals and commissioners into the 21st century with exceptional digital experiences wherever they interact, using technology to improve outcomes and lives. Accurate, real-time data will be used throughout our system to support well informed decisions. We will co-ordinate and focus resources and skills on fewer projects to deliver the best possible value.

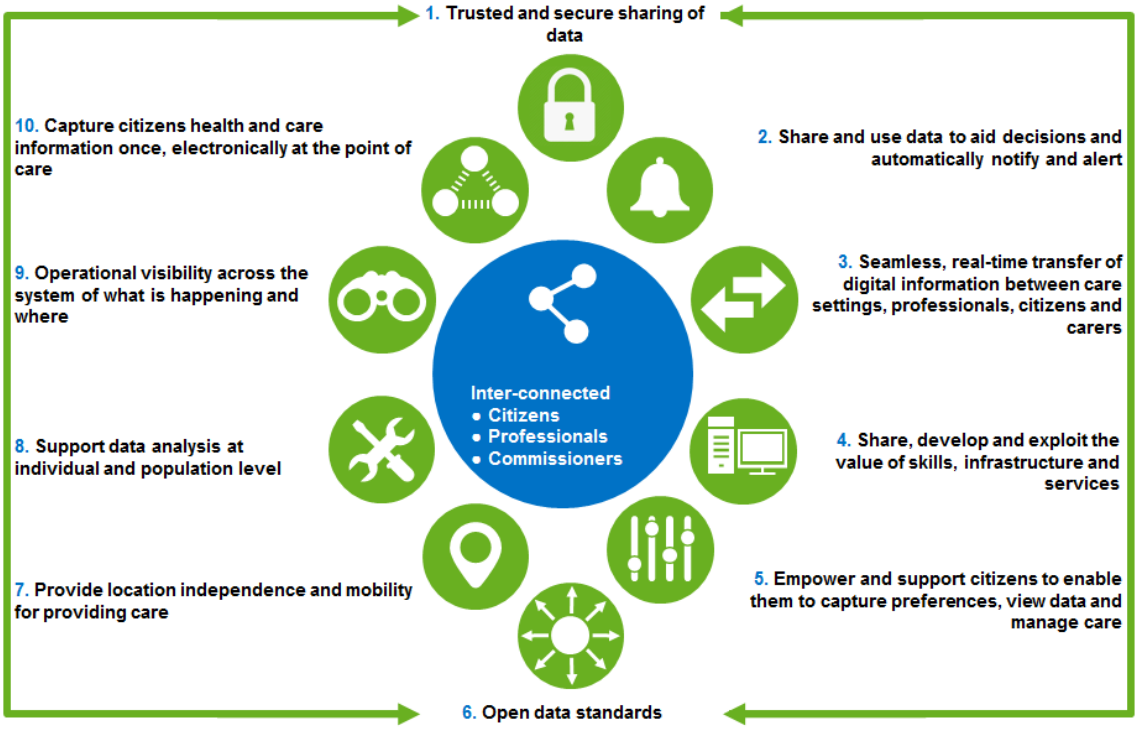


Figure 3. BHR design principles

The vision is underpinned by a set of principles (figure 3 above) which builds from national and regional guidance and local strategies. These principles are intended to guide the development of future infrastructure, systems and applications to ensure that they work across the BHR system, whilst also ensuring that the users of the systems, in particular service users and care professionals, gain the benefits of them.

The LDR is defined by seven themes that describe BHR's objectives in achieving our vision:

Planned and Urgent Care
With unprecedented levels in demand and growing financial pressures, it is imperative that we improve access and create efficiencies in pathways and the process for citizens and professionals. A key focus for BHR will be supporting parity of esteem for Mental Health patients, as well as enabling new models of care, such as placed-based models combining primary care with other community-based health and social care, and Integrated Urgent Care (IUC).

Co-ordinated care and care planning
Integrated and coordinated health and social care is a fundamental objective of NEL's STP and BHR's LDR. Integration of health and social care systems is required to enable more efficient transfers of care, for example, palliative and end of life care, reduce safeguarding risks and better management of patients in crisis. Safer and more effective care is also supported by the use of alerts and notifications for proactive care and prevention, and a directory of services for appropriate clinician referrals. BHR has recently piloted the use of MiDoS and is currently evaluating the pilot, the outcome of which will inform our direction. It is expected that BHR will deploy a solution that enables enquiries into health and social care services.

Population health and advanced analytics
BHR CCGs currently access linked datasets via Health Analytics, a solution that has developed to provide risk stratification for local GP practices, and finance and performance monitoring tools for Continuing Healthcare. With the use of this analytics solution, the CCGs were able to analyse and segment the population, and identify the cohort of patients that would be recruited to Health1000, a new model of care borne out of the Year of Care

Programme dedicated to addressing the health and social care needs of complex patients in BHR. A capitated payment approach is also currently being piloted with Health1000. While significant progress has been made in this area, further work is required to develop the solution to provide access to real-time, linked data sets at patient and population level to support population health management, monitor outcomes and effectively evaluate the impact of improvement programmes.

Self-care and personalisation
Emerging evidence suggests that patients who are more activated have better health outcomes and care experiences. Patient activation is an important factor in supporting patients to self-care and can be promoted through better access to, and more personalised, information, resources and advice. The STP and LDR's objective to support self-care will be achieved through the delivery of digital tools aimed to increase patient activation, some of which will be delivered pan-London, such as My Health London.

Channel shift
Implementing channel shift measures will encourage a more effective service and provide a better and more engaged experience for citizens. Delivering channel shift is one of the most challenging building blocks of this BHR LDR and requires user insight, trend anticipation, flexible and agile development and the determination to make the most of the user's drive to make their own approach to their health care easier, more informed and more timely.

Efficient infrastructure
Digital transformation must be underpinned by responsive and sustainable infrastructure that provides users with access to high performance, high speed networks in a protected and secure environment. Where appropriate, partner organisations across BHR will explore options to share infrastructure (see Annex 10 for further information on infrastructure).

Paperless
The move towards real-time digital record-keeping/sharing will mean all information required to support direct clinical care and analytics needs of health and care is collected once, and only once, at the point of care[1].

4. Baseline Position

BHR have a strong track record in the delivery of innovative and forward-thinking technology that supports the NHS future priorities and directly aligns to patient and user outcomes. The LDR builds on our substantial existing developments and learning of delivering complex technology solutions across BHR, including:

- The development of an operational solution for sharing the full GP record with our Urgent Care Hubs, including the ability write back into the record, which is currently fully functional and being deployed
- The development of a full, real time shared care plan (for Integrated Care and End of Life care) that is visible to health and social care professionals across settings
- Commissioning solutions to allow automated payment of Continuing Health Care and Nursing Care payments
- The fact that BHR CCGs are among the few CCGs who have achieved the Accredited Safe Haven (ASH) status
- The London NHS 111 Patient Relationship Manager (PRM) pilot which uses the telephone number to route a caller directly to a clinician, and the NHS number to retrieve crisis information, care plans and Special Patient Notes. The PRM also enables sharing of this key information with LAS and OOH.
- Integrated Case Management (ICM) Multidisciplinary Team (MDT) meetings taking place via online conferencing to enable all appropriate professionals to take part in discussions about patients on the ICM caseload
- BHR are currently developing a solution to enable direct booking from 111 into GP practices, and from GP practices into the Urgent Care Hubs, as part of the Urgent and Emergency Care (UEC) Vanguard. In addition, BHR is hoping to be a pilot site for NHS Online to support our UEC Vanguard.

[1] National Information Board, Personalised Health and Care 2020, Using Data and Technology to Transform Outcomes for Patients and Citizens, A Framework for Action

5.1. Digital Maturity

In November 2015, provider trusts nationally were required to complete a Digital Maturity Assessment (DMA) which measures the extent to which healthcare services in England are supported by the effective use of digital technology. The self-assessment framework is structured around three themes- readiness, capabilities and infrastructure- and provides a score by sub-section, such as strategic alignment and resourcing. Within the BHR footprint, the DMA was undertaken by NELFT, BHRUT and LAS.

While a difference in digital maturity between the organisations is expected, the DMA results do highlight the gaps in our providers' ability to deliver paper-free at the point of care. One obvious gap exists in the Acute Trust around records, assessments and plans, however this is addressed in the Trust's Digital by Design Strategy, and is outlined later in this document, along with its projected maturity for the next five years. As the LDR is implemented, organisations will monitor their improvements in digital maturity against their projected scores, shown in Annex 2.

A similar exercise has been carried out for social services and primary care, which will help in understanding where the strengths lie and where there are opportunities to improve. The results of the primary care assessments, along with summary scores for healthcare providers are shown in Annex 2. Social care assessment results are expected in July 2016.

5.2. As-Is Systems Landscape

Primary care in the three boroughs has been managed centrally for a number of years, and therefore national programmes have been rolled out across the three areas at the same time. As a result, general practices in BHR have made considerable progress in the move towards paperless practices.

BHRUT however, are currently heavily reliant on paper records, manual data input and manual intervention in information transfer with over 70 clinical and non-clinical applications in use. NELFT also have a number of clinical systems but are currently in the process of implementing a clinical portal and an integration engine to enable the sharing and viewing of real time information, reducing their reliance on paper records. Further details can be found in the summaries of the orgnisations' digital strategies in Annex 1.

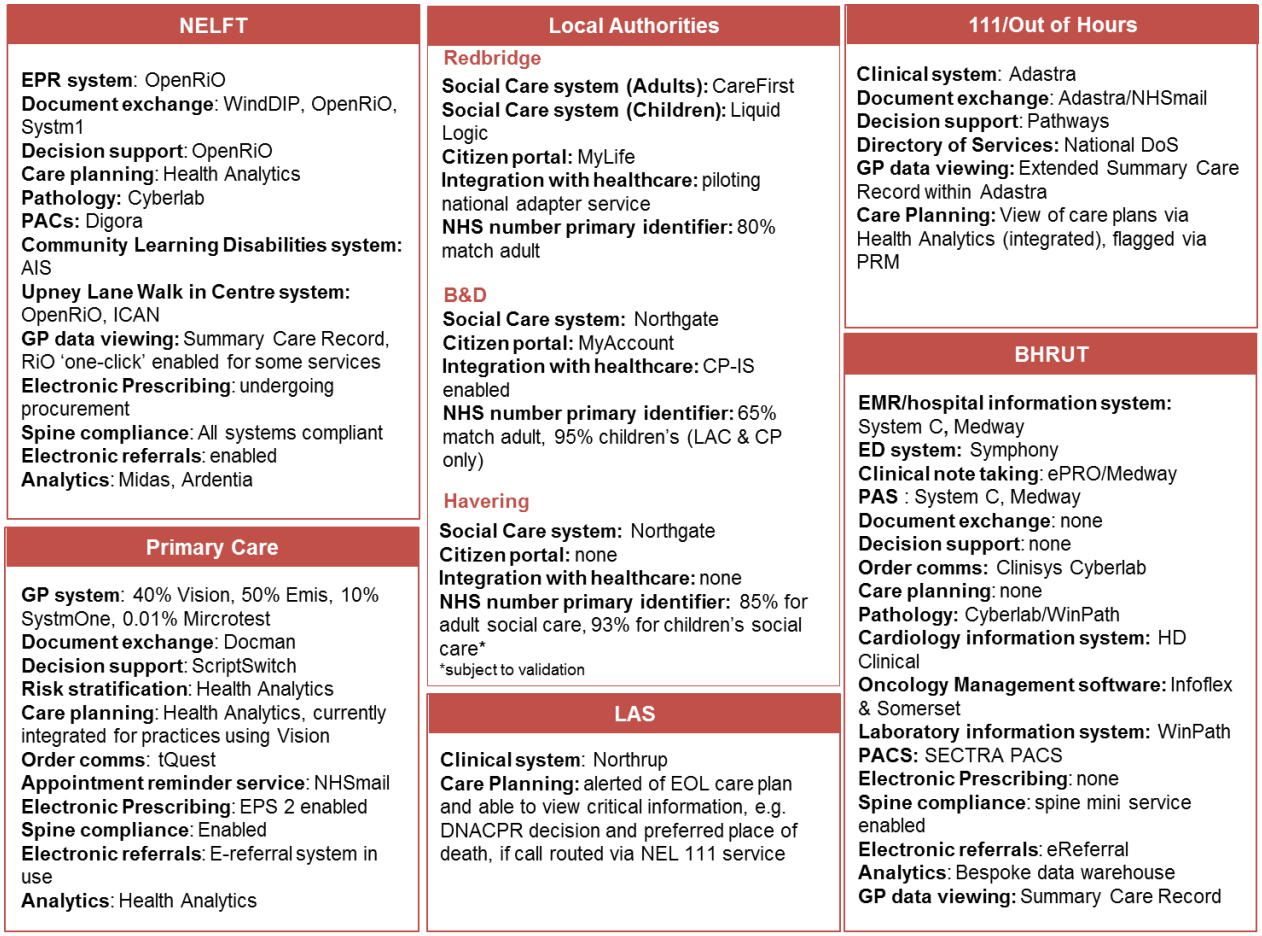


Figure 4. BHR landscape

6. Delivering Digital Transformation

In designing a solution for integrated and/or interoperable systems, it was crucial to establish common values and use the design principles to guide the process. BHR organisations are at different stages of digital maturity, have different system architectures, and systems have historically been disparate with limited ability to communicate or exchange information. Interoperability in BHR can be significantly improved through the use of a shared platform and service approach, coordinated at the BHR level extending HLP and National service, and through consistent adoption of BHR agreed interoperability standards for health and care. This will require co-design of interoperability standards, digital services that enable the flow of information for integrated health and care services, and exploitation of opportunities from adopting standards for health and care. Alongside this, a significant change programme will need to be implemented, and additional capacity within BHR will be required.

Figure 5 shows the Integrated Digital Services comprising:

1. Master Indexes – required to coordinate all BHR Organisations and the health and care services commissioned and provided. Master Indexes are proposed to be implemented as Directories which are optimised for high reading performance over writing.
2. Integration Broker – to **unify Services** in BHR, providers and consumers will be connected using policy controlled rules to ensure that future work flows and events can be developed into new applications, services and solutions to support care professionals and patients.
3. Common Care Record – a Common Care Record for a person with a consistent record of care status and history must be made available and accessible to authorised professionals. This Care Record (or Care Records) would be updated from the extant clinical systems and in real time to bring together information at the point in time and the place that it is needed. Different views of patient/care data would be required, e.g. care plan, care preferences, summary care record, and episode care record.
4. Data Warehouse – there must be capability to securely and appropriately store all required data to understand the flow of care of the person, flow of information to the professional and flow of resources to the service. There is a requirement to develop a capability to perform population health management at an ever more sophisticated level including analysis of large datasets, and eventual capability to develop decision support on near real time data.
5. Using Digital Services – innovation and supported exploration by care professionals and (some of the BHR) population are needed to redesign services using Integrated Digital Services. Trying the new services using real people, processes, information and technology will give the most accurate feedback for further development of the ideas and concepts needed to standardise, simplify and share for the benefit of the population by improving health and care services in BHR.

The development of the capabilities throughout the five year programme requires strong, upfront investment in interoperability and will require key interoperability solution components which will provide the backbone of the digital services, applications and systems.

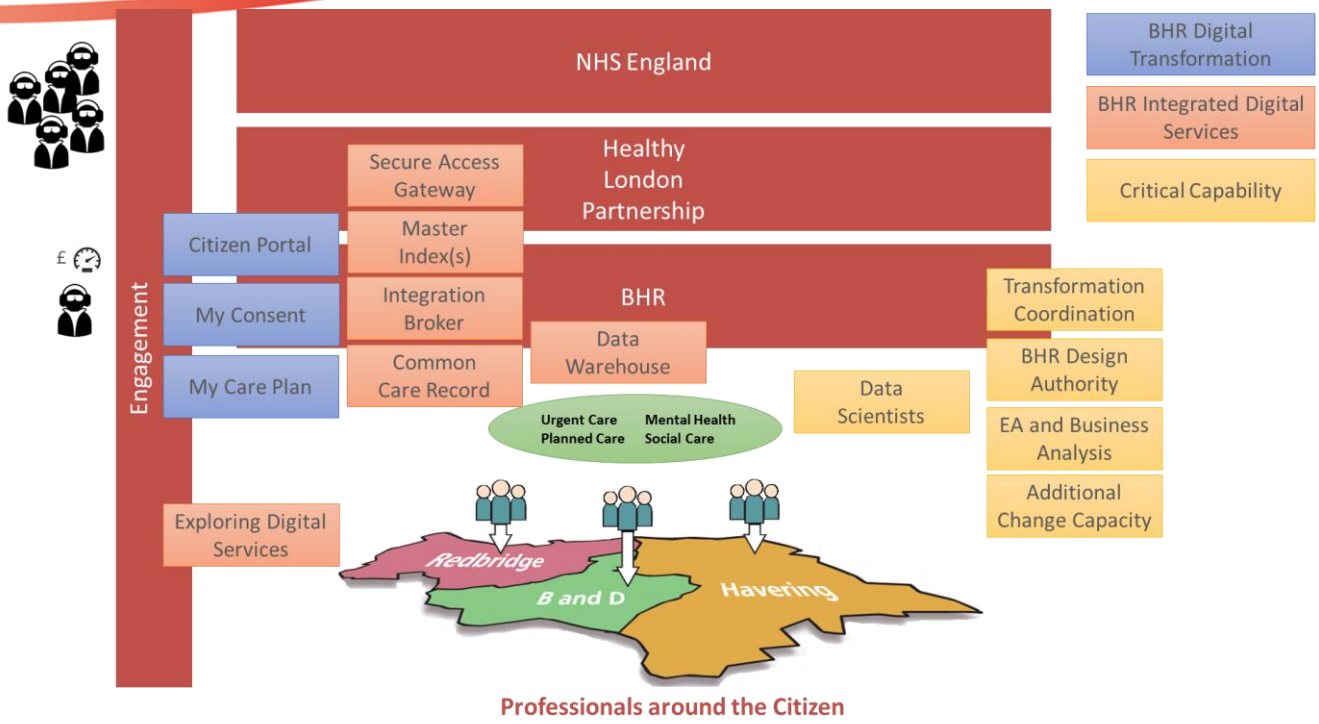


Figure 5. Integrated Digital Services

6.1. Local Capabilities

In the process of understanding and prioritising requirements, and subsequently capabilities, we have mapped the key change benefits assumed against each use case. The majority of requirements that have been described to us relate directly to patient or citizen satisfaction – these user stories have generally concerned patients or service users only having to tell their story once, having increased confidence in the level of care being received, or more personalised care. Closely related to this are outcomes identified that improve the quality of care, which includes patients being able to better express wishes and preferences.

Improved efficiency in the care pathway, including improvements in areas such as admissions and re-admissions, discharge planning and care planning, was a clear driver for a number of requirements, as well as a number of other more general areas of efficiency in the form of reductions in letters, phone calls and faxes, carrying out triage and analyses, reduced referrals, reduced assessments, and reduced duplication in tests and orders. Additional efficiencies related to the cost of legacy infrastructure and systems was also identified as the assumed outcome of a number of requirements.

Requirements that have been captured have been refined and prioritised for delivery, along with the Universal Capabilities. Annex 3 outlines the process through which the priority capabilities were agreed.

Alongside the development of the LDR, new models of care are emerging and are articulated in our STP, supported by the deployment of capabilities set out in the capability deployment plan (figure 7). The figure overleaf describes some of the benefits that could be realised through transformation enabled by these capabilities.

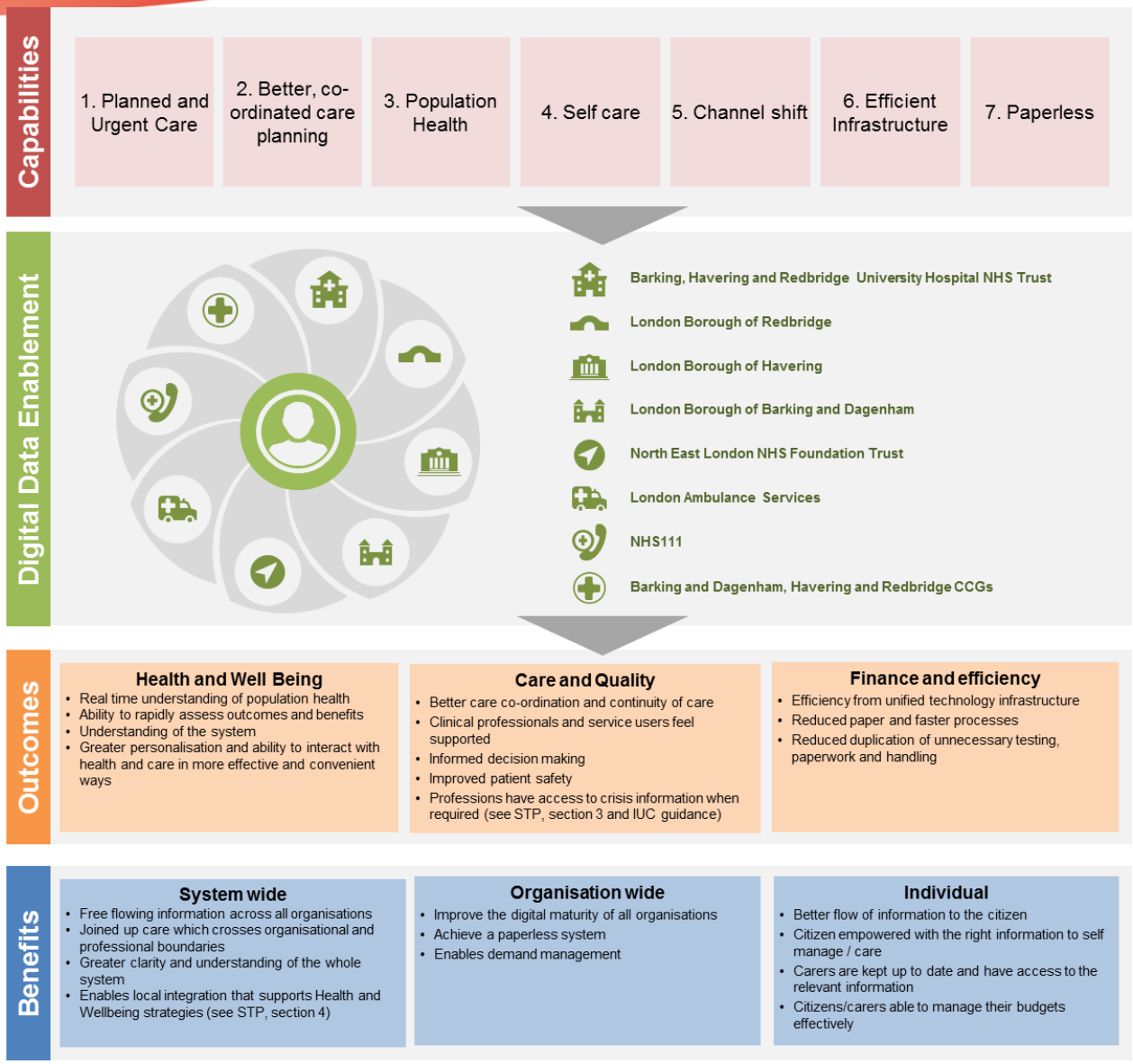
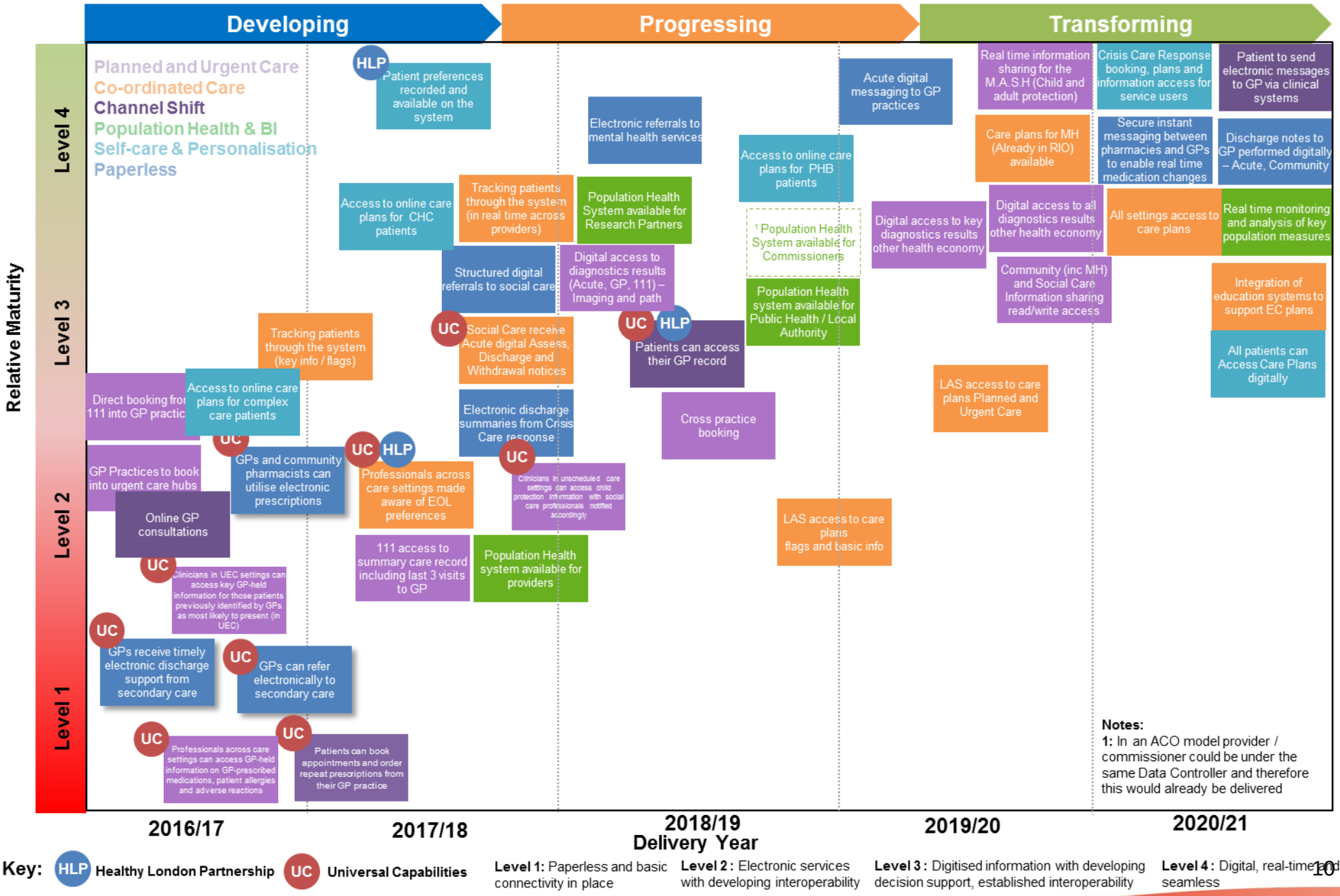


Figure 6. Digitally enabled transformation delivering improved outcomes and benefits for the individual and the system

6.2. Capability deployment

The plan in figure 7 outlines capabilities to be delivered over the next five years, moving partners across the local footprint as a whole towards being Paper-free at the Point of Care, as well as the transformational capabilities required to achieve our objectives. Annexes 4 and 5 contain further detail on implementation.

Capability Deployment Plan



Key: HLP Healthy London Partnership; UC Universal Capabilities

Level 1: Paperless and basic connectivity in place

Level 2 : Electronic services with developing interoperability

Level 3 : Digitised information with developing decision support, established interoperability

Level 4 : Digital, real-time and seamless

Figure 7. BHR capability deployment plan

6.3. Challenges

The health and social care landscape is a complex one and the challenges in introducing new technologies within that environment are unparalleled. The King's Fund[2] reported the principle factors that influence decisions to adopt technology, and as a system, we will need to identify early on how these challenges will be addressed:

- The level of engagement between technology suppliers and the NHS - over the last 6 years, BHR CCGs, previously ONEL PCTs, have established strong relationships with a number of technology suppliers and have been able to develop technologies and pilot systems in collaboration with these suppliers. BHR will continue to expand and build on those existing relationships.
- The availability of agreed technology standards - we will work at a local level to ensure nationally agreed data standards are used throughout our roadmap deployment.
- Consumer awareness of technology and understanding of the benefits that it can bring – extensive engagement with health and care professionals, service users and carers has begun in order to understand the needs of these groups and increase awareness of technological capabilities and their benefits. This will be an ongoing process as we implement our roadmap.
- Concerns about confidentiality and usability – while we are working with patients and citizens locally to better understand and address concerns, much more needs to be done, both with our communication and engagement colleagues, but also at a national level.
- Government policy - while we are unable to influence government policies, we will ensure our system, processes and people are sufficiently agile in order to respond to policy changes.
- Leadership and direction – partners across BHR have come together to create and pilot an ACO framework that will remove commissioner-provider distinctions and take ownership of the combined health and social care budget to deliver improved outcomes for the population. The ACO Executive Committee will provide collaborative leadership, direction and oversight for our roadmap and its delivery.
- Mechanisms to evaluate technology and encourage adoption – our local innovation test bed, Care City, will aid in informing developments and supporting adoption.
- Effectiveness of procurement and decision-making – the roadmap clearly sets out our priorities, and our design principles ensure any products purchased, or solutions developed, will meet the needs of the system and promote usability.
- Resources: funding and people - with NHS budgets under increasing pressure, funding for technology will be much more difficult to access. Through the development of the roadmap we have been able to prioritise our initiatives and identify where we are able to optimise assets and resources.
- Information governance – perhaps the most significant challenge in developing and implementing system-wide solutions is information governance. The key issues for BHR are no different from those faced across the country, so we will work with regional and national bodies to implement the appropriate standardised measures. In addition, BHR will work towards a standardised fair processing notice until a pan-London approach is agreed.

In addition to system-wide obstacles, each organisation is faced with their own challenges:

- BHRUT are currently in special measures and working with system partners and NHS Improvement on agreed action plants to embed CQC standards, and continued improvement to sustain 'good' or 'excellent' CQC rating
- NELFT deliver community and mental health services to eight CCGs and will need to align to three different LDRs
- LBBD have recently re-tendered for their social care system and is currently in the implementation phase
- LAS cover the entire Greater London region and therefore features in multiple LDRs

A number of risks also arise from implementation of new technology, such as cyber security threats and potential unauthorised access of data. BHR's approach to minimising these risks is described in Annex 8.

[2] The King's Fund, Technology in the NHS, Transforming the patient's experience of care

6.4. Enablers

Faced with considerable challenges, it is essential that we take full advantage of existing enablers to ensure our ambitions are achieved:

- Open data standards - widespread interoperability between health applications is achievable once a useful set of standards is agreed and accepted.
- Information governance is fundamental to the success of this roadmap. Properly implemented and with engagement from service providers and service users, it is key to enabling most of our strategic outcomes. We will continue to adopt national IG standards and work with NHSE to ensure these standards are appropriate and practical. We will invest in our staff to ensure they can promote the benefits of information sharing and will campaign amongst our service users to increase understanding of the benefits of appropriate information sharing.
- A key enabler to achieving our vision is the digital literacy of our workforce. We will ensure that we facilitate learning and support development of our staff so that they feel confident and empowered to utilise any new technologies.
- Digital inclusion – ensuring that access channels for clinicians/carers and service users have the widest possible application
- Digital literacy of patients and carers is crucial, when people are accessing information about their care and especially when implementing digitally-based self-care facilities.
- Maximise the existing capacity of current digital infrastructure and make full use of it before considering further investment. We will explore the option of consolidating both the infrastructure and its organisational support where appropriate.

7. Finance Requirements

We have developed a programme approach which complies with the principles agreed within our LDR and with the organisations therein. The programme, illustrated in figure 8, and its constituent costs (shown in Annex 6) are broken down into logical components totalling approximately £42M. These components will be integrated together and will allow flexibility to use rare skills efficiently, manage the implication of inevitable change, support resource constrained organisations, and deliver against the overall set of functions and requirements agreed. Certain components are time limited, and relate to a requirement to implement the project, some however are endearing, in that new skills and resource are required to monitor, maintain and continually develop and exploit the new technology as strategic and operational needs demand.

The components are as follows:

- **Governance:** The inclusion of a Chief Clinical Information Officer and Director support to free up time to Direct and steer the programme.

- **Programme Management:** Programme management and a PMO structure to provide the control and guidance, manage the plan, the risks and issues, finances and reporting. Project Managers to be allocated to capability projects as required.

- **Core Development Team:** A pool of technical development specialists who will be allocated against an Agile programme to develop new functionality, or ‘seconded’ to capability projects to deliver the schedule of functionality and requirements.

- **Core Technology:** The set of enabling technologies that are used across all capabilities to deliver the new interoperability ‘layer’ that will enable the seamless sharing of data and for consistent and systematic interconnection of systems.

- **Capabilities:** Each capability itself will require support and development and also technology and system change to enable functionality and requirements. The detail of these changes is currently under development, but the complexity has been estimated along with an estimate of costs of change.

- **Business Change and Culture:** Technology itself is only an enabler for change. It needs to be integrated into the operational approaches and processes of the organisation and care pathways. This provides necessary support to build on the broader transformation work and ensure the necessary processes, skills and cultural change aspects are delivered alongside the technology.

- **IG/IS:** Information Governance and Security of data remain a paramount requirement and of critical importance to the timely delivery of the project. This component provides additive skills to work jointly with the wider organisations to address the necessary changes and put in place the necessary governance and assurances required.

- **Capability Teams:** These are long term skills and roles which will be required to manage the new technology environment

As time moves in the programme, it is recognised that new technologies and solutions will become available for use that may expedite delivery and reduce cost. The agility of our approach above allows us to absorb these changes, and the overall programme financial envelope will need to adjust accordingly to take advantage of these opportunities. Details with assumptions made can be found in Annex 6.

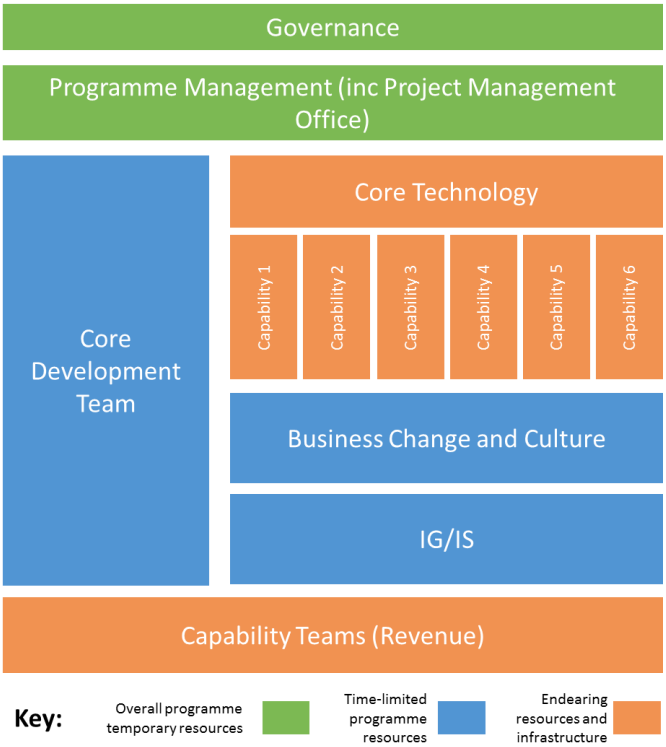


Figure 8. Programme structure

A comprehensive review is currently being carried out to identify funding streams that we may be able to apply to over the next 3-5 years.

8. Governance and Programme Management

In order to ensure successful delivery of programmes, strong leadership and alignment with organisational and system objectives must be maintained. The system wide executive will ultimately hold accountability for delivering against the LDR, while a steering group with technology leads from each organisation will take the lead on delivery. The steering group's mandate will be to deliver against the agreed LDR. This mandate will be backed up by an approved operational plan, which includes funding and roll-out plans, to ensure that projects can proceed over at least one year at a time. The group will also provide a mechanism for ongoing prioritisation of investment in technology and support initiatives through to implementation.

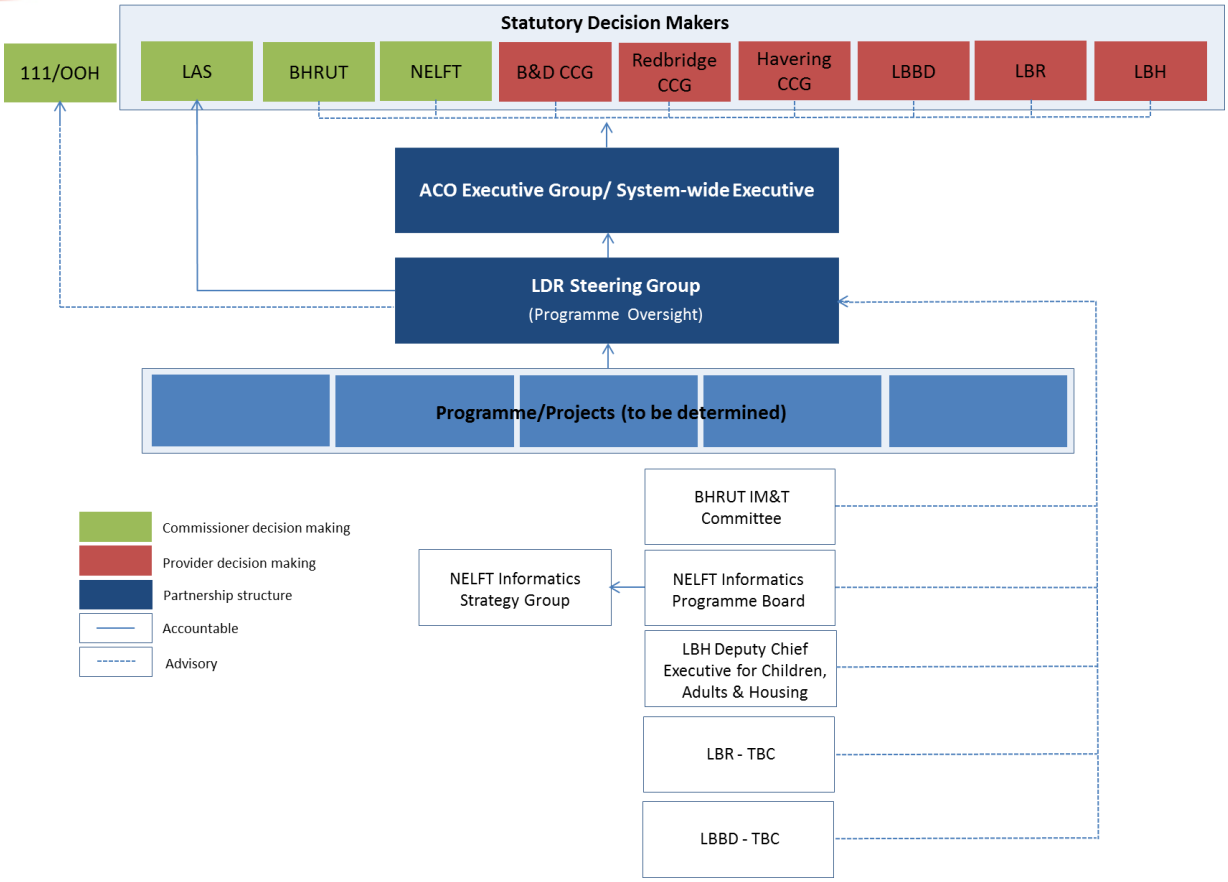


Figure 9. Governance arrangements for delivery against the LDR

Projects delivering against the LDR will be established under a unified programme and operate in line with project management best practice. Where possible, an agile development approach will be taken to ensure benefits are delivered early and are assured by users (see benefits realisation approach in Annex 11). Projects will report to the central steering group as well as local governance for the responsible organisation. A central team of resources with specific skills will be shared amongst the projects (e.g. Information Governance, Security, Business change) which will enable knowledge and skills to be shared across organisations and also ensure a consistent change management approach (see Annex 12 for details).

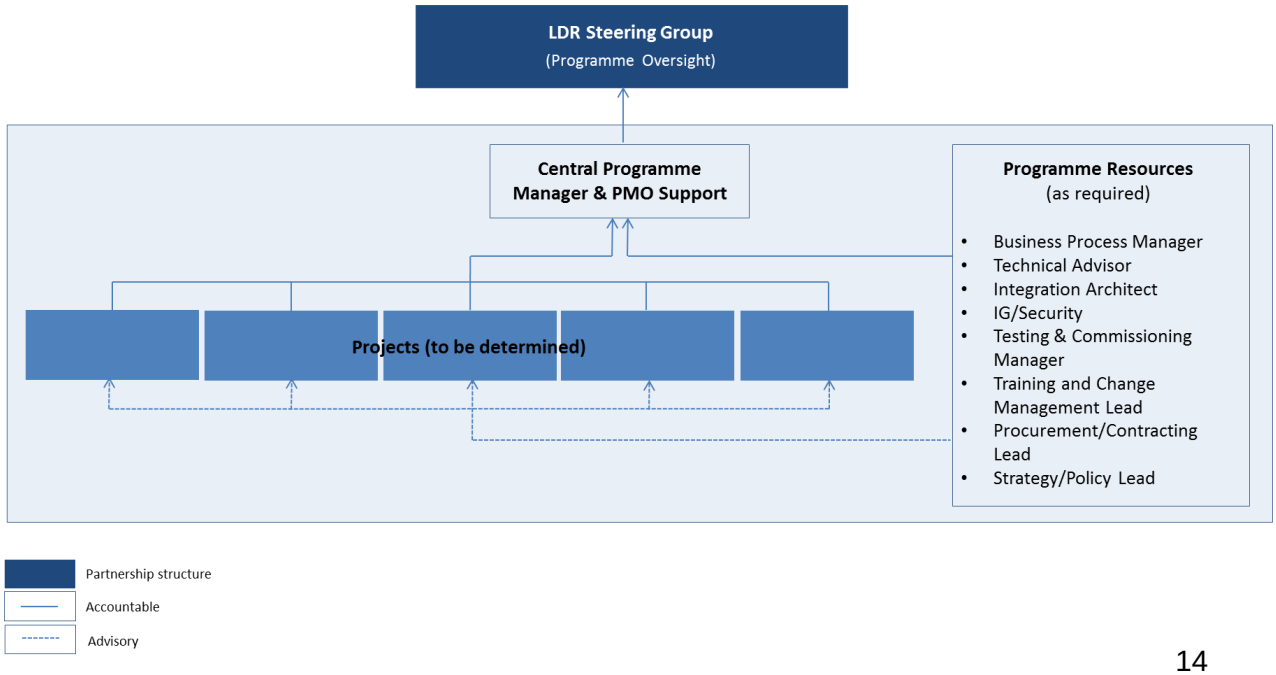


Figure 10. Programme management structure for delivery against the LDR

The following risks to delivery against the LDR have been identified, along with mitigating actions:

Ref.	Risk	Mitigation
R001	Sharing information and records within and between health and social care, addressing Information Governance issues and resolving the conflict between the duty to share and confidentiality	Continued investment in the IG agenda with dedicated specialist(s) working alongside programmes and with NHSE to identify options/potential solutions.
R002	Uncertainty around funding may affect decisions on long-term investment	BHR will take an agile approach to development which will enable us to deliver capabilities rapidly and adjust to changes accordingly
R003	Digital literacy of the workforce and patients	We will invest in facilitating development of our workforce and ensure solutions for patients are have been co-designed and allow for widespread adoption.
R004	Capacity of organisations to manage and implement change to exploit digital technologies	Our shared resource pool will provide flexibility to use skills efficiently and support resource constrained organisations
R005	Delays by system suppliers to engage and develop	Maintain pressure on system suppliers via NHS Digital and our partner organisations

ANNEX 1 – Summary of Organisational Strategies

1.1. NORTH EAST LONDON FOUNDATION TRUST

Locally and Nationally the NHS needs to move with the "digital revolution" and NELFT will support and be at the forefront of technology solutions in supporting the delivery of care. NELFT's 5 year ICT plan has been developed with the recognition that patients and carers use technology on a daily basis and expect to be able to access information online, book and change appointments and in the near future have access to their care record. The Trust's plans are to move towards being an organisation that enables its staff and patients to be able to access the web in any of its buildings whilst ensuring that the appropriate security safeguards are in place to protect all whilst making access easy.

NELFT Informatics will play a central role in supporting the achievement of the organisation's proposed strategic change in the way health and social care services are delivered.

The Trust covers a wide geographical area which has expanded due to the successful bidding for additional contracts; the Trust currently employs approximately 6,500 across the organisation. . NELFT, formed from three organisations that spanned six boroughs: Barking and Dagenham; Havering; Redbridge; Waltham Forest; Basildon and Brentwood; and Thurrock. It now covers aforementioned London estate and SW Essex. These mergers/acquisitions have resulted in an Informatics Department supporting a variety of Information and Communication technology (ICT systems).

NELFT has changed from being a provider of mental health services to delivering 60 per cent of the Trust's total services in the community health arena. NELFT ICT Strategy has been developed to ensure it delivers the outcomes identified by the Trust Clinical Strategy, Trust Strategy, Quality Strategy, Estates Strategy and operational plans. These strategy/plans will ensure that current and future technology is fully and effectively developed. The NELFT ICT Strategy programme will facilitate delivery against national and local targets as well as operational requirements in order to achieve the principle aim of providing access to the right information at the right time.

NELFT IM&T strategy covers the following main themes:

- A Robust Service Strategy to support NELFT services
- A connected service portfolio across corporate services
- A drive to build skills across ICT and invest into people
- A modern, reliable, scalable, secure infrastructure
- Promote, transform and support optimisation of ICT and EPR applications.
- A paperlite environment.
- A shared and comprehensive clinical record covering present and past clinical information to support clinicians in delivering best care at the point of care.
- Support an Agile work force by providing the right devices that will support the provision of care at home
- Innovative, integrated and interoperable systems that support clinicians with accessing real time information in a single care record containing cross organisational data feeds.
- A strategy to bridge the digital divide across NELFT
- Build, Enhance and strengthen Strategic Partnerships aligned to local digital roadmaps

To deliver the above requirements the Capital investment programme implemented the following projects over 13/14 to 15/16 years:

- Merger of NELCS and SWECS infrastructure and NELFT's IM&T systems
- IM&T systems for Applications Software, Data Warehousing/Reporting,
- Investment into WANs and LANs across multiple sites
- Wi-Fi (corporate and guest) across All NELFT sites
- A Unified single Telephony solution across NELFT estate
- Investment into EPR systems and subsequent development of the systems
- Converged Data Centre integrating Data Centres at Goodmayes and Beckett's House.
- Replacement/upgrades of core switches, utilising the Cisco Nexus range of switches within Cisco's Data Centre portfolio; delivering converged Core and Aggregation Layer Model and a low latency network.
- The extension of the network to SW Essex to replace the BT COIN that NELFT previously used
- A single network domain covering all of NELFT's sites
- A single- mail and telephone system covering all of NELFT's sites
- New C7000 Server blades and 3PAR SAN systems
- New wireless infrastructure
- New DR site for the Goodmayes/Beckett House Data Centre
- Migrating NELFT, ONEL and SWECS sites from MEVPN services to more secure IPVPN services to achieve compliance to PSN requirements.

The national contract between LPfIT and BT which provided NEFLT's London estate with RiO, an electronic patient record solution terminated in October 2015NELFT undertook

An EPR system procurement via the 2015 Consortium, consisting of 30 Trusts working together under LPfIT project management. In 2012/13, this consortium conducted a rigorous Official Journal of the European Union procurement to create a "Framework Contract" resulting in 9 suppliers capable of replacing the current BT/RiO EPR system. The successful procurement resulted in the Trust entering a 5 year contract with Servelec to deliver OpenRIO; under the contract the Trust moved from 5 single instances of RiO to a single instance of OpenRiO. The national contract between the Department of Health (DH) and Computer Sciences Corporation (CSC) which currently provides electronic patient record solution to the South West Essex estate will expire in July 2016. NELFT utilised the existing 2015 Consortium to undertake procurement for a replacement EPR. NELFT are currently engaged in contract negotiations with the preferred bidder.

Over the next 2 years NELFT EPR systems will continue to be developed and enhanced in order to meet the needs of patients, clinicians and commissioners; delivering benefits through interoperability.

NELFT will continue to improve care pathways using information technology by;

- Ensuring that at the point of care, clinicians can access real time information past and present clinical information held by internal and, external systems.
- Configuring internal EPR systems to meet changing clinical requirements.
- Improve EPR usage through training and clinical transformation.
- Improving data quality
- Implementing a Clinical portal and integration engine to enabling the sharing and viewing of real time information
- Developing a strategy for document management and procuring/developing and deploying the solution across NELFT
- Developing a strategy to for electronic prescribing and deploy EPMA solution across NELFT services
- Utilising the EPR to support the Paperlite initiative.
- Deploying a Single Sign on Solution to allow faster, more efficient access to applications

- Supporting clinical delivery via the Agile programme by maximising the IM&T portfolio and supporting services
- Support the LDR by enabling professionals across care settings to access GP-held information at the point of care using the Clinical Portal; e.g. GP prescribed medications, patient allergies, adverse reactions
- Support the LDR by enabling GPs to refer to secondary care electronically
- Support the LDR by providing GPs 'real time' electronic discharge summaries from secondary care
- Support the LDR by providing Social care 'real time' electronic assessments, discharge summaries and Withdrawal Notices from acute care
- Delivering Digitised Notes (EDMS) to support the paperlite agenda by 2020 covering Corporate and Clinical Services.
- Enabling clinicians in unscheduled care settings to access child protection information with social care professionals being notified accordingly
- Implementing Tele health / Patient Access pilots in conjunction with Care City across LTC and Dementia services
- Developing/procuring an Offline EPR solution for the London estate and deploying the SystmOne offline solution across Essex
- Deploying SystmOne Inpatient Unit in Essex.

NELFT was successful In 2014/15 in achieving funding from safer wards safer hospital tech funds to investment in a clinical portal and integration engine.

This integration will deliver 3 main products;

1. A compliant Integration Platform to meet national NHS standards.
2. A Clinical Portal delivering a single integrated record/view of patient information.

The proposed solution will address;

- IG Compliance and auditability
- NHS Interoperability Compliance
- Creation of single views of patient data which are relevant to the user to support the care pathway
- Sharing of NELFT data securely within the Trust and the wider Healthcare community

The aim is connect all relevant internal, external, (local and national systems) to provide a single care record view to NELFT clinicians.

1.2. BARKING, HAVERING AND REDBRIDGE UNIVERSITY TRUST – DIGITAL BY DESIGN STRATEGY

The Trust's 5 year IT strategy aims to significantly upgrade and transform how IT will enable the Trust to achieve its overall vision, which is to provide outstanding healthcare.

The Digital by Design Strategy aims to:

- Deliver excellence in IT basics, with an up to date, highly available, highly reliable, high speed infrastructure and computer estate.
- Build an integrated electronic patient record, accessing data from multiple systems to create an integrated care record. Internally created and externally created data about patients will be available whenever and wherever needed for clinicians and patients.
- Remove the need for paper, redesigning business processes and replacing paper based processes with simplified, leaner, keyboard based processes and a '3 clicks and you're there' approach.
- Deploy key safety technologies such as observations and e-prescribing.
- Ensure the business systems, skills and expertise and governance processes within the IT department are robust and fit for purpose.

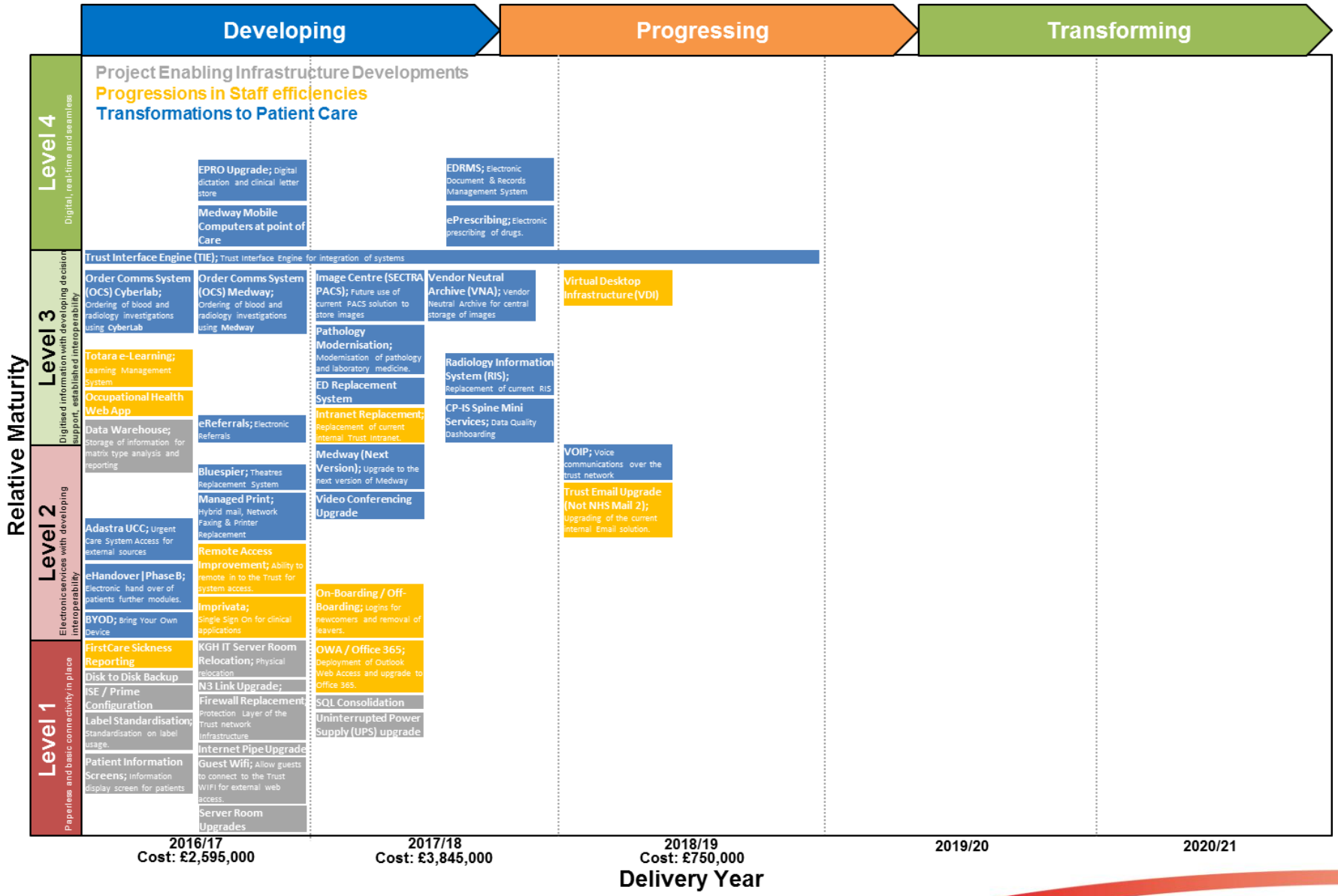
- Ensure that IT is embedded within the delivery of clinical and non-clinical services so that the strategy and any projects are aligned to and driven by business need, and led by clinicians.
- Ensure that the applications in use within the Trust are up to date, and no application is more than one version behind the latest release.
- Develop innovation as a core competency to ensure that the Trust keeps pace with technological advances.

The implementation of the strategy should enable business process transformation which will improve efficiency, reduce the cost of delivering care, and improve the effectiveness of care delivered. Often, IT systems are implemented to replace existing business processes, and whilst this strategy envisages a move from paper to digital, it does not propose a simple replacement of existing processes.

Much of the efficiency gain lies in the redesign of workflow and business processes. The approach to implementing this strategy through the deployment of technology will start from analysing and redesigning business processes, and using IT to support simpler, more efficient, more reliable and less costly processes which will ultimately improve care and reduce cost.

IT will become a change agent for business processes, rather than simply acting as an enabler.

Digital by Design Capability Deployment Plan



1.3. BARKING AND DAGENHAM, HAVERING AND REDRBIDGE CLINICAL COMMISSIONG GROUPS

The CCGs' collective ambition is to support the delivery of improvements in the quality of care from the services commissioned, by moving activity out of acute settings and into community settings. This long term vision, along with the move to better integrated health and social care services, will be supported by an effective IM&T strategy

Implicit in this ambition is:

- accurate, understandable, comprehensive, timely and secure information, appropriately accessible where and when needed for the development and provision of high quality health services;
- improved adoption and exploitation of technology delivering seamless information enabling all users to interact with information and online services using email, telephone calls, text messaging and multimedia, in a consistent and integrated manner;
- a progressive information culture that delivers increasing levels of skills, understanding, enthusiasm and innovation in the analysis and use of information to support business and clinical decision-making;
- a cohesive team of customer-focussed IM&T professionals employing acknowledged best practice methods for the delivery of IM&T based solutions.;
- effective IM&T leadership, governance, policies, standards and architectures that are well communicated, understood and adopted across the CCGs';
- continuously developing the IM&T asset base and human resources whilst consistently delivering optimum value for money;
- an outward looking IM&T service that exploits initiatives at all levels across the NHS as well as meeting statutory and mandatory requirements

During the last 12 months the CCGs have moved some way up the efficiency curve by delivering significant efficiency gains through technology, this has involved some changes in processes and technology e.g. the Continuing Healthcare service transformation. The ambition of this strategy is to secure further efficiency gains through the use of technology but then move on to the next stage of using technology as a catalyst for change. In some cases this will require fundamental changes in our processes, working practices and systems.

1.4. LONDON AMBULANCE SERVICE

The LAS IM&T strategy will play a key enabling role in ensuring that the patients U&E care journey from dialling 999 or 111, through to treatment, referral or conveyance and handover, is digitally enabled and is joined up with their overall care record in this and the other six local London digital footprint roadmaps.

The LAS's IM&T Strategy provides a framework and roadmap for the focus of LAS IM&T service design, delivery and development over the next five years. IM&T plays a critical role in the day to day delivery of LAS services and a central role in supporting the achievement of strategic change in the way the LAS delivers health care services, particularly in the Urgent and Emergency care arena.

The organisation is looking to develop strong foundations and move on to become more agile both in its delivery of services as well as its business processes and capabilities. The IM&T Strategy will play

a key role as an enabler linking IM&T services and developments to the LAS's strategic objectives as a shared purpose. The aim is that the Strategy will help place the LAS in a strong position by the end of 2020, harnessing information, through the advent of digitalisation and the transformative impact of system wide linked data, to improve delivery of patient care, clinical excellence and innovation.

To enable this the internal LAS's IM&T function will be organised to evolve, from what could be seen as a reactive solutions provider into an effective value adding partner in the LAS and beyond. A partner with a shared purpose that will jointly, with sponsoring business owners and external commissioning, deliver services and work programmes to facilitate desired improvements in patient care. This will be achieved through a range of initiatives to assist in delivery against national and local targets, address operational and organisational needs and provide new digital patient centric solutions with digital access at the point of care delivery, linked to the overall patient care information journey.

The principle informational aim is to provide our staff and care partners access to the right information and services at the right time, within structured workflows, wherever they are, effectively, efficiently, and safely for the benefit of patients.

It is essential that investment in LAS IM&T services is driven by the LAS's business and operational needs and plans for change. These plans will increasingly focus on the LAS becoming more effective and efficient partner in a joined up way through changes in service delivery that minimise cost and drive out overall inefficiencies, whilst still providing quality holistic services to patients. Reinvestment of LAS efficiencies will perpetuate programmes of change. The delivery of benefits will be increasingly dependent on stable, consolidated and innovative IM&T solutions, designed and built in partnership with the business and external partners. Successful delivery and adoption will require improvements in IM&T capabilities, organisation and engagement with other areas of the LAS and the London care footprints.

The LAS covers a large and dense population in mainly urban and suburban landscapes and consequently has a large mobile workforce as well as a range of dispersed operational based cross London. The Trust does not differentiate the informational or technology architecture across the London footprints so the IM&T strategy needs to provide a standardised way of linking with the seven footprints. A changed emphasis on providing improved linked-up operational clinical and welfare information solutions fit for a mobile workforce is key. This can only be achieved on a strong foundation of stable and interlinked background services using common standards to manage workforce information and assets.

With a challenging financial situation predicted over the next few years, and a changing and more informationally rich health and emergency service landscape, it is vital that the LAS strategy focuses initially on getting the basics right and that there is strong and well managed engagement from staff in exploring existing and optimising new processes, embracing technology and making it work.

To meet the challenge the LAS will:

- Recognise the key issues for our patients, colleagues and partners, and change what we do, which means altering how we do some things in IM&T and as a Trust
- Recognise the world and our patients are changing; embrace the digital revolution to transform healthcare and emergency service delivery before it is changed for us, whilst continuing to provide secure information services for our patients.
- Systematise how our patients and their information can be part of the care system, interacting differently with our staff and care partners and Systematise and improve support for our staff and organisational functions.

The shape and scope of the LAS Strategy reflects views gleaned over many months both internally and externally, within IM&T, with LAS Departments, the local health community and beyond. It responds to:

- The LAS's five year plan,
- Initiatives and emerging factors identified through engagement with senior managers across all areas of the LAS
- The Association of Ambulance Chief Executives vision for the future of Ambulance healthcare 2020,
- The NIB priorities to be able to operate and integrate digitally with the full range of healthcare and social care partners,
- The advent of digitalisation and system wide linked patient data and its transformative potential of to improve delivery of patient care, clinical excellence, and innovation.
- The continuing need to interoperate with our Emergency Service partners locally and nationally.

It supports and is enabled by wider initiatives, such as the Healthier London Information partnership and the implementation of the national mobile Emergency Services Network and provides an approach to enable the emergence of next generation 999 initiatives. The LAS strategy is also positioned to assist in the development of emerging collaboration initiatives in both the health and emergency service arenas.

The LAS IM&T Strategy promotes development of the LAS's electronic clinical information services and the reduction and where possible elimination, of paper driven process to create a digital healthcare capability. It advocates a digital culture; a culture that embeds the use of technology within its live processes and consequentially inputs, processes and extracts data in real time.

With a focus on supporting the desired Operational and Clinical processes by getting the right information, for the right patient, in the right place, at the right time, the Strategy will ensure relevant information is available whenever and wherever it is required in a secure way.

Digital Gaps in the 999 Patient Journey

The LAS currently operate paper based systems for the capture of patient care information and transferring information to Emergency Departments and other care pathways and referrals.

The LAS operates a data warehouse which contains "call records" based on the event in the Computer Aided Dispatch System as a result of a 999 telephone, automatic transfer or healthcare professional call. The Patient data which is largely collected and recorded by crews on paper is retrospectively scanned in as images, with some data entry, and is then stored and linked to the CAD call record in the data warehouse. The protocols, pathway and other useful information used by paramedics to assess, refer and treat patients is also largely paper based.

There are risks related to the accuracy and intelligibility of hand written documents, the timeliness of information being provided to EDs and other care pathways in the patient journey, and the potential loss of paper clinical records in a distributed and mobile environment. In addition there are risks to the organisation and patients through the current use of manual paper based processes to manage and report on medicines usage and other assets adequately.

In order to improve patient care and use of the most appropriate care pathway for patients, paramedics should have access to up-to-date digital patient and supporting information, and a real time awareness of other NHS services available to them. The requirement for the mobile workforce to access, link and share information with other care agencies and to contribute patient data back into urgent and

emergency care records needs additional technology in the form of a “patient” based information systems and mobile applications.

The LAS has developed business cases in the past, however affordability has been an issue. Whilst previously there has been some discussion of the merits and affordability of electronic patient records in the LAS, the NIB strategy makes it clear that the LAS is expected to integrate by 2020. The LAS will re-establish a programme board under an executive team lead, which IM&T will support, to deliver the changes needed.

In practical technical terms the LAS will need to:

- Digitally identify patients we treat during their journey with us, this may be at the EOC call handling stages or once there is patient contact.
- Adopt the use of the NHS number as the key patient identifier using one of the available methods through the spine once the patient is identified.
- Introduce mobile e-PRF technology to digitise our patient record processes, with staff using integrated mobile devices to verify patient identity, record treatment and improve decision making on conveying, referring or treating patients. This will require significant integration with other’s processes, information and systems.
- Provide mobile access to the patient summary care record (initially) the patient’s Digital care record (as it becomes available) through the HLP approach, continuing care plans, and generic care protocols and information
- Introduce a patient centric back end digital patient record system to store and to access our (and others) records,
- Integrate this with the patients centralised and dispersed digital health care record.

With the demand for external integration, adopting existing and emerging standards and changes in the topology of our care partners we do not believe this can be achieved within our existing CAD and will need to be adjunct system or set of systems, closely integrated, along the lines of a patient information system with applications for mobility.

We will not be able to individually integrate with all our care partners but will look to consolidate integration and linking up of information through initiatives and standards borne from the joined up working of the Healthier London Partnership U&E Care real time information sharing initiative.

There are a number of technology options to deliver this overall capability, from in house development, through traditional ePRF solutions, emerging innovative App base solutions to introducing a fully mobile clinical and patient and information system. Whilst the LAS solution will be defined through the LAS Business case process, under the Business and IM&T governance approaches and hence incorporate IM&T architectural control, the approach to the design and evolution of the mobile solutions in particular are likely to follow modern mobile application design and development approaches.

It will be challenging for the LAS to invest Capital and absorb increased initial Revenue costs associated with the introduction of these additional services, in the desired timescales, so applications will be made to central funds, with the support of our local Digital Roadmap partners to assist the LAS to deliver their part of the digital London U&E Care journey

1.5. BARKING AND DAGENHAM, HAVERING AND REDBRIDGE CCGs

The CCGs' vision for IM&T is:

"To harness, information, integration and innovation to drive the CCGs towards a culture of active IM&T users, enabling efficiencies and excellent patient care across boundaries."

Implicit in this ambition is:

- Accurate, understandable, comprehensive, timely and secure information, appropriately accessible where and when needed for the development and provision of high quality health services;
- Improved adoption and exploitation of technology delivering seamless information enabling users to interact with information and online services using email, telephone calls, text messaging and multimedia, in a consistent and integrated manner
- A progressive information culture that delivers increasing levels of skills, understanding, enthusiasm and innovation in the analysis and use of information to support business and clinical decision-making;
- A cohesive team of customer-focussed IM&T professionals employing acknowledged best practice methods for the delivery of IM&T based solutions.;
- Effective IM&T leadership, governance, policies, standards and architectures that are well communicated, understood;
- Continuously developing the IM&T asset base and support staff, whilst consistently delivering optimum value for money;
- An outward looking IM&T service that exploits initiatives at all levels across the NHS as well as meeting statutory and mandatory requirements;

The intention of the IM&T strategy is to continue the development of IM&T to improve the way medicine is practiced and healthcare is delivered within the Health Economy. Our aim is to provide an environment where the patient is at the centre and empowered to control and interact with clinical information held about them in order to participate in their own care. Information and tools to plan, model, and proactively manage services using data collected during the care process will be further developed and enhanced. Finally, the research and audit agendas will be supported through building on the previous investments in information systems and development of the business intelligence tools.

Critical to the success of this strategy is the acknowledgment that technology-based information and communications are an increasingly important part of all the CCGs' services. Although the responsibility for ensuring that the CCGs get the most from IM&T is led by the Innovation directorate, it requires shared ownership of this strategy and effort and commitment from everyone across the CCGs and partners to achieve a successful implementation.

1.6. LONDON BOROUGH OF HAVERING

A high level summary of the oneSource plans to exploit ICT (Information and Communications Technology) and Digital opportunities to achieve the following outcomes is outlined below:

1. Radical transformation of Councils service delivery models in order to achieve its stated outcomes at dramatically lower costs. This opportunity will be realised by advances in technology, customers connected to the internet and commodity cloud services. It will also come from partnership working with other public or private sector organisations, voluntary groups or oneSource Councils residents and businesses.

2. Increased self-service by residents and businesses where more radical transformation is not possible. This should be accompanied by end-to-end process review and automation wherever it is cost effective to do so.
3. Improved outcomes for local people, place and businesses where affordable within the Council's spending capacity.

It is important to recognise that high quality ICT systems and services alone are no more than an overhead if they are not used effectively. Therefore all of the ICT and Digital developments must be accompanied by people and process change in order to be really effective.

The costs of ICT systems and services generally make up 3-5% of the operating costs of an organisation and so while this document necessarily covers plans to reduce the overhead of running the ICT operations, it also focusses on the greater opportunity which is to improve the efficiency and effectiveness of the 95%+ of the Council's running costs.

Other Related Documents
This summary should be considered in combination with the oneSource Digital Principles Guidance (originally published by oneSource ICT in May 2015) and the annual Service Plans which contain the more detailed annual plans which underpin service plans from all other council departments. At the more detailed level, ICT also maintains PCN (Programme Critical Network) diagrams which show individual project timelines within themes shown as "swim lanes". These diagrams are easy to understand, providing a visual representation of ICT activity at any point in time.

ICT Strategy Content
The following sections break down the major elements of the Council's ICT and Digital activities and describe how they are expected to evolve during the next four years. This term was selected less for ICT reasons, as ICT changes very frequently, but because of the funding cycle associated with local and central government.

It is envisaged that this document will be updated regularly in order to reflect the inevitable changes that will occur in relation to such elements as technological change, demographic/demand change, evolving new delivery models, devolution, the Care Act, shared services and various other possibilities.

On-line Self Service
Over recent years oneSource and the councils have steadily build up the technological capability, the business processes and the marketing and customer awareness to start to move significant volumes of transactions online. This has allowed residents and business users to self-serve reducing the cost to the council while making services available 24/7 from a location of the customers choosing. It is our intention to continue to drive customer contact away from the much more expensive face to face and telephony channels. At the same time we are working with Customer Services and back office services in order to provide healthy challenge to traditional processes and delivery models. Initial priority areas in 2016/17 include high volume transactions such as Newham's Council Tax and Housing Benefits (but only where the transactions are suitable for online self-service).

The technologies used in this area will need to be regularly reviewed as online service presentation must reflect developments in end-user device usage and customer usage patterns. We will therefore be redeveloping the web site to make it "responsive" this means that it will look good and be used on mobile phones and tablet computers of a variety of shapes and sizes as well as on the traditional PC browser. Subsequent development will entail a change of CMS platform, new Portal and upgraded CRM (2016 online).

We will also be enabling Havering smart phone users to report issues to the Council using photos and geographic location information provided by an "App" like interface. This will provide the opportunity for the end-to-end process to be automated and remove all council staff involvement up until the point where a physical activity, such as clearing up graffiti or fly tipping is required. The quality of the user interaction can also be improved with automatic confirmation of receipt of the request, along with service level information and ultimately confirmation that the service has been delivered. Because the contact handling will be automated, 50 or 100 residents alerting the council to an issue such as a dangerous pot-hole will not cause the council any more work than a single request. This will provide a significant

capacity improvement on the current situation where Customer Services staff often have to be involved in each and every customer interaction. Customer service standards should be published online for all services delivered to residents and businesses. Indeed technology should be used to increase the transparency of the organisation with a default position being that all information accessible via an FoI request should be published online.

Business transactions will also continue to be a focus for shifting online and going self-service. As well as reducing costs this will make Newham and Havering better places for businesses to do business with us. These transactions will build on the Havering led work carried out in 2014/15 to introduce a business portal to compliment the resident portal.

Although the focus of this section of the document has been on the Council's customers consuming services via on-line self-service, the same principle is intended for staff (and Havering's elected members through the Members Portal), 1Oracle ERP, the new Intranet and ICT & HR self-service portals as well as a variety of other systems. As we are expecting residents to operate this way, then there is no reason why our staff should not do the same.

All council communications and processes should be reviewed in line with the oneSource Digital Principles in order to maximise channel shift, process automation and improvement. The ICT service will support these reviews as well as any resulting digital transformation improvement opportunities that arise as a result.

Business Intelligence and Performance Management Newham's Data Warehouse & BI Programme and Havering's Corporate Brain Programme

Closely linked to the Channel Shift work is the need to better understand the demand placed on council services based on its current and changing resident and business demographics.

The capability to develop and interrogate this understanding, to ask "what if" questions and conduct predictive analytics as well as see operational performance is being developed under the banner of a programmes called the Data Warehouse & BI / Corporate Brain. In support of this programme the ICT service has built and is iteratively developing the Data Warehouse and a variety of user interfaces including an Intranet search function and GIS capabilities to analyse the data.

The Data Warehouse will be used in conjunction with 1Oracle OBIEE performance management dashboards and reports in order to process and visualise the councils business intelligence and performance management requirements.

Corporate Systems

The 1Oracle ERP (Enterprise Resource Planning) system is the main system used by the Councils for transactional processes and staff self-service (for managers and all employees). The Oracle ERP system is used by many of the biggest and most successful organisations on the planet. It is already used in Havering and Newham (from April 2016) for finance, payroll, procurement, HR, staff-self service, manager self-service and ERP related elements of performance management. In order to get the maximum return on this significant investment, any other systems which perform functions which it is capable of delivering should be decommissioned unless there is a compelling reason not to do so.

The performance management element of the system is capable of carrying out highly complex analysis of council demand and performance, then reporting via dashboards and a variety of report styles. This capability will be developed in conjunction with the Data Warehouse & BI / Corporate Brain activities described above.

Support costs for the system should be minimised through pooling of support arrangements with other boroughs which use the system, improved commercial arrangements and migration to commodity cloud versions when the market has matured sufficiently.

Other corporate systems will be reviewed to determine if they are still required and either decommissioned, functionality migrated into 1Oracle or replaced with an improved solution, preferably a commodity cloud service.

Line of Business Systems

In order to minimise costs associated with line of business systems we will work towards the following principles.

1. Decommission if no longer required.
2. Move the hosting to a commodity cloud / SaaS (Software as a Service) model as soon as it is available at a better total cost of ownership than through current on premise hosting and support arrangements.
3. If a SaaS model is not available, is not cost effective or sufficiently secure and available (based on up-time and response time). Then we will seek to share support costs with other public sector organisations.
4. Consider moving functionality into Dynamics CRM or 1Oracle in order to reduce the number of systems being maintained.
5. Renegotiate contracts to get best value for systems still required.
6. Develop our own solutions if the market is failing and particularly if there is a commercial opportunity to share costs or generate revenue through re-use.

Line of business systems should be integrated with the Data Warehouse in order to improve data quality by linking master data sets for people, businesses and properties and also to allow the data to be analysed through the Data Warehouse in line with requirements developed by the Data Warehouse & BI and Corporate Brain programmes and service specific needs.

Some line of business systems are already effective and cost efficient and will receive relatively little development. In these cases the focus will be on minimising running costs. Other such as Havering's Housing system and Newham's Social Care System are in the process of being replaced and there are significant projects underway to improve effectiveness of the service through the implementation of the new system and associated processes. These are being treated as change management exercises with significant ICT components rather than the other way around. In between are systems such as Havering's Social Care where we are not yet ready to specify a new system due to radical changes to the service requirements evolving caused by the Care Act and the need to work increasingly closely with local health service providers. Each systems development needs are captured and planned for delivery through the applications systems roadmap documentation.

End user devices and experience

Over the last 5 years the use of ICT by staff in their day to day working lives has come a long way. Many more staff now use ICT to improve their productivity and they are generally able to do so using a variety of devices from a variety of office locations, from home or while travelling using mobile devices. The use of the iPad as a companion device to a "hot desk" PC has already enabled a variety of staff and elected members to be more effective and work more flexibly, Windows 10 will be rolled out to newer tablets and laptops with Direct Access in order to enable further mobile working capabilities, this may be complemented by Total Mobile software where field workers require online and offline forms capabilities.

oneSource has used Microsoft Lync telephony, presence and instant messaging along with secure remote access from council laptops and personally owned PCs at home to reduce its office accommodation costs through 3 rounds of "COPS" office space usage transformation programmes in Havering. In Newham the Dockside move was accompanied by Microsoft Lync and Cisco IPT to support its flexible working objectives. The efficiencies enabled by reduction of total office footprint as well as collocating staff for greatest benefit and assisting work/life balance through flexible access to council systems based on location and time will continue. Further office consolidation exercises will be carried out and oneSource shared service arrangements with Newham and Bexley are providing increased demand for mobile and flexible working technologies and interoperability of systems.

The oneSource shared service Councils of Havering, Newham and Bexley will be reviewing end user (desktop and mobile) telephony provision in order to replace the current complexity of Cisco & Microsoft based unified communications in Newham and Havering and Avaya in Bexley..

Mobile working is a key area where services can readily see that they can become more effective and efficient. In order to unlock this opportunity ICT will work continue to work with service areas in order

to provide a variety of device types which are suitable for the needs of the various functions and the staff that perform them.

As well as providing fit for purpose devices, the ICT service will work to ensure the devices are secure and to continuously improve both the ease of use and functionality provided by the software on the devices. For some workers this will simply mean improved access to corporate systems such as email, calendars, ERP and for others it will also involve access to line of business systems. In the latter case some line of business systems already have good mobile working modules, but for others we plan to deploy software solutions which separate the forms and displays used by staff on these systems from the back office systems where the data is processed and stored. This will allow interactions to be simplified and made quicker and easier to use. This will potentially reduce skills levels required so that one council officer could potentially conduct social work, benefits entitlement checks, or other functions in a single visit.

We will review records and document management arrangements in the borough to ensure we only retain the useful data, stay in line with data protection laws and help staff to access the information they need as quickly and easily as possible. This will involve ICT lead activities such as rationalisation of document management systems, use of SharePoint and Yammer in Microsoft 365 and collaborative activities with the councils to replace or upgrade Intranets, implement new retention and archiving policies.

Networks and Telephony

As well as the review and re-provisioning of desktop telephony mentioned above, we will upgrade the Avaya contact centre telephony system used by Customer Services as a temporary measure, leading onto a review of longer term requirements for both Newham and Havering. The expectation is that this will lead to the joint procurement and management of a single commodity cloud contact centre solution if this technology is assessed as being sufficiently mature by 2017 or 2018.

Council in-office wireless systems are in the process of being replaced with newer higher performance solutions which will allow oneSource staff to roam seamlessly across the boroughs (Newham's upgrade is now complete and Havering replacement is in progress).

Data Centres, Hosting & Cloud Computing Services

We will move to consume commodity cloud services progressively over the period of this strategy such that Newham and Havering either no longer need to run their own data centres, or alternatively oneSource may do so on behalf of multiple organisations for those systems and services which do not lend themselves to cloud delivery for security, performance or commercial reasons.

The migration to commodity cloud services will be a continuous process over this period, adopting a vanilla/keep it simple principle to minimise costs arising from solution complexity and bespoke development. The migration should be made seamless and cost effective through partnership working arrangements across London with other local authorities, procurement communities and global strategic suppliers such as Microsoft, Google and Amazon as well as the government solution providers such as Northgate, Capita and Civica. Where the market fails to provide quality products at affordable prices or fails to innovate sufficiently for our needs we will work with others from local and central government to commission or directly develop software solutions which meet our needs.

Data storage capacity will leverage cloud computing services in 2016/17 in order to further improve disaster recovery capabilities and provide greater flexibility as well as improved day to day performance is currently underway. This builds on the oneSource enterprise agreement with Microsoft which will also see Office 365 being used later in 2016/17 for cloud hosting of eMail, day-to-day document storage and access to the latest Microsoft Office products and services including SharePoint and Yammer, Word and Excel as well as services new to oneSource such as Delve. This will be a hybrid design which provides the best of cloud and on premise full client deployments to maximise flexibility, performance and availability.

Social Inclusion

Just as internal council systems are ineffective if staff do not have the skills, devices or connectivity required to access them, this is also the case for our residents. If residents and local business users do not have the knowledge, skills, devices or connectivity required then we will not be as effective in

channel shifting customer contact as we would wish. Although we have already made a great start in shifting transactions and have been more successful in getting older people online than many people anticipated we know there are areas where is a significant gap in capabilities of our residents and businesses to go online and benefit not just from online access to our services, but to online shopping (and savings), job and commercial opportunities, social contact and various other benefits. We are therefore working to better understand where these gaps exist and what these groups need to get online (either themselves or via friends, family or community groups). Our initial priority area identified is council housing tenants where we are working up proposals to help get them online by addressing the missing ingredients, be they devices, connectivity, skills, awareness or desire.

1.7. LONDON BOROUGH OF BARKING AND DAGENHAM

The 'digital revolution' that began in the late 1990's has been transforming the way that many people live their lives; from the way we buy goods and services to the way that we share information, communicate and connect with others. This revolution also presents a major opportunity for local authorities to redesign public services through the adoption of new and emerging technologies, in a way that meets the needs of customers while saving money. To get to this point, however, challenges also exist. Public expectations of what local authorities can deliver through technology are increasing while resources are heading in the opposite direction. There is also a digital skills gap to address, not just in some parts of the community, but also within the workforce.

In spite of these challenges, the digital revolution will continue to transform society and is will deliver greater change within the next 5 years that seen within the last 25. In this age of expectation and rapid digital change the council needs to deliver services that are modern, inexpensive and efficient, and in a way that is inclusive of all our residents.

With the population of the borough increasing, with added demand for council services, the development of digital services is will play a key role in helping to manage demand for our services while meeting evolving customer expectations.

Why do we need a digital strategy?
We need a digital strategy because digital technology has the potential to transform the borough and the lives of residents while generating long-term savings.

Digital delivery of many of our services has been our ambition for some time and we are already responding to this challenge through the launch of our digital customer platform in 2011, when became one of the first councils in the country to provide comprehensive online services for council tax, housing benefit and rents.

This digital strategy sets out the council's approach to the required changes and sets out a clear vision in which we will:

- Provide transactional services, information and data online in a user-friendly and inclusive way that meet the needs of our residents and customers;
- Use technology to change the way traditional face-to-face services are delivered, so enabling us to deliver more effective and efficient services;
- Create a more digital workforce which is agile, mobile and using the most appropriate technologies to support service delivery;
- Enable our residents to use digital technology and enable access to technology for those that do not have it;
- Use digital technology to work and collaborate with our partners, including the effective use of open data;

There is clearly demand for digital council services; a 2012 customer satisfaction survey found that over 55% of customers would use online services if the Council made them simple to use. By December 2014 this figure had risen to 76%.

The approach this strategy outlines will meet this demand while supporting the council's priorities and enable us to realise our ambition of growing the borough.

Our digital vision - making Barking and Dagenham digital
The Digital Strategy outlines our vision for making the borough digital and our approach for realising this.

We have four key priority areas:

1. **Digital Place**
2. **Digital Customer services**
3. **Digital Workforce**
4. **Digital Partnerships**

The Digital Strategy outlines what our vision is for each priority area, where we are now and how we will achieve our vision, looking at some of the key projects within the priority areas. It also includes the principles that we will use to focus our investment and guide our work using technology.

Our key priorities

Digital place
Enabling residents and businesses with the digital skills and technology they need to enhance their lives.
This means enabling residents and businesses in the borough to use digital technology to improve their lives, providing them with access to devices and the internet as well as developing their digital skills, from the children and young people in our schools to our elderly residents.

Digital customer services
Enabling our residents and customers to get the services and information they need through digital services.
This means providing services and information to residents that meet the needs of our customers in a user friendly way.

Digital workforce
Staff will have the digital tools and skills required to deliver services effectively and efficiently.
This means delivering positive outcomes for our residents by giving staff access to the data they need and the best available technology, ensuring they have the skills to use it effectively.

Digital partnerships
Digital technology will enable the council and its partners to tackle complex issues and work together seamlessly.
This means using digital technology to work with our partners to deliver the outcomes we both desire and incorporates aspects of Digital Customer Service, Digital Workforce and Digital Place.

Digital Place
What is our vision?
"Supporting residents and businesses to access the digital skills and technologies they need to lead their lives."

Our residents and businesses will be able to quickly and easily access digital technology will have access to the digital skills required to improve their lives from an early age. We will increasingly be recognised as a digital authority, gaining a reputation as a council that delivers modern, accessible services in digital ways.

Communities, businesses and our partners in the borough will work with the council to design and develop digital solutions to for all to use.

Where are we now?

Internet access across the borough is rising steadily, but there are still those who do not use or access the internet. There is free internet in libraries and internet kiosks and wireless in a handful of locations.

How will we achieve our vision?
We will work to support the delivery of digital skills classes to residents and businesses through our adult community learning and voluntary sector partners.

We will encourage the use of digital technology and internet access across the borough.

Support residents and businesses to access ultra-fast broadband connections and capitalise upon opportunities provided by them.

We will encourage third party platforms, including social media and peer to peer networks, for residents and groups to raise issues and draw support for local initiatives.

Digital customer services
Residents and businesses will be able to access our transactional services 24 hours a day, from any device. Our automated services, those online and over the telephone will be designed to meet the needs of all our customers.

By 2020:

- Those council services that can be made available through digital means will have been made available digitally;
- 80% of day to day transactions will be carried out online or through automated telephony;
- The Council website will be the place that local people, businesses and the voluntary sector "meet" to do their business;
- The Council website will be the main source of information and open data for residents and businesses;
- More complex transactions and engagements will be delivered, in part, through digital means

Where are we now?
More than 1 in every 2 households has signed up for a council MyAccount allowing 50,000 residents to self-serve for Council Tax, housing benefits and rents. The council website uses fully responsive design so it can be viewed on any device, from a mobile phone, tablet to laptop.

What next?
By 2016, we will add many more popular services to MyAccount including bookings, housing repairs and applications and a new Report It function. In all during 2015 a total of 8 new online services will be made available for customers, supporting how people can interact with the Council and transforming of a range of important council services.

By 2016 we will have a greater understanding of our customers together with a new suite of tools to allow us to personalise the online experience, while a further module will add greatly to our ability to work with important local partners such as the third sector and health services.

Digital Workforce
Council staff and elected members will have access to a range of devices and digital platforms and the appropriate skills, to allow them to work remotely while delivering a high level of service and community engagement.

What is our vision?
"Staff will have the digital tools and skills they need to deliver services effectively and efficiently."

Staff will have access to the devices and systems they need to deliver the modern services to our residents, and will be equipped with the skills to use them. Our workforce and councillors will be enabled to work in a mobile and flexible way.

All council services will actively identify opportunities to work digitally as part of the service planning process. The Council will engage with residents in helping them to use, test and design our digital solutions.

We will continue to handle our resident's personal data safety and we will be clear with everyone how we will use their data. Data from our partners will be as accessible and secure as council data while identification verification will be as simple and straightforward via our MyAcccount. We will use this data to help us in our service planning and policy development.

Where are we now?
We are involving our staff in the development of our digital services and are asking for their ideas and suggestions. Where possible all staff will have access to email and digital ways of mobile working.

How will we achieve our vision?
Delivering digitally will become a central consideration in all our service planning and policy development.

Our Ambition 2020 programme will review and lead on the delivery of digital technology across the council.

The technology our workforce uses will more closely reflect that currently being used successfully in private sector organisations, such as smart technology.

Through our workforce we will continue to be a digital test bed, working with our partners to develop and pilot new digital technologies and approaches to delivering services.

Our communication with colleagues and partners will extend beyond e-mail and telephone, using face-time technologies. We will increasingly use our intranet and website to keep work colleagues up to date and informed, with access to the resources they need.

We will ensure that our workforce are given the proper training to deliver services digitally through core digital skills training, supplemented with specialised training where required.

Digital Collaboration
What is our vision?
“Digital technology will enable the council and its partners to tackle complex issues and work together to deliver services to residents”

We will streamline data sharing processes to facilitate simple and secure data sharing with our partners where agreed and appropriate, allowing for a far better picture of multi-disciplinary issues. We will work with our partners in an integrated way, enabling us to work together to identify solutions to issues, provide efficient and effective services and develop well-informed organisational strategies. We will be recognised as an open and transparent council and will publish much of our information and data.

Digital collaboration will extend to the technology we use. We will work with partners to develop and procure established technology for Islington rather than developing new solutions ourselves, ensuring we get the best value for money. In addition to this, the technology in place at the council and our partner organisations will mean that meetings and collaborative working can take place anytime and anywhere.

We will explore commercial opportunities to collaborate with private sector organisations, for example working with utilities companies to harness the use of smart meters for other in-home resident opportunities.

Where are we now?
We have well-established partnerships in place with other public bodies including: the Police, Job Centre Plus and the NHS. Despite the strong partnerships that exist, the potential to harness digital technologies to make them more effective is significant.

Data processes within the council and between partners can be onerous (partly to ensure compliance with data protection legislation) but there are extensive opportunities around accessing data and transforming it into business intelligence which we are yet to capitalise upon.

Many technological solutions are developed 'in-house' rather than sharing or procuring technology with our partners to save money and use established technology.

How will we achieve our vision?
Open non-sensitive data up to our partners and stimulate the innovative use of this data through the organisation of events such as 'hack days'.

Maintain secure systems of internal and external governance of data sharing and storage despite increasing accessibility of non-sensitive data.

Work with other public sector bodies to identify areas to share best practice and increase cross-borough sharing and procurement of technology solutions.

Explore opportunities for collaboration with private sector organisations such as utility companies and technology firms.

Develop an information management strategy which outlines how we plan to: manage data and transform it into business intelligence, protect it appropriately and make it available to partners and the public where relevant.

Communication with our partners will expand to encompass video conferencing, instant messaging and improved data sharing.

Delivering our vision

Our design principles (Gov.uk digital design principles)

- insight – all decisions will be informed by intelligence
- digital take up (channel shift) - by 2020, 80% of transactions will be carried out online.
- user engagement – we will test ideas and services
- digital tools – we will use those products and services that meet the needs of our customers and staff
- innovation – with our partner, Agilisys, we will pilot and test new products and services
- open data – we will publish and share our data
- usability – our products and services will meet the needs of end users

Our delivery principles

- commercial collaboration
- community collaboration
- shared intelligence / best practice
- business case based
- meets end user needs / meets service needs

Governance principles

- Demand management (internal / external)
- Alignment with Council priorities

Our journey in numbers

52,000 MyAccounts registered
315% = the increase in the use of our automated voice recognition telephony from last year
190% = the increase in the use of our webchat from last year
2098 = the number of new customers registering for MyAccount in June 2015

1.8. LONDON BOROUGH OF REDBRIDGE

A digital strategy is needed to transform the borough through digital technology, focusing on:

- Using technology as a tool to innovate and become a digitally driven organisation through adopting smarter more efficient working practices;
- Improving the experiences of the Council's customers (which in many cases will be different) and ensuring that they will be able to access information and services themselves without relying on the Council, enabling us to deliver more effective and efficient services
- Embracing a range of models for service delivery and / or to support service delivery;

Following the technology review – we have started work on the existing equipment & tools staff currently use and are considering a range of options that will provide a much improved user experience.

- Paperless Redbridge' in addition to the EDMS project, we will be looking at a number of other ways to make Redbridge paper free including 'dump it' days and a refreshed clear desk policy
- looking at introducing Change Management framework and comprehensive training programme that supports Managers and Staff in new ways of working
- tender documentation for telephony modernisation and unified communications tender (includes new mobile contracts, instant messaging etc.)
- under Paperless Redbridge Programme – we will be issuing a tender for a supplier to digitalise paper within Children Services and Planning & Regeneration
- working with a specialist on options for the removal of Data Centre when the building is closed in March 2017
- working on the removal of back office Cashiers and Post Room at when building closes in March 2017
- to support and enable smarter ways of working by: providing access from anywhere; providing one device, one number; become digital by default; facilitating online collaboration and sharing of information.

The Smarter Ways of Working (SWoW) Programme

The programme will be a new way of working for everyone and is guided by the principles below:

- work takes place at the most effective locations and at the most effective times, respecting the needs of the task, the customer, the individual and the team
- simplified collaboration and connectivity virtually everywhere means sharing information and working with others regardless of location
- space is allocated to activities, not individuals and not on the basis of seniority
- a flexibility first approach is the norm rather than the exception
- everyone is assumed to be capable of smart working without assumptions being made about people or roles
- a shared and agreed approach to smart working balances the freedom to choose with the responsibility to meet the organisational needs
- the processes people are asked to work with are continuously challenged to make sure they change as the roles do
- managing performance focuses on results and outcomes rather than presence

Customer Access Programme (CAP) Digital

The aims of the CAP programme:

- The CAP Digital work stream (part of the wider **CAP**) aims to ensure our services are Digital by Design so customers can self-serve 24 hours a day, seven days a week.

- Customers will be able to:
- Book appointments online, for example births and marriage notices and bulky waste collections.
- Make payments online, thus reducing the need for cheques and paper-based Direct Debits for rent payments.
- Apply for services online including completing online assessments,
- Report issues to the Council more efficiently via improved Report It forms with drop down lists, mandatory fields, and a reduction in free text fields and improved automated email responses.
- Make appeals online via a parking appeals form.
- Make complaints online via a single form for all services
- Complete consultations online
- Get answers to common questions through meaningful answers to frequently asked questions (FAQs)
- Better manage their appointments with the Council via automated reminder emails to reduce the number of missed appointments
- Better manage their contact with the Council via improved online forms

What's happening now?

- **Parking services:** apply for permits and make challenges online
- **Cleansing:** booking forms for bulky waste, missed recycling and improvements to Report It forms
- **Registrars:** online registrations for births, death and marriages, booking Citizenship Ceremonies online,
- **Planning and Building Control:** requirements gathering
- **Housing:** initial discussions to take place
- **Adult Social Services:** online referral to make a request to Redbridge Adult Social Services, online referral forms to Redbridge First Response Service (provides access to preventative, low-level information, advice and support).

Who's in scope of this project?

The CAP Programme is looking at all customer-facing services. Our primary focus is on the top 10 services in the Council with the highest volume of contact:

- Council Tax
- Housing Benefits
- Parking Services
- Housing Needs and Advice, Income Recovery and Housing Service Charge
- Adult Social Services
- Cleansing Services
- Building Control
- Planning/Development Management
- Registration Services
- Business Rates

We are also working to understand more about the various advice functions offered by our partners across the community so that where we can we are able to offer an integrated approach to serve all our customers' needs.

Adults Social Services and Public Health Transformation

Background
Nationally, there is growing attention on a number of issues relating to the long term sustainability of Adult Social Services, which is increasingly focusing on the NHS and the Local Authority working closer

together. The implementation of the Care Act 2014 also drives changes across the health and social care economy.

The government agenda both now and in the future will be for the NHS and local authorities to work in a way that improves outcomes for service users/patients and residents.
In addition to this, Redbridge Council is also facing its own significant challenge as it seeks to meet a savings target of £70 million over the next three years.

Integrated Health and Adult Social Care Service (HASS)
Managed by a Section 75 partnership agreement bringing together:

- ASS provider, assessment and early intervention services
- Existing Partnerships including mental health and learning disability
- NELFT and adult social care staff within the new Community Health and Social Care Services (CHSCS)

A joint health and adult social care team means services are more responsive to the whole needs of the individual thus providing a more person-centred service.

From the 1st April 2016 the agreed workaround for accessing systems is to continue to use both CareFirst and RiO until an agreed integration solution can be implemented.

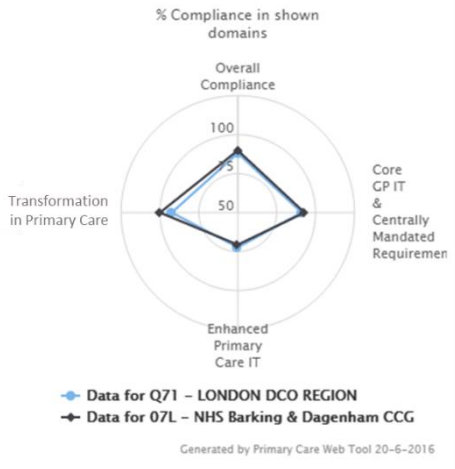
ANNEX 2 – Digital Maturity Assessments and Trajectories

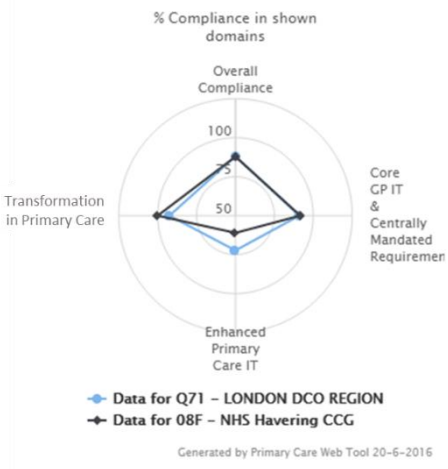
2015/16 Digital Maturity Assessment (DMA) results for NHS healthcare providers:

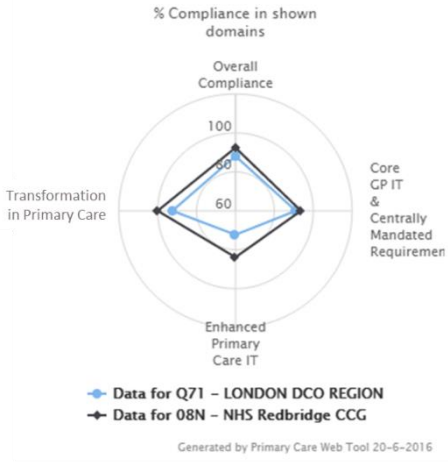
Question	National (Dataset)	BHRUT	NELFT	LAS
Strategic Alignment	76%	70%	90%	31%
Leadership	77%	65%	80%	15%
Resourcing	66%	20%	85%	25%
Governance	74%	45%	90%	30%
Information Governance	73%	67%	92%	67%
Records, Assessments & Plans	44%	0%	61%	18%
Transfers Of Care	48%	43%	43%	10%
Orders & Results Management	55%	35%	48%	0%
Medicines Management & Optimisation	30%	17%	30%	6%
Decision Support	36%	22%	44%	19%
Remote & Assistive Care	32%	17%	58%	13%
Asset & Resource Optimisation	42%	35%	65%	45%
Standards	41%	20%	67%	5%
Enabling Infrastructure	68%	41%	91%	53%

Primary Care Digital Maturity

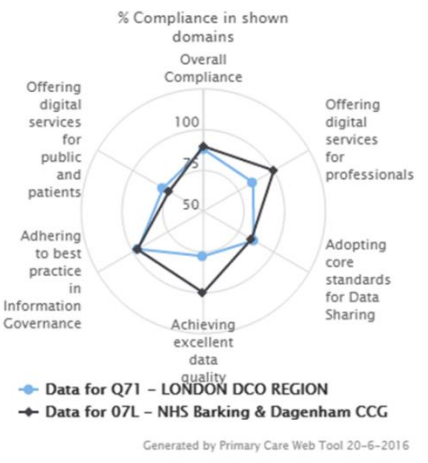
The digital maturity of primary care is generally better than the average for the London region, and is reflected by our existing achievements, both in the move to digital practices and towards interoperable systems. Our digital readiness also puts BHR in a favourable position in delivering digital transformation.

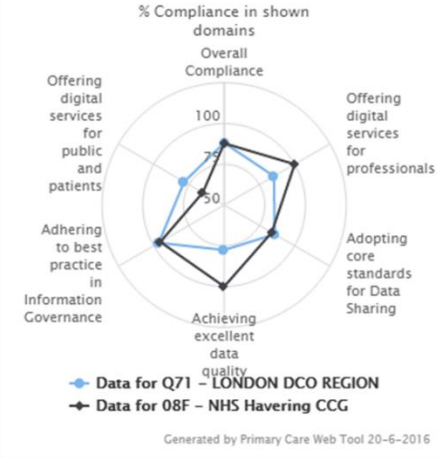


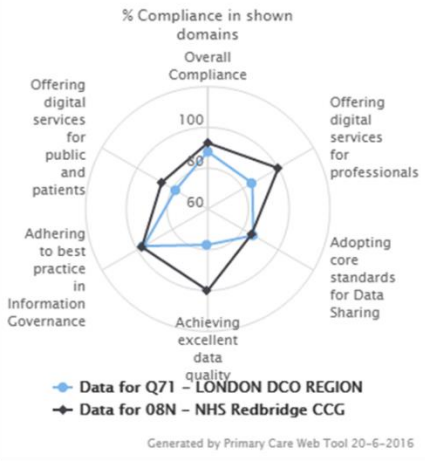




5 High Impact Changes for Digital Readiness

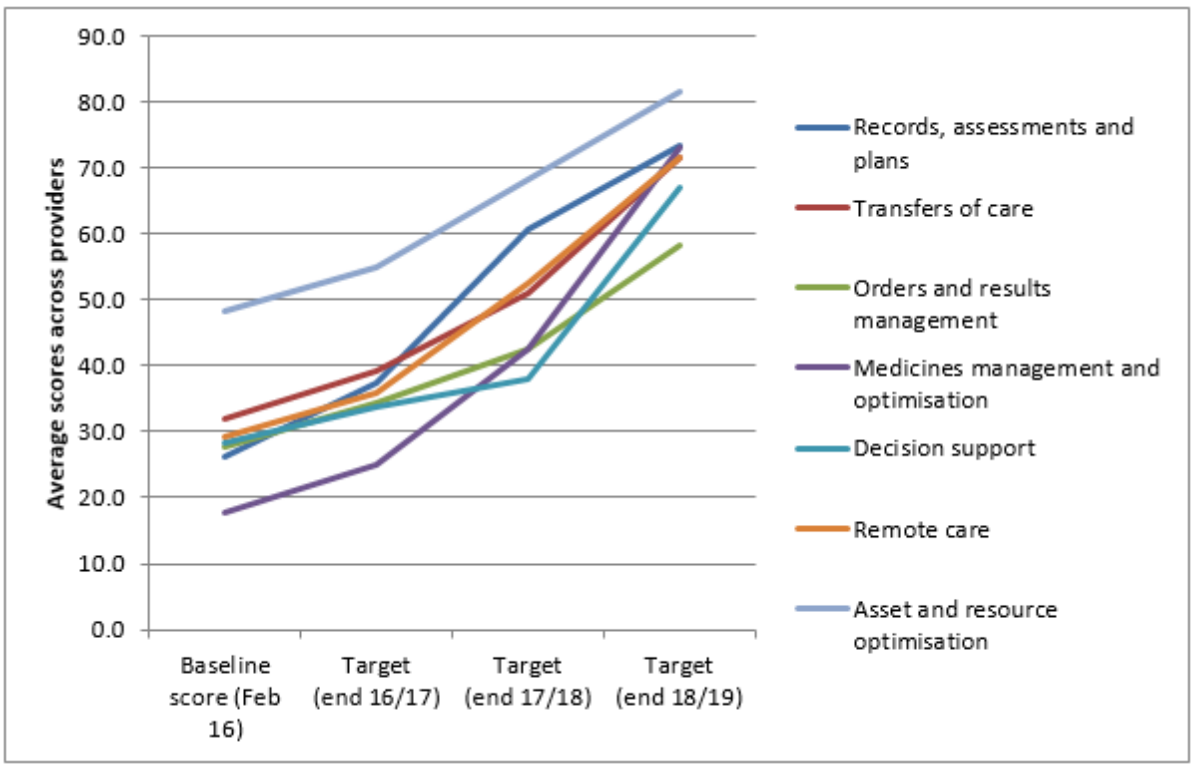






Three Year Trajectory

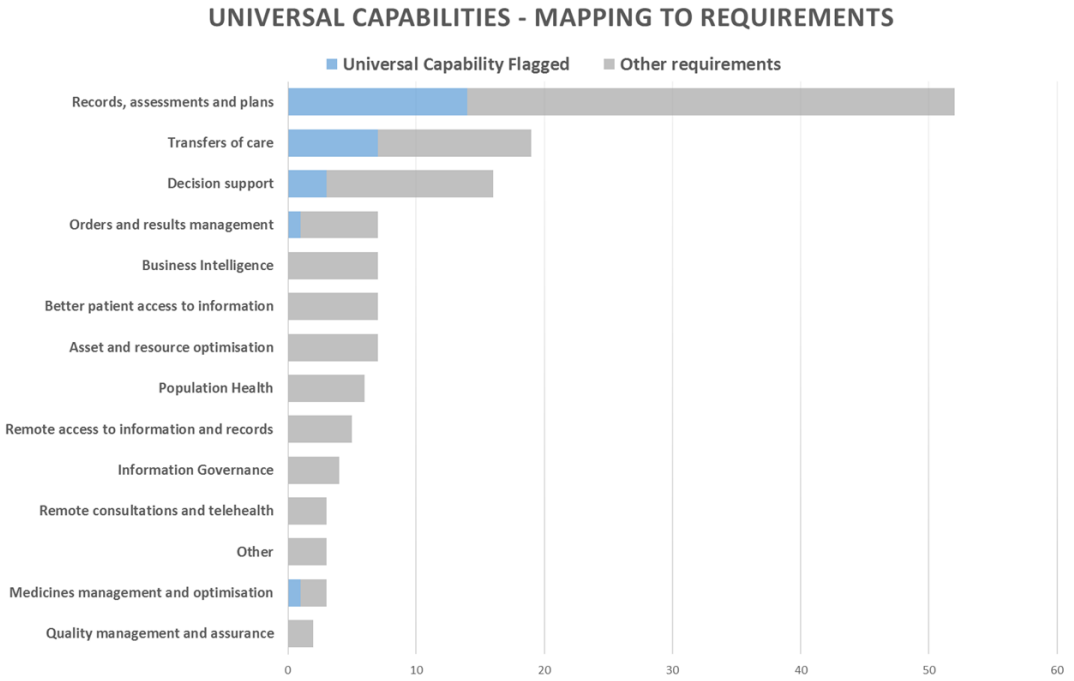
The DMA for BHRUT, NELFT and LAS have been entered into the NHSE Capability Trajectory model which has produced the below aggregate projections for local healthcare providers against the capability groups. Results can be found in the attached document, Annex 2 – Capability Trajectory BHR.



The increase in digital maturity is a result of both organisational and system wide capability delivery, as well increasing digital literacy of patients and professionals, and will take BHR towards digital excellence.

ANNEX 3 – Prioritising Requirements and Capabilities

Requirements that have been captured as part of the development of the LDR have been mapped to capability groups, in line with those of the Universal Capabilities. The figure below shows the extent of overlap between the Universal Capabilities and additional requirements identified locally.



Each single capability group has a mixed priority and complexity with varying breadth of the requirements, for example, there were a significant number of requirements within the records, assessments and plans group, as expected, and fewer requirements relating to medicines management and optimisation.

Prioritisation of requirements and digital capabilities was based on stakeholder feedback in interviews and workshops. Both priority and complexity were summarised under following criteria:
Priority:

- Is this a universal capability?
- Is this an organisational priority?
- Does this drive high benefits (Quality, Efficiency, and Health & Wellbeing)?

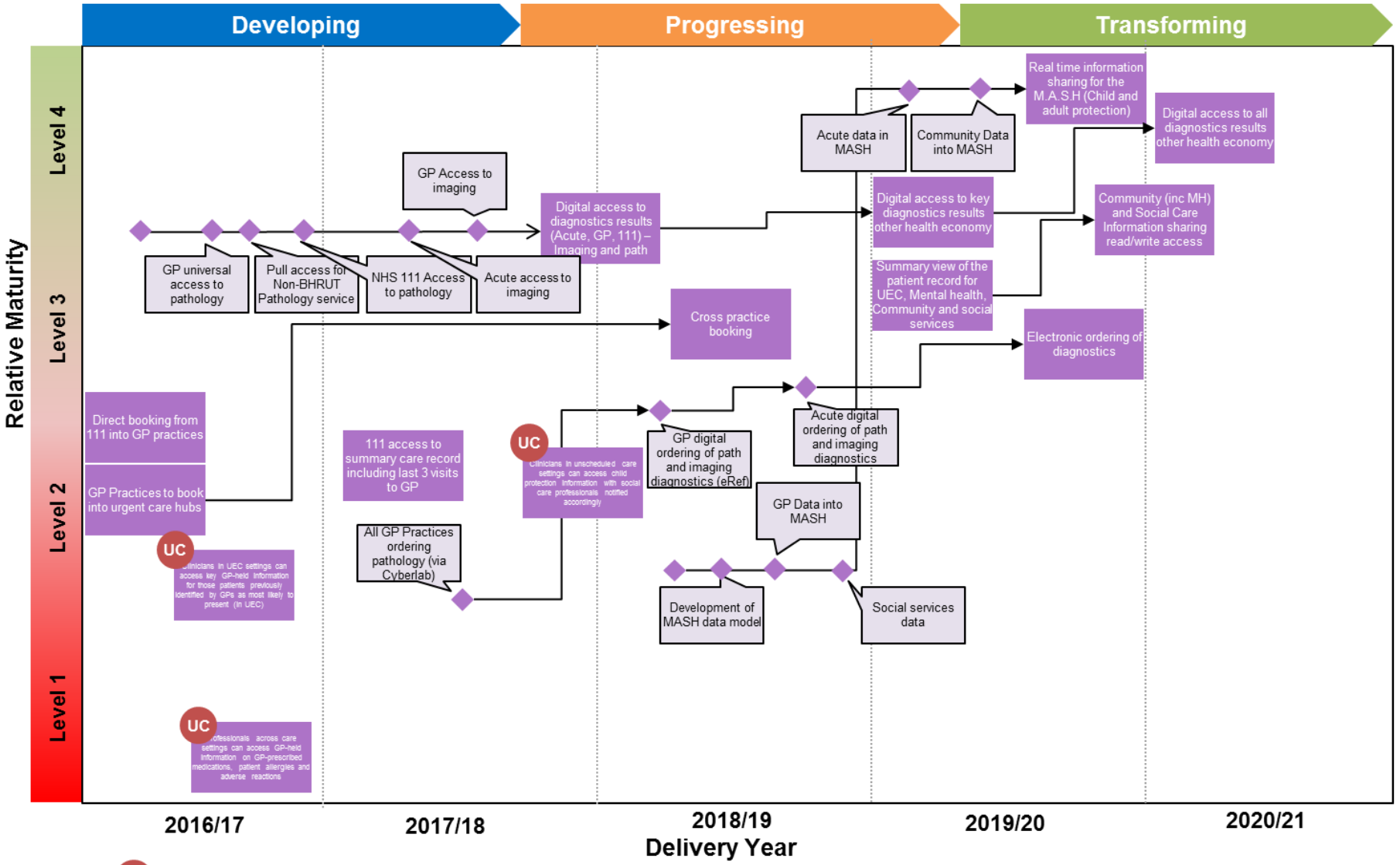
Complexity:

- What is the level of maturity across systems and infrastructure, culture and process, links to existing programmes?
- How many systems are involved?
- Are there legal or IG considerations?

The capability deployment plan then underwent a number of iterations with technical advisors based on what technologies were readily available, which solutions may take a number of years to develop, and which were already being developed on a pan-London basis.

Planned and urgent care

ANNEX 4 – Capability Deployment Plans



Key:

UC **Universal Capabilities**

HLP **Healthy London Partnership**

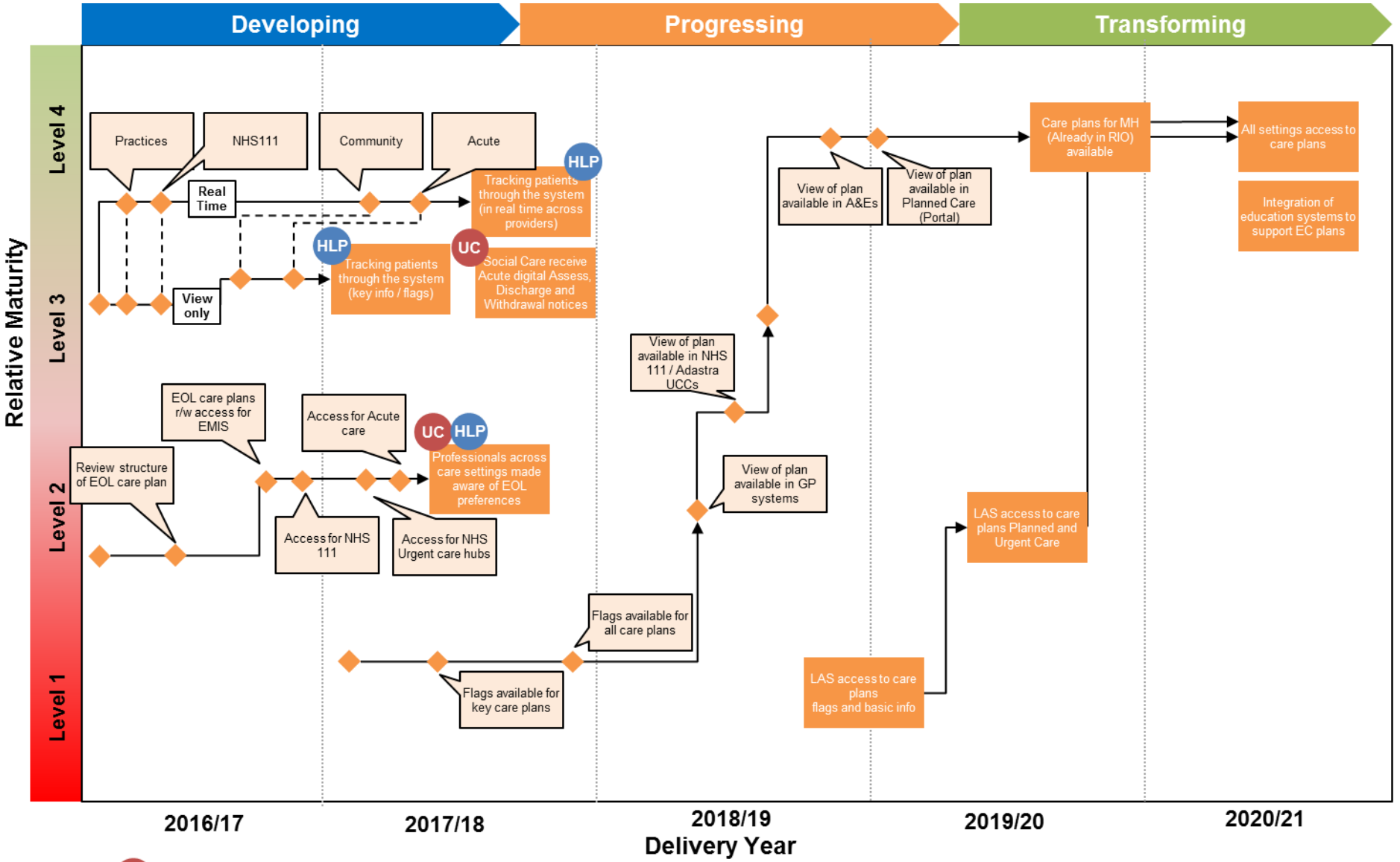
Level 1: Paperless and basic connectivity in place

Level 2 : Electronic services with developing interoperability

Level 3 : Digitised information with developing decision support, established interoperability

Level 4 : Digital, real-time and seamless

Co-ordinated care



Key:

UC **Universal Capabilities**

HLP **Healthy London Partnership**

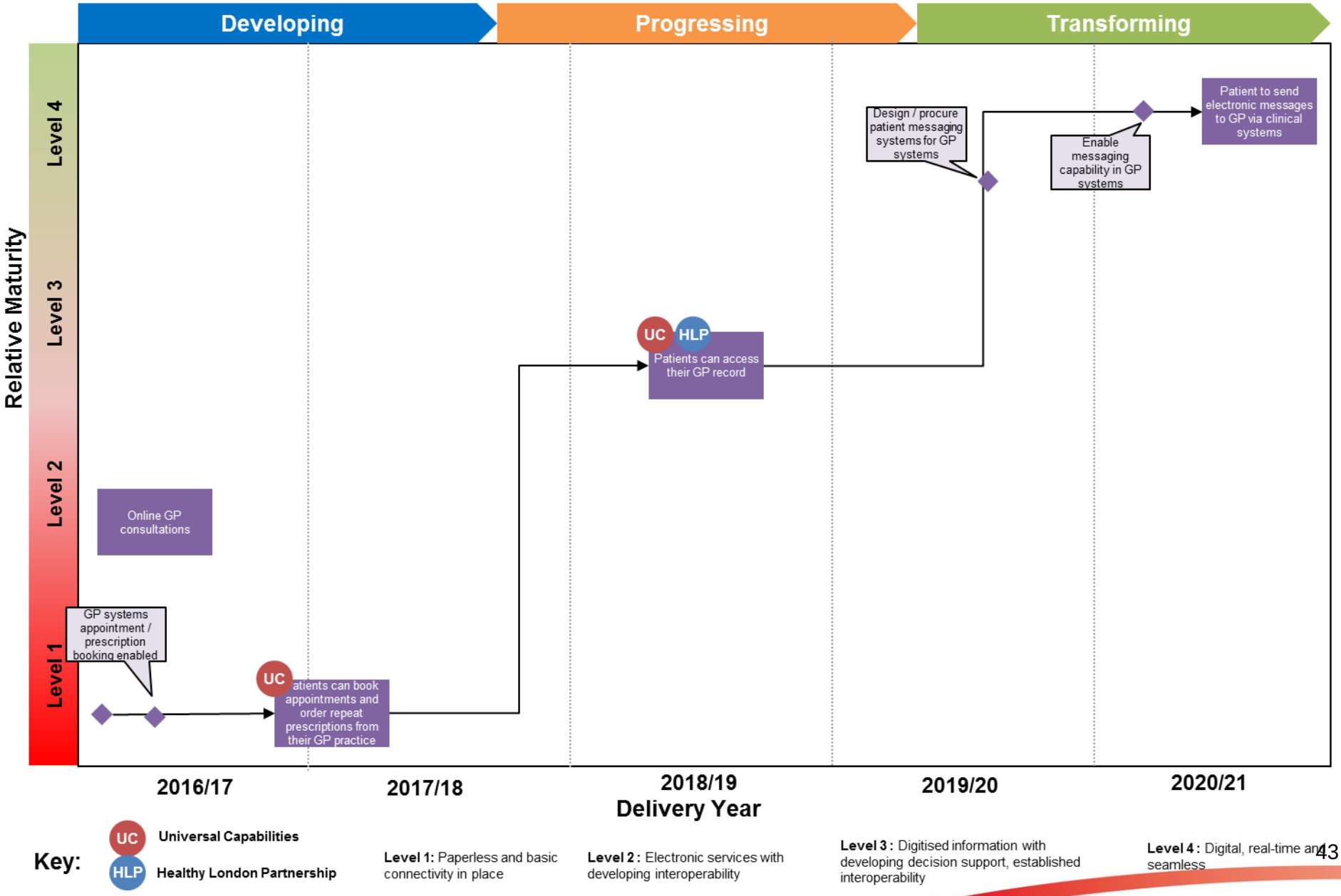
Level 1: Paperless and basic connectivity in place

Level 2 : Electronic services with developing interoperability

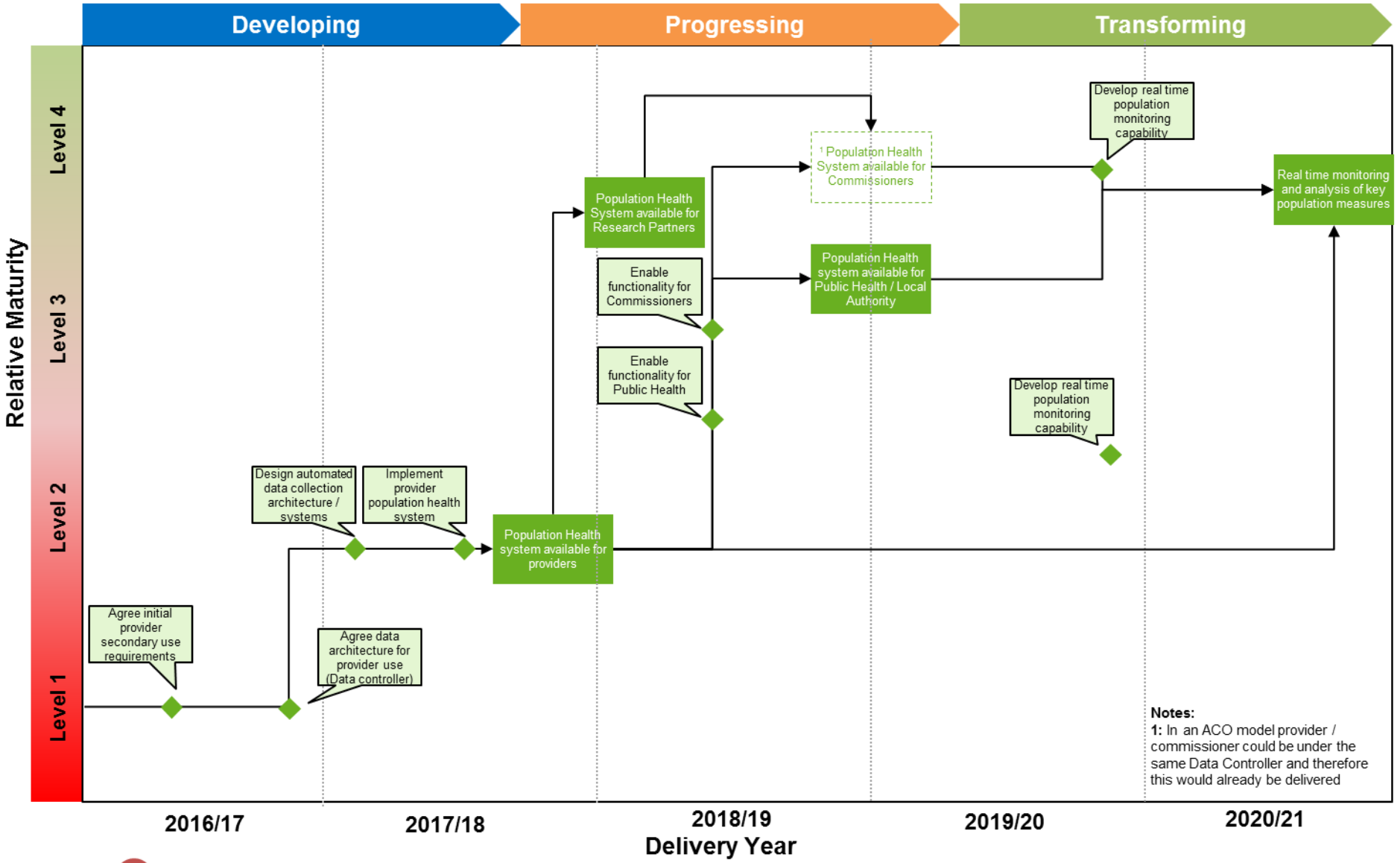
Level 3 : Digitised information with developing decision support, established interoperability

Level 4 : Digital, real-time and seamless

Channel shift



Population health and advanced analytics



Key:

UC **Universal Capabilities**

HLP **Healthy London Partnership**

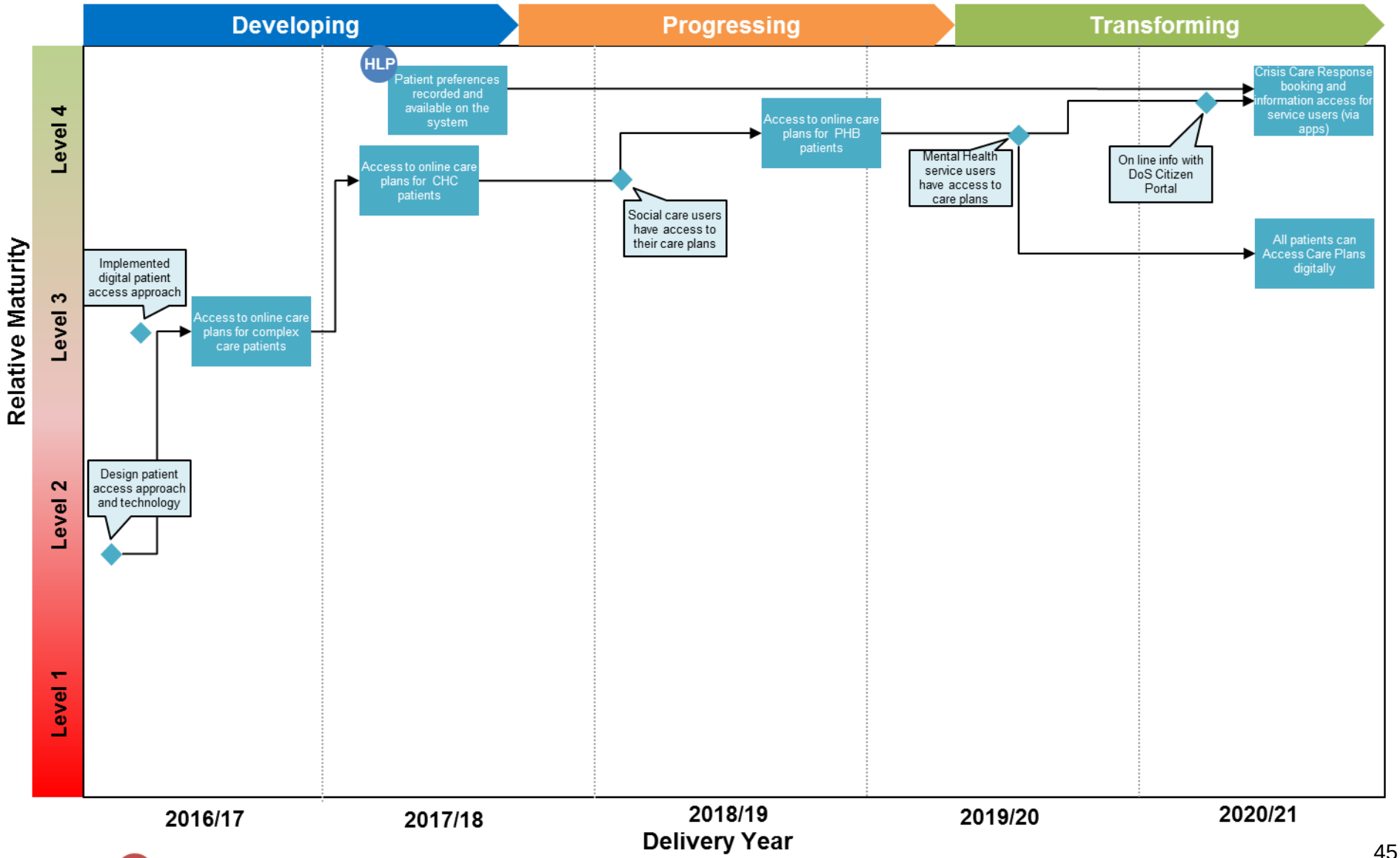
Level 1: Paperless and basic connectivity in place

Level 2 : Electronic services with developing interoperability

Level 3 : Digitised information with developing decision support, established interoperability

Level 4 : Digital, real-time and seamless

Self care and personalisation



Key:

UC **Universal Capabilities**

HLP **Healthy London Partnership**

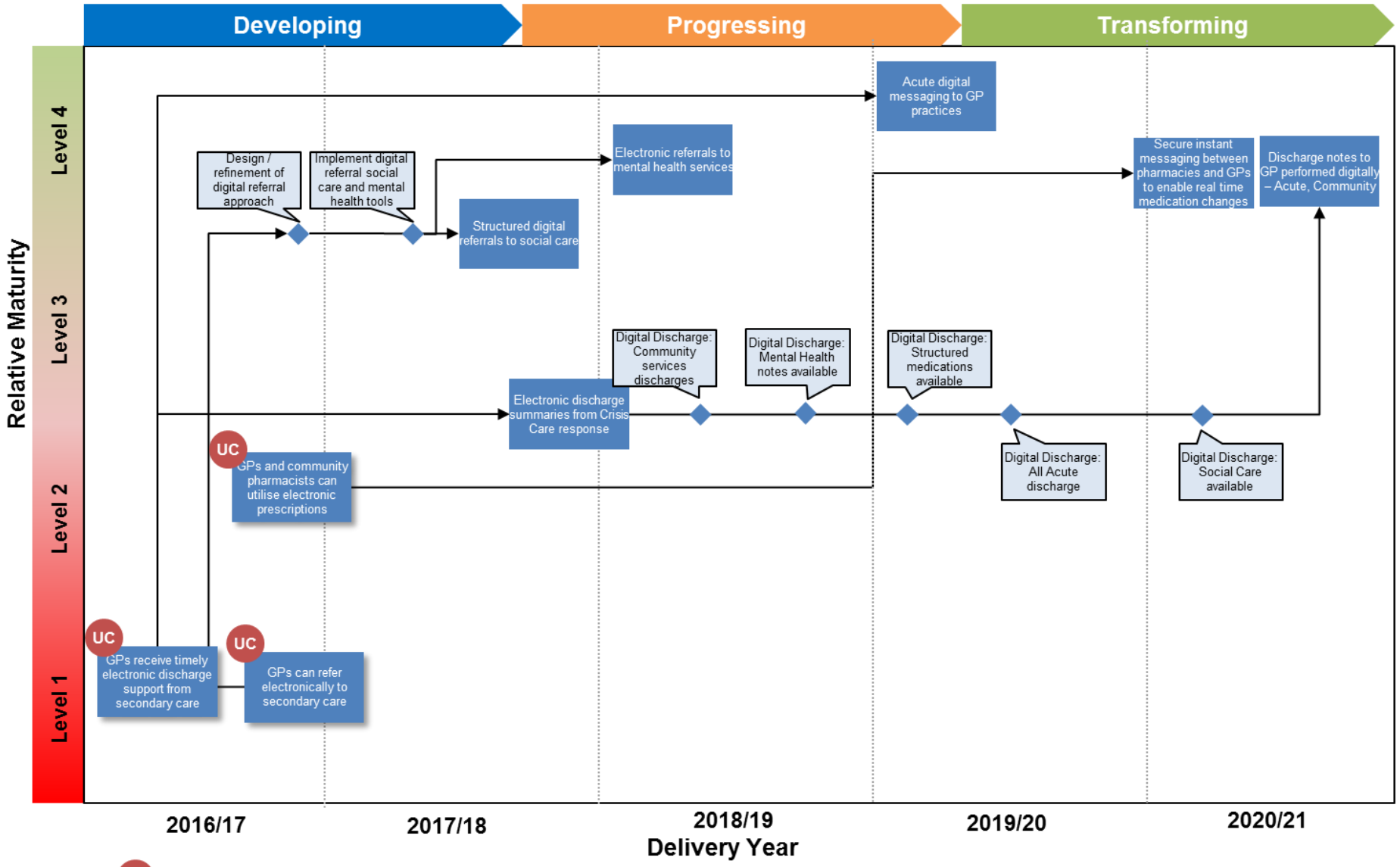
Level 1: Paperless and basic connectivity in place

Level 2 : Electronic services with developing interoperability

Level 3 : Digitised information with developing decision support, established interoperability

Level 4 : Digital, real-time and seamless

Paperless



Key:

UC **Universal Capabilities**

HLP **Healthy London Partnership**

Level 1: Paperless and basic connectivity in place

Level 2 : Electronic services with developing interoperability

Level 3 : Digitised information with developing decision support, established interoperability

Level 4 : Digital, real-time and seamless

NHSE template for Capability Deployment

Annex 4 – Capability Deployment Schedule attached.

ANNEX 5 – Universal Capabilities Delivery Plan

NHSE template for universal capabilities delivery plan

Annex 5 – Universal Capabilities Delivery Attached

ANNEX 6 – Finance Requirements

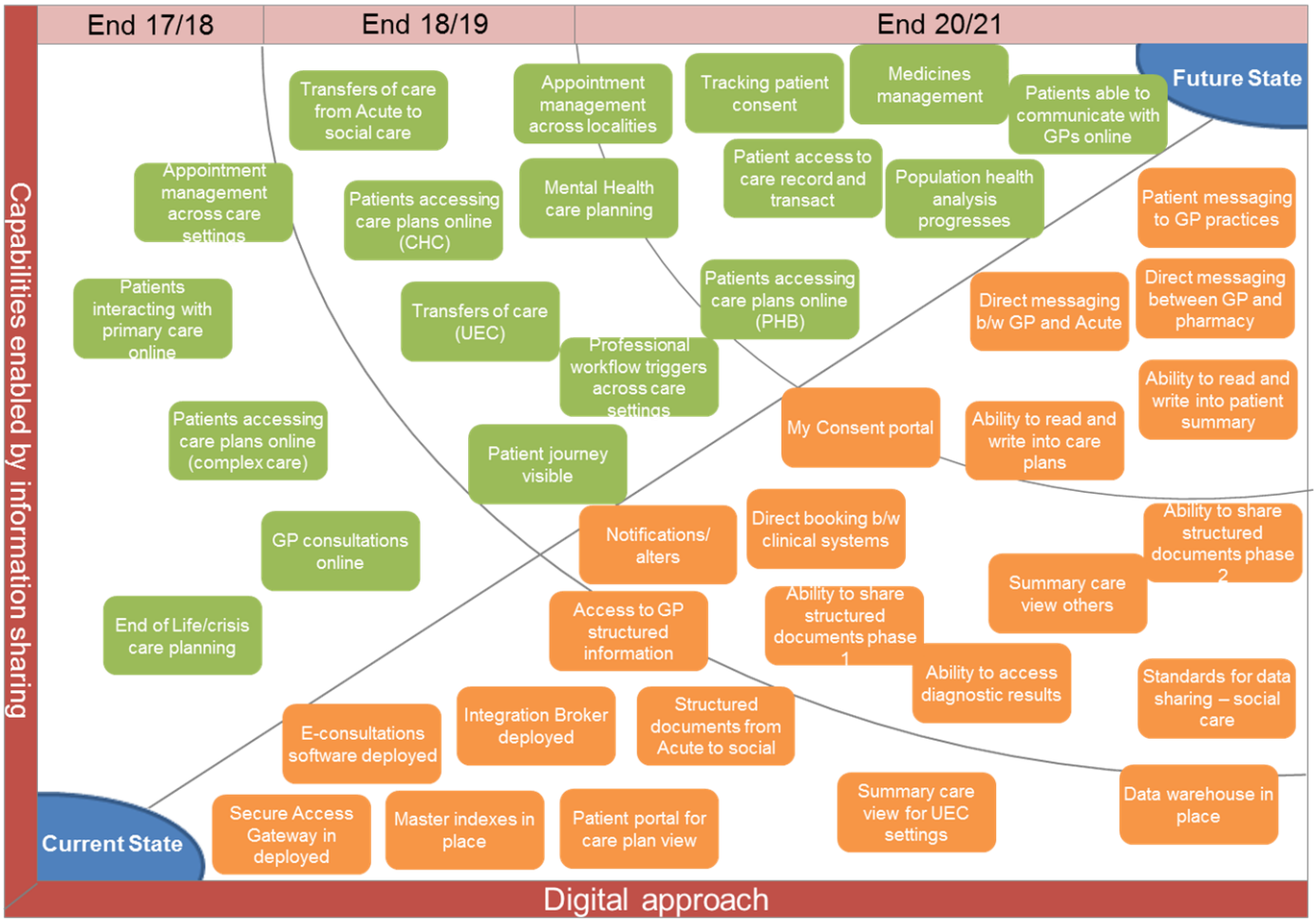
The table below shows the dependency on core technologies and core teams for each of the capabilities. Along with core programme, each scheme has additional costs associated with delivery, shown on the far right of the table, along with estimated savings.

LDR Theme	Capability	Timeframe	Secure Access Gateway	Citizen Portal	My Consent	My Condition	My Care Plan	Common Care Record	Master Index	Integration broker	Data Warehouse	Governance	PMO	Core Development Team	Business Change	IG / IS	Addition Scheme Cost (£000s)	Estimated savings (£000s)
Planned and Urgent Care	GP Practices to book into urgent care hubs	2016/17	X							X		X	X	X	X	X	2,180	6,639
	111 and BHR OOG direct booking into GP practices	2016/17	X						X	X								
	Clinicians in UEC settings can access key GP-held information for those patients previously identified by GPs as most likely to present (in UEC)	2016/17	X		X		X	X	X	X								
	Professionals across care settings can access GP-held information on GP-prescribed medications, patient allergies and adverse reactions	2016/17	X		X		X	X	X	X								
	111 and BHR OOH access to summary care record including last 3 visits to GP	2017/18	X		X		X	X	X	X								
	Clinicians in unscheduled care settings can access child protection information with social care professionals notified accordingly	2018/19	X					X	X	X								
	Cross practice booking	2018/19	X						X	X								
	Digital access to diagnostics results (Acute, GP, OOH) – Imaging and path	2018/19	X				X		X	X	X							
	Real time information sharing for the M.A.S.H (Child and adult protection)	2019/20	X					X	X	X	X							
	Community (inc MH) and Social Care Information sharing read/write access	2019/20	X					X		X								
	Digital access to all diagnostics results other health economy	2020/21	X		X	X	X	X	X	X	X							
Co-ordinated Care and care planning	Tracking patients through the system (key info/flags)	2017/18	X		X	X	X		X	X	X	X	X	X	X	X	3,280	419
	Tracking patients through the system (in real time	2017/18	X		X	X	X		X	X	X							
	Professionals across care settings made aware of EOL	2017/18	X		X		X		X	X	X							
	Social Care receive Acute digital Assess, Discharge and Withdrawal notices	2018/19	X				X	X	X	X								
	LAS access to care plans flags and basic info	2019/20	X				X	X	X	X								
	LAS access to care plans (Planned and Urgent Care)	2019/20	X				X	X	X	X								
	Care plans for MH available	2019/20	X		X		X	X	X	X	X							
	LAS access to care plans	2020/21	X				X	X	X	X								
	Integration of education systems to support EC plans	2020/21	X				X											
Channel Shift	Online GP appointments	2016/17	X	X					X	X		X	X	X	X	X	860	810
	Patients can access their GP records	2016/17	X	X				X	X	X								
	Patient to send electronic messages to GP via clinical	2020/21	X	X		X	X	X	X	X								
Population Health & BI	Population Health system available for providers	2017/18	X						X	X	X	X	X	X	X	X	2,565	2,141
	Population Health System available for Research	2018/19	X						X	X	X							
	Population Health System available for	2018/19	X						X	X	X							
	Population Health system available for Public Health / Local Authority	2018/19	X						X	X	X							
	Real time monitoring and analysis of key population	2020/21	X							X	X							
Self-Care & Personalisation	Access to online care plans for complex care patients	2016/17	X		X	X	X	X	X	X		X	X	X	X	X	1,250	3,238
	Access to online care plans for CHC patients	2017/18	X		X	X	X	X	X	X								
	Access to online care plans for PHB patients	2018/19	X		X	X	X	X	X	X								
	Access to online care plans for MH patients	2019/20	X		X	X	X	X	X	X								
	Crisis Care Response booking and information access for service users	2020/21	X						X	X								
	All patients access care plans online	2020/21	X	X		X	X		X	X								
	Patient preferences recorded and available on system	2017/18	X	X	X		X		X									
Paperless	GPs receive timely electronic discharge support from secondary care	2016/17	X				X	X	X	X		X	X	X	X	X	2,530	4,675
	GPs can refer electronically to secondary care	2016/17	X					X	X	X								
	GPs and community pharmacists can utilise electronic prescriptions	2016/17	X					X	X	X								
	Electronic discharge summaries from Crisis Care response	2017/18	X				X	X	X	X								
	Structured digital referrals to social care	2017/18	X					X	X	X								
	Electronic referrals to mental health services	2018/19	X					X	X	X								
	Acute digital messaging to GP practices	2019/19	X					X	X	X								
	Secure instant messaging between pharmacies and GPs to enable real time medication changes	2020/21	X					X	X	X								
	All discharge notes to GP performed digitally – Acute, Community	2020/21	X				X	X	X	X								
Core Development Cost (£000s)			500	500	1,250	500	500	1,000	750	3,550	1,000	825	3,920	9,600	4,300	1,630	**42,490**	**17,922**

Detailed costings and assumptions can be found in the attached spreadsheet, Annex 6 – Finance Requirements

ANNEX 7 – Information Sharing Approach

The diagram below shows the approach BHR will take in the move towards sharing and viewing structured documents across systems and settings, by the end of 2021. BHR will work with the HLP and the implementation of CDA until structured data sharing can be implemented.



ANNEX 8 – Minimising Risks Arising from Technology

While each organisation is responsible for its own IG/IS policies and procedures, a robust piece of work needs to be carried out to assess what the potential BHR wide risks are to the current technology infrastructure. This piece will be part of a workstream for IG/IS that will run alongside development/implementation programmes, and will also consider the recommendations from the Calidcott Review 3.

NELFT and BHRUT have the following policies in place in order to minimise risks arising from technology:

	NELFT	BHRUT
Information / Data Sharing protocol	✓	✓
Information Security Policy	✓	✓
Information Governance Policy	✓	✓
Registration Authority Policy	✓	✓
Data Protection Policy	✓	✓
Information Security and Access Control Policy	✓	✓
Data Quality Policy	✓	✓
Business Continuity Plan	✓	✓
IG Toolkit (March 2016)	70%	67%
Adoption of GS1 standards	Not implemented yet, but the Trust has two EPRs currently in use, with the implementation of the Inpatient Unit in SystmOne, both EPRs will provide inpatient functionality to support the adoption of GS1.	GS1 SLN standards implemented, infrastructure now in place which supports all 7 GS1 Identification Keys for compliance.

ANNEX 9 – Adoption of the NHS Number

BHRUT's Medway system is not currently connected to the NHS Spine, and is only integrated with 18 of the 49 clinical applications in use. Under the Trusts Digital by Design Strategy, their integration engine will be developed to include additional interfaces and allow the PAS to feed into all other systems. Spine mini-services technology will be deployed within the existing integration engine. This will mean that each system will contain the NHS number as the primary identifier and allow the services to directly access the personal demographic service (PDS) held on the NHS Spine in real time. Currently, the NHS number is used in 88% of cases in A&E and 99% in inpatient and outpatient datasets. The Trust are working towards 100% (except for exceptional circumstances, such as non-registered patients in A&E) by the end of 2017.

LBH have been working on the transition to the NHS number as the primary identifier for social care for over two years now. Over this period, NHS numbers have been obtained by submitting batch data requests to Havering CCG (for adults) and the NHS MACS service (for children). The Council has then used automated routines to populate the social care case management system with the results. The match rate is currently 85% for adult social care and 93% for children's social care (correct at time of drafting, April 2016). Users are able to search the case management system using NHS numbers.

A plan is in place to capture NHS numbers at the start of an individual's care pathway automatically. The solution being developed is based on integration between the Council's social care case management system and a Spine Mini Service Provider (SMSP) that is accredited by HSCIC to access the NHS Personal Demographics Service. The solution comprises three functions:

- 'Bulk' look up function – enables a user with system admin permissions to request NHS number lookups for multiple persons and to populate the social care case management system with the results.
- 'Individual' look up function – a NHS number lookup button within an individual's case record will allow users to request the NHS number for a person in context and to populate the social care case management system with the result.
- 'Automatic' lookup function – this will look up the NHS number at the start of an individual's social care pathway and populate the social care case management system with the result

The above solution applies to both adults and children with social care needs. The remaining key phases of work required to ensure that this becomes part of business as usual are as follows:

- Case management system/SMSP – solution implementation – stage 1 ('bulk' and 'individual' look up) – this includes validating and verifying existing NHS number records.
- Case management system/SMSP – solution implementation – stage 2 ('automatic' look up)
- Agree communications plan and staff engagement
- Implement communications plan and staff engagement
- Case management system/amend letters and other outputs (high priority)
- Case management system/amend letters and other outputs (lower priority)
- Case management system/review interfaces with other systems
- Case management system/redevelop interfaces with other systems

It is expected that by 2017/18 there will not be any gaps, and the NHS number will be the primary identifier for 100% of patients serviced by Havering social services.

ANNEX 10 - Infrastructure

Mobile working

Mobile working strategies of individual organisations and BHR wide are going to be key in enabling new models of care. BHR will seek to maximise the existing capacity of the current infrastructure and opportunities for development, before considering further investment. One such opportunity is that of shared Wi-Fi across organisations where connectivity is currently limited, making multidisciplinary and mobile working more difficult. BHR will explore the option of allowing authorised users from across the region to use any BHR organisation's Wi-Fi for connection to the internet.

In addition to the BHR wide initiative, organisations within BHR have their own plans for mobile working. BHRUT's Digital by Design strategy proposes a major upgrade of core infrastructure to ensure the right building blocks are in place to properly support the software applications that are required to deliver strategic objectives and day-to-day business in an effective and efficient manner. The Trust previously had a complex network which was completely replaced in the last quarter of 2014/15. The new network provides a significantly greater bandwidth to desktop, as well as between the two hospitals, Queen's Hospital (QH) and King George Hospital (KGH). Many applications are now delivered over the internet and therefore, over the next five years, connections to the NHS N3 and internet will be upgraded and a separate dedicated internet connection will be provided for patient access to ensure it does not impact on staff using corporate applications.

As part of the network programme access points have also been installed to allow for a wireless environment at QH and KGH, supporting mobile working such as computers on wheels, and enabling clinical data to be viewed and captured the patient's bedside.

In addition to the upgrade to the network, the Trust will be expanding their Virtual Desktop Infrastructure (VDI), moving to 80% of servers being virtual. This will allow users to access their desktops over the network from any location, but also provide a more centralised, efficient client environment that is easier to maintain.

Across both adults and children's social care in Havering, mobile devices are increasingly being rolled out to staff, together with mobile data capability, to accommodate news ways of working and increase productivity. Secure remote access is available for all staff in Havering from both Council-managed devices as well as personal devices with two factor authentication where appropriate. Adult social care staff are also being co-located with NELFT community health staff as a prelude to integration. These staff have been issued with NELFT-build laptops and connect to LBH systems using PSN/N3 Closed User Group via MS remote desktop, giving access to the full set of applications and information that they had when physically based within the Council.

LBH piloted a mobile version of its social care line of business system for the two months to February 2016; evaluation of this pilot is currently underway. The Council is also looking at other potential solution for off-line, mobile working including TotalMobile which has been implemented in Newham Council, which shares ICT services with Havering.

Unified Communications

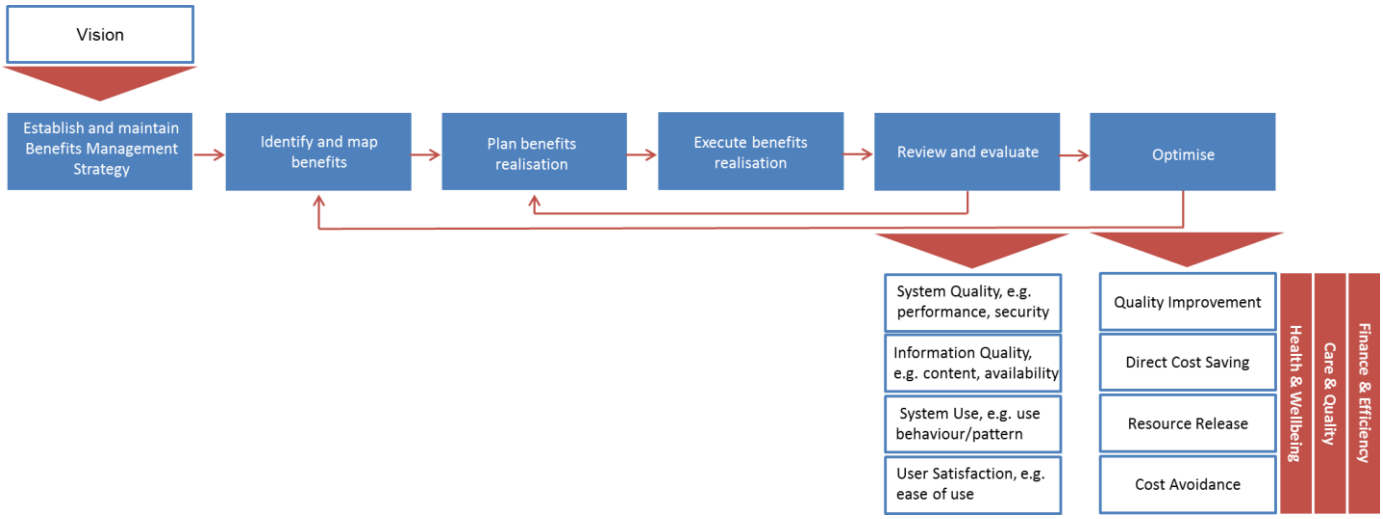
Within the LDR there is the ambition to move to electronic messaging between the Acute Trust and GP practices, and between pharmacies and practices. In the interim, NHSMail will continue to be used as the mechanism for secure messaging.

BHRUT are currently implementing hybrid mail which will allow correspondence to be sent electronically from end users PCs either directly to an email account or to an offsite mail provider, reducing the amount of correspondence such as appointment letters and discharge summaries that are currently printed.

The Trust are also exploring the models for levering the investment made in their network and moving to a unified communications system using Voice over IP technologies integrated with presence management, instant messaging and videoconferencing to replace the end of life telecommunications system at King George Hospital and the analogue phone service provided at Queen's Hospital.

ANNEX 11 – Benefits Realisation

A comprehensive benefits realisation programme will operate alongside the implementation of new technology and linked directly to the delivery of the overall business change. Significant benefits realisation will occur after conclusion of project delivery, and therefore the benefits management will form part of the overall programme.



For each project, the above approach to benefits realisation will be adopted, and the following will be required:

- Key Performance Indicators and metrics in order to set realistic trajectories for change
- Relevant data will need to be captured. Organisations will need to work together to provide this where it is not already available
- Regular reporting via agreed governance route
- Identification, analysis and remedial action plans where benefits are not achieved as expected
- Representation of benefits in financial terms wherever possible so as to measure the actual return on investment

ANNEX 12 – Change Management Approach

Competing priorities, lack of familiarity with the technology, resistance to change and risk aversion are all barriers to digital transformation, however the most significant is culture; the acceptance and willingness of staff to use an innovation is a major factor of success. The system will need to develop a digital culture that is patient-centred, collaborative, data driven, innovative and agile in order for technology to achieve widespread acceptance and adoption. Creating the right environment for digital transformation will require strong leadership, alignment of the digital strategy with the system's goals, and collaboration based on concrete needs, benefits, and support.

Each project will be required to adopt a formal approach to change management (described below) to ensure successful implementation and optimisation of capabilities.

System wide executive will ultimately hold accountability for delivering against the LDR, and will be supported by a BHR steering group who will support delivery from initiation through to implementation.

A Training and Communications lead at the centre will work with communications and engagement leads within each organisation to ensure a coordinated approach and consistent messaging. The central pool of recourses will also be responsible for identifying and sharing lessons learned from successful innovations from elsewhere

Engagement and co-design will be carried out via a design group for each project. Patient representatives/service users and systems users will be recruited to a design group to enable requirements to be captured and refined, and allow for user input throughout the development cycles. Constant feedback will also allow the project to manage and mitigate unexpected problems

Taking an agile approach to delivery will enable us to:

- Deliver the right capabilities using regular feedback
- Understand the strengths and weaknesses of the processes
- Apply benefits of learning and adapt

The local health and social care economy faces a significant financial challenge; radical transformation will need to occur to ensure services are safe, effective and sustainable. This has already begun with our UEC Vanguard, establishment of an ACO framework, and development of new models of care, such as Health1000. technology is a key enabler for each of these programmes.

Each project will be established under a unified programme and operate in line with project management best practice, e.g. Prince II. Projects will report to the central steering group and local governance for the responsible organisation

A formal approach to benefits realisation will be adopted and will measure progress of change and value delivered as a result