



Leicester, Leicestershire and Rutland (LLR)
Local Digital Roadmap
2016 - 2021



Better care together

Leicester, Leicestershire & Rutland health and social care



Contents

Foreword for Local Digital Roadmap	2		
1. Introduction	4		
1.1 Our Journey in Delivering the Five Year Forward View and Personalised Health and Care 2020	4		
1.2 Overview of Organisations Covered	6		
1.3 Sustainability and Transformation Plan (STP) Alignment	6		
1.3.1 Better Care Together (BCT)	7		
1.4 Leicester, Leicestershire and Rutland (LLR) Context	8		
2. A vision for digitally-enabled transformation	19		
3. Baseline Position	20		
3.1 Current Technology Landscape	20		
3.1.1 Data Sharing	20		
3.1.2 Patient Access	21		
3.1.3 Electronic Prescriptions	21		
3.1.4 Electronic Clinical Correspondence	21		
3.1.5 Business Intelligence	21		
3.1.6 System Access	22		
3.1.7 Pathways	22		
3.1.8 Patient Focused Apps	22		
3.2 Rate limiting factors	23		
4. Readiness	24		
4.1 Digital Maturity	27		
4.1.1 Analysis of results and trajectory of capability	27		
4.2 Benefits management	32		
4.3 Funding	33		
4.4 Estates and Transformation Funding (ETTF) to Support LLR Technology Priorities	34		
4.5 Overarching Governance and Co-Ordination	36		
4.6 Portfolio, Programmes and Projects	37		
4.7 Technology Enabled Research and Innovation across LLR	37		
5. Capabilities	38		
5.1 Paper free at Point of Care groups of capabilities	38		
5.1.1 Records, assessments and plans	38		
5.1.2 Transfers of care	41		
5.1.3 Orders and results management	43		
5.1.4 Medicines management and optimisation	43		
5.1.5 Decision support	45		
5.1.6 Remote care	46		
5.1.7 Asset and resource optimisation	49		
5.2 16/17-17/18 Universal capabilities	54		
5.3 Capabilities Delivery Plan	55		
6. Information Sharing	56		
6.1 Information Sharing Strategy	56		
6.2 Information Governance	56		
6.3 Interoperability Strategy	57		
7. Infrastructure	58		
8. Minimising risks arising from technology	63		
9. Timescales and Delivery of the Local Digital Roadmap	64		
2016/17	64		
2017/18	66		
2018/19	68		
2019/20	70		
2020/21	72		
10. Summary	73		
Appendix 1 - Digital Maturity Index Summary Results	76		
Appendix 2 - Universal Capabilities	76		
Appendix 3 - Capabilities Deployment Schedule	88		
Glossary of Terms	93		





Foreword for Local Digital Roadmap

Leicester, Leicestershire and Rutland (LLR) health and social care Information Technology (IT) community has an overarching ambition to use an integrated patient/client record which we recognise will be significantly better for patient care and safety, and also deliver significant efficiencies to the LLR health and care system.

We recognise that any strategy inevitably changes and develops over time and the digital strategy changes more quickly than most because a new development can change the situation overnight. We realise that different clinical systems may be more suitable for different organisations but the points of contact between these organisations must be totally integrated to ensure seamless pathways for patients. An updateable transferable care plan is the first priority on this transition towards a fully interoperable care record. As a national solution has yet to be implemented we see it as a priority locally to push this forward but we recognise that using existing systems and national solutions where possible is better than ad hoc or separate systems. We are also committed to the vision of paper free at point of care as we see this is both efficient and safer for patient care. Integrating records across health and social care remains a priority and we continue to address the technical and Information Governance (IG) issues surrounding this e.g. use of the National Health Service (NHS) number as the primary identifier in real time is well progressed but not sorted within social care.

Better Care Together (BCT) in LLR has inherited a good IT community with good working relationships and a monthly meeting and it is very useful to have social care, primary care, secondary care, community care emergency care, Commissioning Support Unit (CSU) and Health Informatics Service (HIS) IT professionals and other partners meeting together to discuss

closer working and any issues that need resolution and we will continue to build on this. An example of this cooperation is the embedding and rollout of LLR shared public sector Wi-Fi. The Sustainability and Transformational Plan will build on the work done through Better Care Together that will support the Five Year Forward View (FYFV). The Sustainability and Transformational Plan will be underpinned by the Local Digital Roadmap. Overall, the LLR IT community has been working in a collaborative way for a number of years and have credible plans in place the support the delivery of new technology projects.

We recognise that national systems and contracting arrangements do not currently help the move to better integrated working but we are committed locally to address those issues for the benefits of patients and residents of LLR.

We feel it is important that organisations develop their own IT strategies and developments within the LLR framework and not in isolation.

Our roadmap includes embracing new technology to support self-care and promote remote access to health and social care.

We are committed to building on and further progressing the work on population health analysis that has already become and will be progressed during the progression of the roadmap. There are several projects across the health and social care community that are rolled out and not fully embedded and it is our ambition to have full implementation of all current projects which will help us towards paper free at point of care and better service efficiencies.

Our ambition remains to have a fully integrated and paper-free electronic health economy as soon as the technology and IG will allow it and we are determined to drive the progress towards this as we realise that this is of crucial importance to the safety and efficiency of the LLR health and social care system.





Dr Tony Bentley FRCGP
Chairman, Leicester, Leicestershire and Rutland Better Care Together,
Information Management & Technology Enablement Group

On behalf of the LLR BCT IM&T Enablement Group Members:

FIRST NAME	LAST NAME	ORGANISATION (Alphabetical order)
Vikesh	Tailor	Arden & GEM CSU
Simon	Clements	Arden & GEM CSU – IG
Mary	Barber	Better Care Together
Andrew	Ahyow	East Leicestershire & Rutland CCG
Sharon	Rose	East Leicestershire & Rutland CCG
Tim	Sacks	East Leicestershire & Rutland CCG
Steve	Bowyer	EMAS
Tony	Bentley	Leicester City CCG
Clare	Sherman	Leicester City CCG
Ashok	Popat	Leicester City Council
David	Mell	Leicester Partnership Trust
Steve	Pugh	Leicestershire County Council
Simon	Edmonds	Leicestershire County Council
Luvjit	Kandula	Leicestershire Pharmacy Committee
Tim	Glover	Leicestershire Police
Ian	Wakeford	LHIS
Tirath	Singh	LHIS
Aruna	Garcea	LLR Alliance
Alison	Tyers	LLR Alliance
Gemma	Miller	LOROS
Luke	Feathers	LOROS – Palliative Medicine
Mike	Kitching	Patient Participation Rep.
Sandra	Taylor	Rutland County Council
John	Clarke	UHL NHS Trust
Steve	Jackson	UHL NHS Trust
Nick	Pulman	West Leicestershire CCG
Ian	Potter	West Leicestershire CCG
Jennie	Caukwell	West Leicestershire CCG



1. Introduction

This Local Digital Roadmap (LDR) covers organisations within the Leicester, Leicestershire and Rutland (LLR) footprint. Its intention is to support the Five Year Forward View and deliver a paperless NHS at point of care.

The LLR health community are committed to deliver high quality services for Leicester, Leicestershire and Rutland. The Local Digital Roadmap is aligned to the LLR Sustainability Transformation Plans (STPs). It is also linked with the LLR Better Care Together (BCT) programme. New models of care generated from the STPs will be fully supported by Information Technology as a prominent enabler for change. Health and Social Care Organisations within LLR are fully committed and work together to ensure that digital technology is used to improve the quality of care and service for the population.

1.1 Our Journey in Delivering the Five Year Forward View and Personalised Health and Care 2020

The five year forward view sets out a clear direction for the NHS, showing why change is needed and what it will look like. We have over the last two years harnessed the message within this and the associated NIB framework for action to start to accelerate delivery and invest in technology as key enabler in meeting the key challenges below for health and social care in England:

- The health and wellbeing gap
- The care and quality gap
- The funding and efficiency gap

Our roadmap is focussed on how it will support to deliver the below key areas across the LLR area:

- Enable me to make the right health and care choices
- Give care professionals and carers access to all the data, information and knowledge they need
- Assure best value for taxpayers
- Support care professionals to make the best use of data and technology
- Efficiency and Safety

We have made significant progress with some innovative examples and further developments in the pipeline in regards to local new models of care and the development of MSCP models of care. We recognise that we have challenges ahead to support these developments by further driving the use of and exploiting technology to drive efficiency and dissolve operational organisational and service boundaries as demanded by the Five Year forward View and GP five year forward.

Within LLR hospitals, community and home, clinical and social care, formal and informal settings, we will increase reliance on modern electronic workflows to share and store patient information across specialties. We want greater consistency and efficiency in transfer of information to and from primary care and secondary care and is something we are wanting to achieve more and more through robust interoperability between systems to support greater task based operational and clinical collaborative working across organisational and functional boundaries.

At present we are seeking more innovative solutions to communicate between primary care and secondary care and replace the use paper and fax machines for example with better workflows utilising system capability to create seamless workflow between organisational boundaries whilst challenging operational cultures in order to harness the capability that technology brings.



Across LLR we service a diverse patient population with circa 1.1m patients registered with 140 GP practices across LLR. Over the past two years we have increased our work, in partnership, towards improved digital maturity within general practice across LLR. This is demonstrated by all LLR practices being enabled to offer patient-facing digital services to allow patients to book appointments, order prescriptions and gain access to their detailed coded record and robust implementation of nationally mandated systems such as EPSr2. We have 98% of LLR GP practices signed up to a wide sharing agreement with various providers such as 111, East Midlands Ambulance Service and various Urgent Care Centres. This signed agreement demonstrates collaboration through technology by extending the ability for clinicians in out of hours and urgent care settings to view key elements of a patient's clinical record at the point of care in real time using the Medical Interoperability Gateway (MIG) to allow better informed clinical decisions and enhance clinical safety.

This progress is complemented by examples of innovative operational developments across LLR supported through technology. Within West Leicestershire CCG's there are 4 federated localities starting to scope out technology capabilities to effectively support new ways of delivering Primary Care. We recognise that hub and spoke type working within Primary Care is evolving with a greater need for efficient IT systems that support clinical workflows. Another example of progress is Leicester City CCG's successful application to the Prime Minister's Access Fund which involved a wave two bid to provide four extended hours primary care (EHPC) Hubs and an online doctor service on behalf of the Leicester City

GP Federations. In addition the four EHPC HUBs came online almost simultaneously ahead of the original timeline and looked to implement some of the building blocks to enable digitisation to progress through utilising a single phone number to access for patients and interoperability for referrals by the 111 service. The operational configuration of the hubs has also been further enhanced through clinicians having access to key information from a patient record via the Medical Interoperability Gateway (MIG). Further developments to the service may include digital interaction and access to a local GP through media of choice – phone (mobile; landline); Skype; smartphone/tablet App and integration between EHPC Hubs, Primary Care, all Out Of Hours services and 111

We recognise that we need to consider and plan our investments wisely over the coming years in GP technology and estates to support developments in order to:

- Enable self-care and self-management
- Reduce practice workload and pressures
- Help practices to work at scale
- Support whole systems efficiency

Our aim is to build on foundations to fulfil the demands of the NHS Five year forward view and GP Five year forward view. We will further increase use of technology to enhance patient care, streamline processes and workflows whilst ensuring care professionals have access to all the information they need to deliver the best outcomes for the citizens of LLR, The roadmap outlines where we are with our current journey and the steps are aiming to take in the next 5 years.



1.2 Overview of Organisations Covered

The LLR footprint consists of the following organisations:

Leicester City CCG (Lead Organisation)
West Leicestershire CCG (Partner Organisation)
East Leicestershire and Rutland CCG (Partner Organisation)
University Hospitals Of Leicester NHS Trust (Inc. Leicester Urgent Care Centre)
Leicestershire Partnership NHS Trust
East Midlands Ambulance Service NHS Trust
DHU Loughborough Urgent Care Centre
East Leicestershire and Rutland Urgent Care Centre's (Northern Doctors)
DHU GP OOH
Arden & Greater East Midlands CSU
Leicestershire Health Informatics Service
LOROS
DHU NHS 111
Leicester City Council
Leicestershire County Council
Rutland County Council
Leicestershire and Rutland local pharmaceutical committee
GP Federations
SSAFA WIC

1.3 Sustainability and Transformation Plan (STP) Alignment

There is an intrinsic link with digital and the LLR STP. This Roadmap helps STP with a key enabler of digital technology to help it deliver:

- Primary care at scale
- Securing seven day services
- Enabling new care models
- Transforming care in line with key clinical priorities

Three areas for review for the STP:

- The care and quality gap
- The finance and efficiency gap
- The health and wellbeing gap

Supporting digital integration and mapping to pathway redesign this digital roadmap will help support closing these gaps. These will be done by identifying the IM&T ambition as part of the LDR and working with clinical delivery teams to ensure that IM&T is there as an enabler to support the clinical change for the benefit of patients, the public and staff.

This Local Digital Roadmap will Supporting new models of care and placed based care. Working alongside areas of delivery focus that are important for the local STP:

- Better Care Together (BCT) Phase 1 service reconfiguration
- Public sector efficiency
- Urgent and emergency care
- Mental health
- Integrated placed based community teams
- Primary medical care
- Digital technology
- Public sector estate
- Health and care workforce
- LLR place based system approach

The Local Digital Roadmap capabilities will assist in delivering the outcomes of STP workstreams. Digital technology will play a part in transformational change, other elements such as service redesign, staff training and communication will need to be involved to fully realise the benefits of the changes. The STP workstreams will incorporate all of these elements within the change process to deliver the STP. This will be overseen by the STP governance and IM&T will have an integral part within this governance. This will ensure alignment with the LDR and the STP remains paramount.



1.3.1 Better Care Together (BCT)

Better care together is a significant programme of work which will transform the health and social care system in Leicester, Leicestershire and Rutland (LLR) by 2021 as part of the delivery of the Sustainability and Transformation Plan.

BCT brings together partners, including local NHS organisations and councils, to ensure that services change to meet the needs of local people. They also work closely with public and patient involvement (PPI) representatives to develop plans for change.

The BCT vision is for a local health and social care system that supports citizens through every stage of life, which:

- Supports children and parents for the very best start in life
- Helps people stay well in mind and body throughout their life
- Knows your history and can plan your health needs
- Cares for the most vulnerable and the most frail
- Has services available when it matters and especially in a crisis
- Helps support patients and their loved ones when life comes to an end
- Provides faster access, shorter waits and more services out of hospital

BCT involves all health and social care organisations within LLR. The Local Digital Roadmap footprint for LLR maps to the footprint covered by LLR. The BCT programme will be a mechanism of delivery the LLR Local Digital Roadmap.

The BCT programme covers the following workstreams:

- Planned Care
- Urgent and Emergency Care
- End of Life Care
- Mental Health
- Maternity and Children's
- Frail older people and dementia
- Learning Disabilities
- Long term conditions and cancer
- Prevention
- Primary Care
- Acute and community service reconfiguration
- Social Care
- Technology
- Workforce
- Estates
- Communications & Engagement

Through these workstreams we will deliver programmes across both clinical settings and service boundaries which we believe will help improve the services delivered to patients from a patient's perspective. The BCT IM&T Enablement group that will govern the delivery of the LDR will support the digital enablement of the changes required for the clinical workstreams.

There are also a number of enablement workstreams that help to deliver the programme. These individual workstreams will also have greater interaction with digital technology. This would include links such as training the workforce to uptake digital technology by implementing the right level of business change. Technology will support estates by providing the correct infrastructure to meet the business needs of any changes to the health and social care estate. Communication and engagement can support digital technology by ensuring that messages go out to the public and staff about new improvements in IM&T.

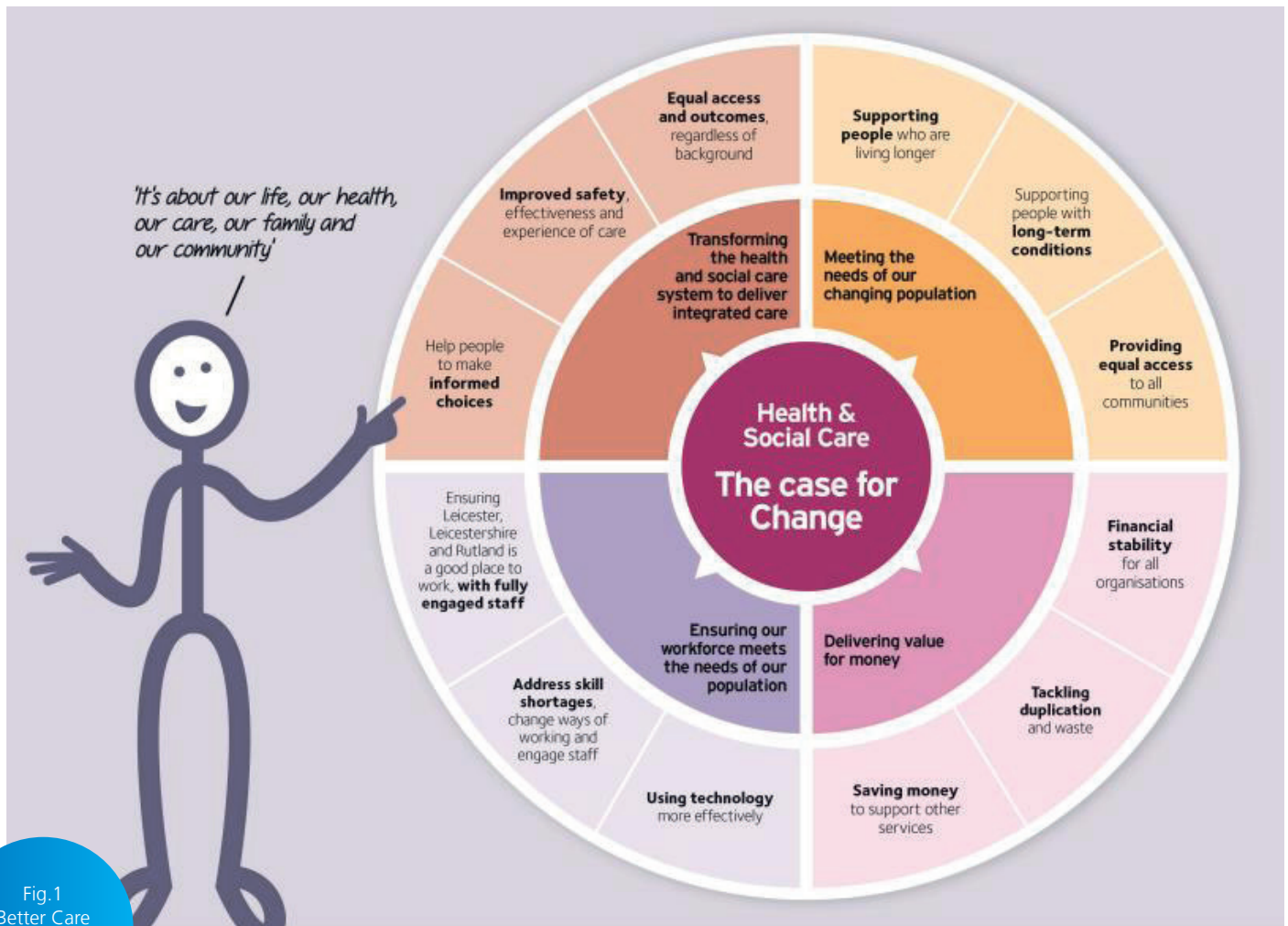


Fig. 1 Better Care Together - case for change

1.4 Leicester, Leicestershire and Rutland (LLR) Context

Leicester, Leicestershire and Rutland has a well-established strategic transformation programme Better Care Together (BCT) and STP group which is a sub-group of the BCT Delivery Board. The collaboration of health and social care organisations for transformation change has been ongoing since 2014. LLR has been externally recognised as having made huge progress over recent years in strengthening relationships and system leadership across the health community. From an IM&T perspective joint working between Health, Social Care and wider public sector have been in operation

since 2010. The importance of IM&T in LLR has been signified by the seniority of leadership involved in setting the strategic direction and operational delivery.

The LLR health community has been focused on improving IM&T based around the following four principal areas:

- Sharing care records
- Population data analysis
- System wide efficiencies to improve integrated working
- Supporting Better Care Together Clinical Workstreams





Sharing care records

The following are LLR principles for record sharing:

1. A single source of information that can take data from our current systems and integrate with them, it should not be a stand-alone system, and should not require duplicate data entry or separate log-ins. The single source should be an agreed LLR standard. Information should aspire to be real time and update across the different organisations. It should offer a flag to signal the existence of a plan within legitimate external parties so they are prompted to view it.
2. It should be behavior changing, and have evidence based interventions. It should have potential to use other support technologies. It should have a patient view and involve the patient in creation and updates.
3. It should support a multi morbid approach to care not just around one condition. For example it should have potential to address multiple chronic diseases, mental health issues and end of life plans if relevant.
4. It must be secure and have the ability to track and audit access to the system giving reassurance to the LLR population that we have a safe, secure and appropriately managed. It must be fit for purpose to manage patient consent.
5. There should be the ability to report on the information system including use age to assist with outcomes based audits.
6. It should be cost effective and align with other IT initiatives.





Population data analysis

The LLR footprint has a solid history of collaboration with a commitment to using data from a variety of sources to better understand the current health of the local population as a whole as well as to understand variation over time in health outcomes and needs within and between various populations of interest within the area. This provides us with a capability through qualitative and quantitative intelligence to improve health outcomes for the population as a whole and target specific health inequalities which affect certain groups of people more than others. This work has helped us to enhance joint commissioning activities and development with our partners and we aim to develop further links with other tools and data sources to enhance intelligence to improve health outcomes.

We have worked to create safe consent models to make data extraction, pseudonymisation, analysis and publication of data back to practices all within a pivotal secure NHS environment for data processing and analysis through the locally based Data Services for Commissioning Regional Office (DSCRO). The CCGs have also engaged well with general practice to help them conduct regular Multi-Disciplinary Teams (MDTs) to link interventions to case finding. For example the creation of care plans for the 2% of the population most likely to benefit from them.

The in-house data analysis tool uses primary care data as well as the usual Secondary Uses Service (SUS) and prescribing data and is more useful as a result. It is also cost effective and relatively flexible to redesign dashboards that are easily understood and relevant to programmes being run as part of Quality Innovation Productivity and Prevention (QIPP) etc.

The Better Care Together and STP initiative has recently highlighted the potential to include social care data into the analysis. The current consent model for social care data mixed in this way will allow for analysis of anonymized data. Going forward we would aim to establish explicit consent of individual patients to enable GPs to undertake case finding to support anticipatory care and support.

We have built a relationship with Pi Health & Care (analytics company) through the utilisation of their CareTrak data extraction and analysis software tool which mixes a more limited frame of activity data with social care data but currently allows only population level anonymised data analysis. These outputs can be combined with other health and social care data and mapped to help commissioners identify geographical areas for focus, to inform commissioning decisions about allocations of resources such as personnel or other forms of support and to track changes in population health over time.

Local work continues with partners in Public Health and NHS England, with primary and community care providers, with the voluntary sector and with academic partners.



System wide efficiencies to improve integrated working

There are five themes relating to system wide efficiencies:

1. **Patient focused initiatives**

Things that help patients get better use of the systems we develop. For example advice on how best to access services, systems to reduce Did Not Attend (DNAs), system improvements that help patients interact, self-management tools, clarifying patient consent to share information.

2. **Better use of what we already have**

We do not yet use the full capability of the IT systems we already have. For example GP workshops have identified that a priority for practices is not to have more systems but to be trained on using what is there already. This has led to an IT training initiative in West Leicestershire CCG.

3. **Understanding each other's systems and the implications of actions at different parts of pathways**

A fuller understanding of work practices, capacity and willingness to accept work or actions across pathways is important.

4. **Moving to task based communications**

Our current system of communication is very inefficient and carries a great risk of missing actions as patients move across pathways, moving to task based communications could be a useful way to improve this. For example outpatient letters have little or no structure. Discharge letters have been developed with "actions for GP" highlighted and To Take Outs (TTOs) recorded in standard form. However the process of transmission and scanning into GP clinical systems and the routines by which these are viewed can easily result in actions not being communicated effectively.

Evidence for problems in this area has been highlighted by GPs. Either in missing the note, or the note being taken after the task deadline. A recent audit by the acute kidney injury team has shown that requests for Urea and Electrolytes (U+Es) and restarting Angiotensin Converting Enzyme (ACE) inhibitor medication following admission has poor rates of success and the messaging process may well be contributing to this.

5. **Amalgamating data on activity across pathways**

Developing systems that highlight more effectively which parts of a pathway are under pressure and become rate-limiting steps. For example understanding pressure in Emergency Department (ED), East Midlands Ambulance Service (EMAS) handovers, and primary care referrals.



Supporting Better Care Together Clinical Workstreams

Planned Care

- Over 100 pathways feature on our referral pathway system Pathway Referral Implementation System PRISM and we have plans to add more pathways including referral triage, pathway guidelines and e-referral. We aim to move to a position where there are no paper referrals in planned care pathways in the next two years.
- To develop alternatives to face-to-face consulting such as voice, video conferencing and email, identify that scheduling the consulting is often the limiting factor. Requires advice and guidance tariffs, and an understanding of which specialities need which communication method e.g. the acuteness of telephone (diabetes developing their “phone around” consultant mobile phone service) or email (cardiology looking at Electro Cardiograms (ECGs)).
- Through the planned care pathway redesign, configuration of hubs and spoke type working within CCG’s areas across LLR is taking place with drivers to remove the amount of unnecessary referrals to secondary care. This involves creating a mechanism for general practice for the transfer of clinically relevant data generated in the community e.g. ECG readings between primary and secondary care and vice versa. This will give the capability and opportunity for University Hospitals of Leicester UHL consultants to screen patients test results before referrals are made. Integration of monitoring devices for data to be transmitted to SystemOne and Egton Medical Information System (EMIS) Web will be important going forward.
- A specific solution is being investigated around Tele –dermatology which is anticipated to involve referring the image of the skin issue of a patient together with relevant history of the condition to a local clinician for information, advice and guidance. These can be done in real time or in a store and forward manner through national systems such e referrals. The operational set up within which this type of functionality will sit is being determined as part of integrated service pathway redesign which involved the consideration of community based diagnostic / photography hubs. We will also look at supporting image sharing through developments from other specialities for the Early pregnancy assessment unit, physio and ophthalmology services as other example to communicate between primary and secondary care to support community based screening.
- Common need of record sharing for care plans and for patient sharing records with hub type services to capture the clinical activity taking place throughout a patient’s journey.
- Need better ways of passing the baton in left shift services. Two way task based communication or at least more obvious arrangements in shared care communication. For example agreements on acting on abnormal results especially when normal results can still need action. Similarly safe handling of patients with on-going monitoring needs that could be discharged from outpatient follow up. We will implement a SystemOne hub system in Early Pregnancy Assessments Units to support a pilot taking place in 2016/17. This will enable electronic booking into primary care by secondary care services.
- A similar system configuration will be considered for our MSK reconfiguration. We will look to develop as part of the MSK reconfiguration a self-referrals system that’s enable function to function electronic information enabling anyone in the service to act on a referral and allow for electronic notifications to be sent to patients.
- We are undertaking a pilot with our MSK triage service which utilises the national asset system e- referrals but will look to remove use of standalone spreadsheets which plays a part in the current process, through system developments over the next year to aid appointment booking more seamlessly and logging of referrals and linking with patient’s records.



- Looking at DAWN functionality and Speakeasy for management of shared care patients between Primary / Secondary care in Secondary / Primary care settings but acknowledged that Electronic Patient Record (EPR) may meet requirements going forward. Future solution needs to support drug regime monitoring and the support sharing of chronology of events to be shared between UHL specialities and GP's whilst flagging to support notification to GP's in handover. Used in Anti coagulation and extended to rheumatology.
- Our priorities for planned care involve our local collaborative partnership of three CCGs and the three provider members. IM&T will support the drive to rebalance of elective care towards a less acute model through developments such having access to Sunquest ICE within the alliance and a whole package of shared connectivity between UHL and alliance systems to reduce duplication between associated functions. Within gastroenterology pathways we will achieve in the next year a consistent version of the Unisoft system being used between both UHL and the alliance.
- Across speciality systems we need to be able to generate in a simple way, enhanced patient journey data which can also be shared with GP's in order to support operational pathway redesign and understand better episodes of new and follow up outpatient care on an individual speciality and patient basis to inform outcome based commissioning. Current methods are cumbersome and not always accurate therefore systems need to accommodate better these needs and to reduce administration burden with current methods. We need to be able to match procedure International Classification of Diseases (ICD) codes and better map to Healthcare Resource Groups (HRG) tariff codes.
- Ensuring enough hardware devices necessary (such as monitors screens, personal computers (PC's), tablets and mobile devices) to support technology use and speed of access to information on our elective wards.
- Electronic discharge letters and clinic letters from all areas.

End of Life (EOL)

- Main requirement is care planning. Using the EOL agreed code set. The Summary Care Record version 2 (SCRv2) looks like the way forwards if we can incorporate some fields which enable two way free text input into the care plan.
- We have recognised that SCR V2.1 is not recognised as being Electric Palliative Care Coordination systems (EpaCCs) compliant but whilst moving towards the "ideal" it is the most appropriate solution at present
- Electronic palliative care guidelines.
- Clear arrangements for flags eg for Do not attempt Cardiopulmonary resuscitation (DNACPR).
- There would be clear benefits in a one system approach. MIG is too limited to give the functionality required.

Mental health

- The vision is to have a single platform for IT clinical systems. Interoperability will provide the opportunities for systems to communicate with one another to provide data sharing solutions.
- To fully enable mobile working and maximising Wi-Fi and cellular connectivity across LLR.
- Through varied communications mediums such as bespoke patient information videos, interactive counselling and video conference calling.
- Maximise SCRv2 and MIG functionality to incorporate important mental health codes.



Maternity and Children's

- To fully enable mobile working and maximising Wi-Fi and cellular connectivity across LLR.
- Better use of available premises and technology within the community.
- The vision is to have a single platform for IT clinical systems. Interoperability will provide the opportunities for systems to communicate with one another to provide data sharing solutions. This should support the integration of children and young people records across health and social care.

Frail Elderly and Dementia

- Electronic health records that are shared to support multiple conditions, easily accessible and in real time.
- Importance of integrated pathways with social care and voluntary sector. Reablement pathways and the 'home first' principle of care delivery.
- Patient and particularly relative's/carer's access to records can be very important with this group.
- Increased role for assistive technology in monitoring, medication compliance and keeping patients safe and independent.
- To fully enable mobile working and maximising Wi-Fi and cellular connectivity across LLR.
- Link with ambulance and GP access to the DOS for alternative service to hospital admission.
- Consider how technology can support working with residential and nursing homes.





Urgent care

- Clinicians within the Integrated Urgent Care service must have access to relevant aspects of patients' medical and care information, where the patient has consented to this being available. This must include knowledge about patients' contact history and medical problems; so that the service can help patients make the best decisions. Patients with special notes or a specific care plan must be treated according to that plan and, where patients have specific needs they must be transferred to the appropriate professional or specialist service.
- Access to important patient information through the existing Summary Care Record (SCR) service / Child Protection Information System (CPIS), and MIG, must be available to all clinicians working in the Integrated Urgent Care system along with the necessary training to use it appropriately.
- The system should support the creation of 'flags' which will signal the presence of key information held within the systems. It is intended that these flags will be presented at a point in the call flow that will allow for appropriate action e.g. routing directly to a clinician, without the requirement for a full triage by the health advisor.
- Directory of Services - Access to Service Information. Should include services from social care, mental health and third-sector services to improve accessibility for patients to these services.
- Mobile Directory of Services (DoS) (Clinician) / Open DoS API (Public / Third Party Access) including to patients via access to apps.
- The ability for NHS 111 / Clinical Hub(s) to make electronic referrals and direct appointment booking with relevant urgent or emergency care service supported by local agreement (e.g. ED, Urgent Care Centre (UCC), OOH, GP Extended Hour Hubs, Dental Emergency, WIC) – including text or email confirmation.
- Reporting, tracking patient outcomes and having the ability to track the patient through urgent care system as well as service performance of providers.
- Interoperability - Currently Interoperability Toolkit (ITK) Clinical Data Architecture (CDA) Standard however in future standards such as Fast Healthcare Interoperability resources (FHIR) should be adopted.
- Introduction of a user friendly digital channel for integrated urgent care – provision of a mobile and online platform that the Urgent and Emergency Care Networks (UECN) can use to enable a digital access point(s) for their local population. Underpinned by an accredited Clinical Decision Support System (CDSS).
- Telephony - Computer Telephony Integration (CTI) / Speech Recognition.



Cancer

- PRISM to include out of area protocols.
- Care plans as with EOL, Long Term Conditions (LTCs) and frail elderly.
- Scope for improved early detection using APPs eg prostate screening.
- Potential for reducing outpatient follow ups using remote monitoring.
- Maximising existing digital tools to support the service such as DAWN and INFOFLEX.

Learning disability

- Improved system integration across primary, secondary and social care that will support annual health checks.
- Mobile working.
- Maximise the use of notification flags within clinical systems system across primary, secondary and social care to identify Learning disability status in order to make reasonable adjustments.
- Development of a system that supports personalisation and allows access to care and support plans by all relevant partners, including patients.
- Improving system integration and interoperability across children and adult services to facilitate earlier planning.





Long Term Conditions (LTC)

- Using technologies like video conferencing and other technology to be alternatives to face-to-face communications to support patient care.
- Implementing diagnostic technology that integrates with the GP clinical system and shared wider through integrated care records.
- Sound Dr (virtual on-line self-management programme for various LTC).
- Electronic health records that are shared to support multiple conditions, easily accessible and in real time. This includes access by patients to the records as well as staff.
- Increase the role of technology to support diagnostics and potential introduction of diagnostic centre model.
- Reducing outpatient follow ups by implementing remote monitoring initially for prostate and thyroid cancer, to be reviewed for expansion into other appropriate tumour areas.
- Implementation of technology to support patient focused Holistic Needs Assessment e.g. on tablet devices or Apps.
- Development of disease specific Apps to support patients e.g. pancreatic.
- Maximising existing digital tools to support the service such as DAWN and INFOFLEX.

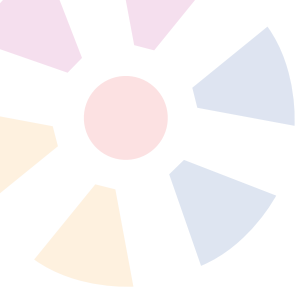




Common themes

- PRISM development for pathways and triage, possible separate PRISM acute.
- Shared records and care plans which are multi morbid not just based on one condition.
- Implementation of interoperable and integrated clinical systems.
- Better ways of communicating including all integrated partners and patients, getting the right communication technology for different needs.
- Patient monitoring and reduced outpatient follow up, some third party software being investigated.
- Patient held or accessed records need exploration but they must not be standalone (which currently limits patient knows best).
- Assistive technology.
- Wi-Fi access and increased mobile access to records.
- APP development and creating common information access to enable.
- Consent and information governance.
- Care plans needing some limited two way writing free text data fields.
- Increasing recognition that a one system approach makes everything much more possible.
- Hub and spoke type operational pathway redesign across LTC's, Planned Care, Urgent Care for example through development of diagnostic hubs in line with the BCT diagnostic strategy will require various technology innovations.





2. A vision for digitally-enabled transformation

Our Vision:

“To ensure robust shared access to paperless patient records across all clinical interfaces across LLR to improve patient outcomes and supported integrated care models by 2021”

As a commitment we will put our population in control of their health, see people support each other more, join up health and social support and transform the way we transact and communicate with patients and staff. Digitally enabled transformation change will help to address the three national challenges of closing the health and wellbeing gap, closing the care and quality gap and closing the finance and efficiency gap. This document will describe how the plans enshrined within the digital roadmap will support the Sustainability and Transformation Plan (STP).

The LLR vision encourages patient empowerment to technology and drives the use of familiar consumer technology to support greater self-care, improvements in health and wellbeing, and access to services.

Use of real-time and historic data will help predictive modelling and improvements in clinical service delivery at point of care. Population health analysis and management will support effective commissioning.

It will promote clinical surveillance and improvements in intelligence through research programmes.

There is a relentless focus and determination from the health and social care community to remove the use of paper, move a majority onto secure electronic communications and deliver paper free at point of care, with a key focus to make the use of fax obsolete as a method of communication.

To convey this digital transformation changes in technology alone will not deliver the changes we need to support new models of care.

Digital inclusion and digital literacy of the workforce, patients and carers are important factors in delivering the change. Support from senior leadership from Chief Information Officers, Chief Clinical Information Officers, Chief Nurse Information Officers and board level leadership to support a common vision of the delivery of this Local Digital Roadmap.





3. Baseline Position

Over the last 5 years the LLR health community has invested heavily in Information Management and Technology (IM&T). This has led to changes in the way that people interact and work with the system. Existing governance consists of key groups of clinical and managerial staff who govern the delivery of plans. A series of workshops have taken place to focus on key IM&T areas of improvement. There have been IM&T projects that have delivered benefits driven change and put the patient at the heart of the change.

3.1 Current Technology Landscape

Here is a summary of the initiatives that LLR organisations have implemented to date.

3.1.1 Data Sharing

Traditional clinical systems have been built around the professional in its specific context of use e.g. a GP clinical system built for the GP to record and retrieve information about the patient. New models of care have required the GP clinical system to be tweaked to work in different ways to how they were originally set up. Furthermore, developments of Application Programming Interfaces (APIs) to allow other applications to interact with GP system providers have not been forthcoming. The 2016 General Medical Services (GMS) contract states that all patients should have 'online access' to this data as well as other health care professionals treating the patient. To fully take advantage of sharing clinical system providers are working on interoperability to allow IT systems to talk to each other, this is currently not in the mainstream. However, even though there are limitations data sharing initiatives have taken place to allow some sharing of data to happen. There are two methods of sharing; direct data sharing and non-direct patient record sharing.

Direct data sharing allows clinical staff treating patients to have access to the appropriate information about the patient. This helps to improve the quality of service provided to the patient and improves the patient experience.

Non-direct patient record sharing is when information is shared to support and plan patient care. This could include proactive support offered to patients.

Summary Care Record (SCR) V1 this allows key elements of the GP held electronic patient record to be shared including medication, allergies, and adverse reactions to medication. All GP practices with LLR currently upload information to the SCR. The SCR can be accessed by any health professional in England that has a legitimate reason to access the information and also gains consent from the patient. This solution has allowed for direct data sharing of records taking place. Currently, it is limited in the amount of data it shares and crucially does not support care plans.

Medical Interoperability Gateway (MIG) V1 this facilitates the shares of a detailed version of the GP held patient record with secondary providers. Information can extensively help improve patient care for secondary providers who previously would not have had access to this information. The MIG can be accessed by any health professional within LLR that is using a clinical system that has connectivity to the MIG. The health professional also has to have a legitimate reason to access the information and gain consent from the patient to access the record. Currently, 140 GP practices are connected to the MIG along with all of the urgent and emergency departments within LLR. The LLR IM&T Enablement Group is committed to see the expansion of the MIG within other care setting such as Social Care. The MIG solution has enabled direct data sharing.



TPP SystemOne Sharing TPP (The Phoenix Partnership) is a clinical system supplier that has a one patient one record ethos, therefore any clinician that has access to TPP and explicit consent from the patient will have access to the full patient record. This solution has enabled direct data sharing. This has been deployed to clinicians throughout the local acute trust.

Minimum Dataset on discharge from UHL, Care Homes and Social Care will have secure access to a minimum data set snapshot that accompanies the patient with relevant demographics information and information on the care they have received. This has been trialled with a care home in the City and one in the county and is now being extended to Social Care.

3.1.2 Patient Access

Patient access to information about their care is paramount. In order to do this there has been a local enabler via the GP clinical systems to allow this to happen.

Patient Online all patients within LLR have access to a summary of their care record, the ability to book and cancel appointments and order repeat prescriptions.

3.1.3 Electronic Prescriptions

Electronic prescriptions allow for prescription scripts to be generated and sent to the practice directly. The patient turns up to their nominated pharmacy of choice and can pick up their prescription that is typically dispensed prior to pick up. Patient should also have the ability to order repeat prescriptions online and then pick these up at the pharmacy without having to go to the GP practice.

EPS2 is a national system to send electronic prescriptions from GP practices directly to a nominated pharmacy. Reducing the need to have prescription tokens and improving the quality of medication that is being dispensed. EPS2 is available in 95% of GP practices within LLR; and all 59 GP practices within the City of Leicester are enabled.

3.1.4 Electronic Clinical Correspondence

Clinical correspondence sent between health and social care organisations regarding the patient have been moved from a paper based process to an electronic process.

E-Communication our aim is to move from paper based communication to electronic based communication, through the methods built into clinical systems such as TPP SystemOne, bespoke web portals and the E-Referrals service. A plan will be in place to look at stopping paper being sent to GP practices where there is both an electronic and paper letter sent.

Electronic transfer of results and discharge letters currently GPs request pathology and radiology electronically and the results are electronically received. This has, in most parts, removed a paper based system and increased the speed of information that has been sent and received. The system used by the local acute trust has the capability of transferring the letter directly to the GP practice who then then allocate it to the patient record.

E-Referrals replaced the Choose and Book service, the NHS E-Referral Service (ERS) is now widely used within LLR GP practices. It was on built on the basic principles of choose and book and allows services to be directly booked electronically, offering patients more choice in providers, whilst assisting with referral to treatment time targets.

3.1.5 Business Intelligence

Data to support improved provisions of care and planning of care services are important to deliver the five year forward view. LLR have embarked on a number of business intelligence solutions to help the delivery of this.

Business Intelligence implementation of business intelligence tools such as GEMIMA (Greater East Midlands Information Management and Analysis), Risk Stratification (Adjusted Clinical Groups (AGC) tool), Health and Caretrak PI has allowed health services to appropriately manage and support healthcare provision. In particular we will extend beyond current use the range of functionality with the Adjusted Clinical Groups (ACG) system from Johns Hopkins University to both identify high risk individuals from various clinical populations of interest and to aggregate data to look at population health – both current and predicted. By providing interventions to patients who are at highest risk of re-admission to hospital, we will help to proactively manage the healthcare for those patients.



3.1.6 System Access

To allow for mobile and agile working for the workforce, LLR have taken steps to ensure that network access is available throughout our estate. This would allow staff to work from different locations and also access their work network from places that they've never had access to previously. Reciprocal arrangements are in place between public sector organisations in LLR to publish their wireless network device identifiers (SSIDs) to other organisations who have been approved to join the Federated Wi-Fi and signed a protocol.

Federated Wi-Fi sharing of organisational Service Set Identifiers (SSIDs) has allowed for staff to access their own networks across health and care organisations within LLR. This has also generated a number of Wi-Fi hot spots for staff to connect to rather than going to a base location. E.g. all practices, all care homes, UHL, LPT and some Council buildings are covered by the federated Wi-Fi.

At present the organisations using the Federated Wi-Fi are:

- Leicestershire County Council
- Leicester City Council
- Rutland Council
- Leicester City Clinical Commissioning Group
- East Leicestershire & Rutland Clinical Commissioning Group
- West Leicestershire Clinical Commissioning Group
- NHS Arden & GEM Commissioning Support Unit
- Leicestershire Partnership Trust
- University Hospitals of Leicester
- Leicestershire Health Informatics Service

The LLR IM&T BCT Enablement Group are working with remaining public sector organisations, such as the Police Service, as well as organisations that might find it beneficial to have access to the Federated Wi-Fi, such as Pharmacy sites and LOROS, to ensure the benefits of a Federated Wi-Fi can be fully achieved.

3.1.7 Pathways

Guiding professionals and patients to the right services ensure that appropriate care is given at the right place. Providing patient choice is important in accessing services.

PRISM is a locally developed web based application that works alongside TPP SystemOne and EMIS web. It was developed to provide a consistent approach to referral letters by standardised high quality referral letter reduce the variation, with a range of features designed to benefit the GP and other clinicians, providers and importantly the patient referral journey.

With complementing resources for both GP and patients that are held in one convenient location, ensuring that you have the most up-to-date information to hand for reference and printing when required. The referral letters extract patient demographics and clinical details from the patient record, including all required clinical tests and relevant patient responses are taken prior to referral. Letters are saved back to the EPR for future reference and audit purposes.

Directory of Services (DOS) is being developed for clinicians to quickly identify what services are available within a particular location. Work is on-going to ensure a central national DOS of services is up to date. Currently, this is compiled on an organisation by organisation basis.

3.1.8 Patient Focused Apps

With people growing increasingly reliant on their smartphones to access services such as banking, social media or general internet browsing. This is an important growth area for patients accessing health and care settings, communication methods and self-monitoring.

Smartphone and Tablet apps There are a number of applications that have been developed for patients such as Chathealth, Health for Teens, and Health for kids. All of these apps help patients interact with the service using new methods of communication.

Chathealth has been awarded an NHS innovation challenge prize by NHS England. ELR CCG also launched the 'NHS Now' App to help users to choose an appropriate destination when they need to access health care.



3.2 Rate limiting factors

There are various challenges that need to be addressed and solutions found to achieve the LLR ambition. These are:

Information Sharing Agreements (ISAs) Data sharing requires ISAs to be created and agreed between organisations. This can be limiting because if additional data fields are added to the share or additional organisations are added to the share the ISA requires an update. This then triggers a process of approval that can take up to 4 months. It is our vision for this to be a dynamic process, which will be underpinned by an overarching protocol with an easy to update and manage process which will allow sharing to take place in the most efficient way.

University Hospital Leicester (UHL) Electronic Patient Record (EPR) The upgrade of the UHL IT systems is underpinned by the implementation of a new EPR. The new EPR will enhance the digital maturity of the trust. It will provide a new platform for UHL staff to record and receive information. It will reduce the number of standalone systems in UHL and provide greater integration. This has been procured by UHL and planned to be implemented from the end of 2016 to coincide with the opening of the new Emergency Department. The current EPR is awaiting sign off by the Trust Development Authority (TDA) and NHS Digital.

Clinical System Providers There is slow progress with interoperability with clinical system providers which makes it difficult to develop new models of care with greater digital integration. System ecosystems are being created that are company specific. Additionally, slow progress is being made to mobile working. NHS England and NHS Digital are pursuing greater interoperability with GP clinical system suppliers though the GP Systems of Choice (GPSoC) contract.

Lack of Interoperability Some existing clinical and social care systems have not been designed with an interoperability component. Systems have been procured based on the key functionality needed for the workforce and interoperability standard was a

secondary consideration. The suppliers' products need further development to include minimum interoperability standards and national funding is the most economical means to achieve this.

High cost of portal providers with non-integration with key clinical information With the implementation of clinical portals to bridge the gap of true interoperability, these are available at high cost, have a long deployment timeframe and add an extra layer of system to maintain. User preference dictates that everything should be viewed and added to within the users' primary system rather than accessing a secondary system. This also prevents double entry, duplication and errors.

Technology uptake by workforce over the years many different technology initiatives have been deployed to health and social care professionals. This technology has not been fully exploited by the whole workforce and therefore not used all the time. This area requires support to ensure that business processes incorporate technology. This includes checking the Summary Care Record or equivalent to view patient's medications rather than ask the patient to remember their medication or bring it with them when they visit a non-primary care service.

Communication and engagement with people about health and social care technology by empowering people to understand what technology is available to them and encouraging them to actively use this to interact with the health and social care service. An example of this is for patients to use patient online to book GP appointments, request repeat prescriptions, and access their own medical records.

Non-Task based communications The current system of communication is very inefficient and carries a great risk of missing actions as patients move across pathways, moving to task based communications could be a useful way to improve this. Current letters for secondary care providers are structured in a letter format that requires the GP to review and identify what next steps are required for the patient. Moving to a task based format would allow letters to be more action focused, saving time and effort in annotation.



Nationally Commissioned Systems There is a move to have fewer nationally owned systems to locally owned and controlled systems. The local health community needs to be geared for the change and any financial implications of local ownership. The current set up with GP System of Choice (GPSOC) restricts local strategic direction for common clinical systems in the absence to true seamless interoperability between GP clinical systems.

Lack of Standardisation currently procurement for clinical systems are set at an organisation by organisation basis. This needs to move to a more standardised based approach to ensure that suppliers meet interoperability requirements that fit in with other local systems.

Cross Border Issues As locally designed systems and sharing are put in place there are issues with patients that go outside the Leicestershire and Rutland borders. This could result in lack of electronic communication going out to areas outside of the boundary. This can be mitigated by greater collaboration with bordering counties and the introduction of standards that map to national standards.

Care Plans Currently there is no ideal solution for dynamic care plans that are updateable and transferable by all health and social care organisations. LLR have explored a number of solutions to initiate data sharing to support care plans and is looking at a feasible solution by maximising existing technology.





4. Readiness

As the LLR health community has established governance there is strong leadership that supports the delivery of IM&T. This includes senior clinicians from commissioning and provider organisations taking the role of Chief Clinical Information Officers and Chief Information Officers.

The group also consists of non-executive director of a trust and a patient and public involvement (PPI) representative. It is also inclusive of leadership from other sectors such as the healthcare charities and the Police. Supporting this group is leadership from NHS England, NHS Digital, Commissioning Support Unit and the Health Informatics Service. The digital maturity index of major providers in LLR has a very high score regarding leadership with most well above the national average e.g. national average score 77, LPT 85, UHL 100.

Change management for digital transformation will be supported by the Better Care Together programme. This will be done by working with the clinical, workforce and communications workstreams. Tools like the NHS Change Model (figure 2) will be used to support digital transformation to ensure that it is not just the technology that has been implemented but the appropriate business change has been undertaken to gain benefits realisation. Exploitation and uptake of existing technology will start the change process. User feedback and any dis-benefits to change will drive continuous improvement. An example of this has been the GP clinical record view in the acute trust. The clinician had a large number of steps to get to

the information that they required as part of the GP clinical record was irrelevant to what they required. As a solution bespoke views were created for doctors and nurses so that the first view that they have contained the most relevant information that they required from the GP record.

The LLR IM&T health community have been working collaboratively over the last 5 years, since then there has been many projects and initiatives endorsed by the group and successfully delivered for the health community. These include many cross community wide projects such as EPS2, MIG and SCR. Therefore, as a health community we work well together and support technologies at scale. This work will continue to develop and evolved to fully implement the LDR. The core aspects of co-ordination, governance and delivery are already in place to ensure that LLR are ready to commit to changes within digital technology. It will also underpin the STP by working closely with clinical change delivery teams and ensuring that they have technology to support new models of care.

Prior to the LDR the LLR IM&T health community had held a number of workshops to create the strategic principles going forward. These strategic principles have been adopted by the LDR and built upon with the universal capabilities and additional capabilities identified within the LDR. There will be a seamless transition in the work that has been achieved in the past and going forward to support the delivery of the LDR. The health community will learn the lessons from previous projects and apply that learning to future developments. The LLR IM&T health community are committed in ensuring that the LDR ambition will turn into credible delivery plans and see change at pace and at scale.



NHS Change Model



Better care together

Leicester, Leicestershire & Rutland health and social care



Fig.2 NHS Change Model

Standardisation of approaches in accessing, recording and retrieving data is important to help reduce variation. This will be done in two parts, firstly at an organisation level and then at a cross organisation level. To do this there are business processes that are required to be rationalised. This includes planning to move to SNOWMED-CT coding, NHS Number as a primary identifier and Dictionary of Medicines and Devices (DM+D mapping).



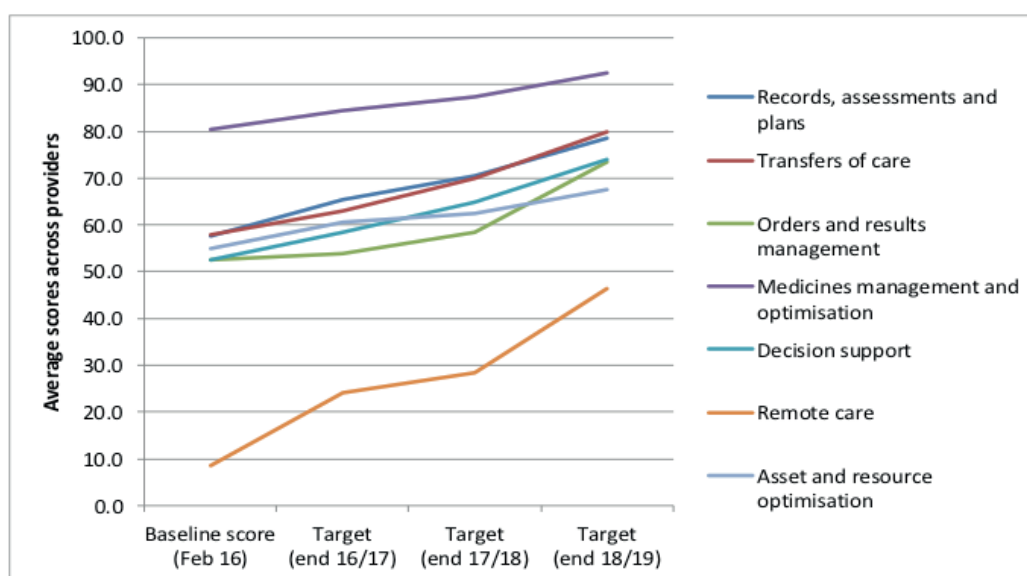


4.1 Digital Maturity

Providers have baselined their maturity in 2015/16. The health community will take steps to improve maturity of providers to ensure that they deliver a high quality service in informatics. The diagram below shows baseline and trajectory levels of digital improvement across LLR providers.

Footprint: Leicester, Leicestershire and Rutland (LLR)

Capability group	Average scores across providers			
	Baseline score (Feb 16)	Target (end 16/17)	Target (end 17/18)	Target (end 18/19)
Records, assessments and plans	57.5	65.5	70.5	78.5
Transfers of care	58.0	63.0	70.0	80.0
Orders and results management	52.5	54.0	58.5	73.5
Medicines management and optimisation	80.5	84.5	87.5	92.5
Decision support	52.5	58.5	65.0	74.0
Remote care	8.5	24.0	28.5	46.5
Asset and resource optimisation	55.0	60.5	62.5	67.5



Over the next three years we are planning towards developments that lead to a steady year on year increase from our baseline position in digital maturity across all of the 7 domains across our LLR providers. Our greatest increase in maturity will be within the Remote Care domain through which we will increase associated activity between 2017 – 2019 through a robust deployment schedule of activity to support a significant increase from the current LLR baseline position. Within the orders and results management domain we will see minor increase in maturity over the next two years with a sharp increase in deployment in this area in 18/19. Other areas where we will see a steady year on year incline over a three

year period in maturity is within the decision support and transfers of care domains with a year on year drive for digital improvements across LLR providers.

4.1.1 Analysis of results and trajectory of capability

The first iteration of the Digital Maturity Index (DMI) has set a baseline and comparison against national averages, there is a summary table that shows levels of scores achieved by the main providers in LLR (See Appendix 1). It is important that readiness, capabilities and enabling infrastructure are supported to improve maturity of organisations within LLR.





Strategic Alignment - Generally strategic alignment is quite high across the main providers. However, EMAS falls below the national average, LPT is very close to it and UHL have a level higher than the national average. Creation of a digital vision strategy and road map would increase this score. This could also be achieved with a service transformation programme document and clinical strategy to evidence alignment with digital vision and strategy. Project pipelines and minutes evidencing prioritisation, time to implementation and feedback to users regarding the process to support evidencing 'effectiveness' of the group in place would increase the score. Evidence of service improvement projects supported by technology, including deliverables and outcomes would increase the score. As it would to have a service desk metrics and user satisfaction surveys implemented.

Leadership - Is very high amongst all major providers with exemplarily levels within UHL. EMAS is slightly below the national average. By creating a board agenda and recording minutes including agreed actions this score would increase. This would also be done by ensuring the role profile/job description of the relevant Executive Director responsible for the digital agenda and Chief Clinical Information Officer (CCIO(s)) and that the job plans for the relevant CCIO roles indicating the time available for the role are in place.

Resourcing - Resourcing is high amongst all our providers with EMAS below the national average but LPT and UHL have achieved a score much higher than it. The score could be increased by creation of a procurement strategy and the alignment this with the digital vision and by ensuring that there is a contract management plan and governance arrangements for large (£1m+) suppliers in place.

A benefits realisation performance matrix in place: with benefit type with phased financial delivery trajectory would increase this score and worked example of a benefits line, identifying the operational process to realise the cash benefits. Recording of the number of Whole Time Equivalent (WTE) employed in the services described to provide a headline understanding the capacity; name and qualifications of the clinical safety officer at the Trust, and the most recent clinical safety case submitted

to NHS Digital would increase the score. As would having an organisation chart, including roles and responsibilities for technology and transformation functions. Creation of a three year workforce plan for technology capability: evidencing scope of skills sets required: technical, change management, programme management, clinical and communications skill sets would increase this score.

Governance - This is high amongst all our providers although EMAS's score is a fair way below the national average and LPT are just below it. UHL have achieved a score much higher than the national average. This score could be increased by the creation of a digital programme summary document and business cases to support digital programme(s). As well as ensuring that a programme governance structure, with board membership, and minutes to evidence attendance are in place.

Creation of information and clinical risk management strategies, assessments and resulting action plans and having benefits realisation plan and transformation / cost improvement plan, supported by evidence to demonstrate no double counting would increase the score. As would information and clinical risk management strategies, assessments and resulting action plans. Evidence in place to support the adoption of technology and use of standards would increase the score. Adoption and use to be evidenced through 2/3 key processes: e.g. requesting an x-ray from fracture clinic, reporting of a Full Business Case, use of standard discharge summary. Examples of the application of best practice guidelines in practice are in place would increase the score.

Information Governance - For Information Governance EMAS falls well below the national average whilst, Leicestershire Partnership Trust (LPT) is very close to it and UHL have a level which is much higher than the national average. The development of a cyber security strategy, and work plan to implement strategy, including evidence of resourcing would be evidence to increase score. As would a cyber security work plan to evidence how the organisation engages with cyber security industry intelligence, achieves penetration testing evidence, and promote staff awareness. Providing a sample of Disaster Recovery plan and having Business Continuity Plans by information asset in place will increase the score.



As would evidence of third party policies and audit of compliance with data destruction processes exist and third party contracts from suppliers, such as hardware suppliers, to evidence compliance with IG requirements. The score could also be increased by having a digital asset register in line with IG Toolkit requirements. The creation of staff training records, evidenced through IG Toolkit framework would increase the score. Evidence should also exist of regular reporting to a Board subcommittee.

Records, Assessments & Plans - The score for EMAS is below the national average for this with LPT and UHL being slightly above average. Indicative evidence to support the increase of this score would be the recording of the percentage of historic records scanned in relation to the whole archive. Evidence to show how these records are made available and are integrated with the contemporaneous records (on paper or electronic) would also include the scores. Recording of the percentage of patients treated without reference to their paper notes for inpatients and outpatients, to be evidence by the notes being requested for relevant admission or attendance.

Where possible, evidence for specific capabilities e.g. prescribing, radiology and pathology test ordering etc should be recorded and would increase the score. Evidence that clinical functionality has been put in place to enable clinicians to access systems and data while off site and the recording of evidence to demonstrate the volume and usage of pre-populated order sets, template discharge summaries and letters would increase the score. As would the ease of use, e.g. average log-on times, single sign-on, and the ability to enter data into native systems through a single portal and use of voice recognition technologies or digital dictation to support data entry. Point of care information capture evidence would increase the score this is: Percentage of inpatient spells where clinical documentation is captured digitally, and the percentage of outpatient (new and follow-up) visits

were clinical documentation is captured digitally. The providers' ability for information to be received from and sent digitally to external providers will increase this score.

Transfers of Care - LPT and EMAS scores both fall below the national average for this and UHL have a higher than average score. This score could be increased by evidence that a discharge summary template, and evidence of transmission format i.e. electronic are in place. Or by providing evidence to demonstrate compliance with Academy of Medical Royal Colleges documentation standards, in terms of discharge summary lay out and content. Recording the output from audits of clinical content by primary and secondary care clinicians would also increase the score.

Orders & Results Management - EMAS have recorded as score of zero for this section because they do not directly order tests, LPT are well below the national average whilst UHL have a very high score. Indicative evidence for this would include the creation of policies and procedures regarding patient identification and specimen labelling and the use of barcoded technology. As would evidence of the clinical functionality to enable doctors and nurses to track the status of the specimen or test through the laboratory process, to alert and escalate abnormal results, alert of pending tests or results prior to discharge and in respect of alerting on previous orders and results to reduce usage, and clinical decision support functionality.

Creation of a list of diagnostic tests available digitally, and the pipeline for further development would increase the score and also by having a list of results and images that are shared across the hospital and with other care settings. Recording of evidence to demonstrate whether order sets are tailored to clinical conditions, pathways, specialties or settings (inpatient/outpatient) would also increase this score.





Medicines Management & Optimisation - The score from EMAS is very near the national average for this and LPT and UHL have a much higher level than it. There are a number of ways that evidence of this can be demonstrated and increase the score including the percentage of medicines reconciliation undertaken on admission, and the process for inpatient, discharge and outpatient medication prescribing. Also the range of medicines prescribed electronically, including consideration for infusions, sliding scale, variable dose and rate regimens, paediatric dose checking, chemotherapy. Ensuring that order sets are in place for common conditions and the use of reference sources like the British National Formulary. Scores would be increased by evidence that the recording of process for the completion of medication-related patient risk assessments are completed – e.g. Venous Thromboembolism (VTE) assessments – and associated alerting. Providing evidence that processes for administration, patient identification and monitoring of doses, interactions, timings, including process for alerting of missed medications are in place. Evidence in place to demonstrate compliance monitoring of alerts, the process for monitoring antibiotic practice and stewardship and description of Adverse Drug Event (ADE) monitoring and yellow card reporting to the Medicines and Healthcare products Regulatory Authority (MHRA) are in place.

Decision Support - The three providers are above the national average for this with LPT recording a much higher score. Indicative evidence of this would be to have documented task lists and pathways, and evidence of monitoring of pathway compliance. The score would also be increased by having documented audits / monitoring of overruling of best practice advisories. Also by providing evidence of the extent to which functionality alerts for patient preferences (e.g. end of life care), allergies, and deterioration in patients is used. As well as the existing functionality to enable clinical decision support and the functionality to prompt questions about public health actions like vaccination and smoking cessation. Digital system support for the completion of statutory and organisational discharge planning processes, including communications with social care agencies would also increase the score.

Remote & Assistive Care - All of the providers are well below the national average with LPT reporting a zero for remote and assistive care. By increasing

the use of videoconferencing tools for consultations and collaborative working ensuring that the required clinical governance processes are in place will increase this score.

Asset & Resource Optimisation - EMAS and LPT are below the national average but UHL have a much higher score than the average. A way to show evidence and to increase this score would be to show use of bed management system functionality, including the extent of its coverage across the organisation, and whether it interfaces with the Patient Administration System and / or the clinical record or Radio Frequency Identification (RFID) tracking. This score would also increase by evidence of rostering functionality, including coverage across the organisation, evidence of monitoring the effectiveness of rostering, and documented management action to improve. The use of RFID tags on equipment and evidence of analysis performed e.g. utilisation; location etc would also improve the score.


Standards - EMAS is well below the national average whilst LPTs score is slightly below. UHL have a very high score that is well above the national average.

Enabling Infrastructure - All of the providers score well on enabling infrastructure. Although EMAS is slightly below the national average, LPT are slightly above and UHL well above the national average.

All of our providers are committed to improving their Digital Maturity and have started to initiate plans to help improve levels of maturity. Improvements in digital maturity will improve the quality of the service, support innovation and support the delivery of paper free at point of care. Digital maturity measurements will be used as a marker to monitor the quality of provider and through shared learning and knowledge management on a local and national scale will help drive improvements in patient care through technology. It would also ensure a secure infrastructure as well as allow for greater innovation within the health and social care service.

The Digital Maturity assessment currently only covers 3 provider services, it is envisaged that further providers and commissioners Digital Maturity Index's will be included within future versions of the Local Digital Roadmap.





Case Study

Improvements in Digital Maturity at Rutland County Council

LiquidLogic went live in 2016 as Rutland County Council's Adult and Children's Social Care case management system, meaning that all three LLR Local Authorities are running the same case management platform, albeit with differences in the detail of implementation. Going forward, this offers the opportunity to exploit the integration capabilities of LiquidLogic jointly in future health and care integration projects across the LLR footprint.

Locally, LiquidLogic has ensured the Council can continue to maintain its records in electronic rather than paper format. It has also streamlined and accelerated case management activities through improved task based workflow. The Council plans to enable a range of further LiquidLogic capabilities supporting the efficient and effective planning and management of care. In particular, it plans to enable 'briefcase' functionality that will allow offline access to relevant social care case records whilst on the move (most staff are already equipped with laptops), enhancing mobile and collaborative working.

While there is not as yet a fully integrated, shared view of the patient/service user record across health and social care, other improvements are supporting coordinated working around the individual. Federated wi-fi and network access is has removed one of the barriers to peers working directly together, be it at the operational or management level. It is making a significant difference where health and care colleagues are collocating to provide more integrated services, whether at GP surgeries, acute and community hospitals or at the Council. Each party has access to their most up to date information. This also means that teams are increasingly ready for integrated digital solutions, making it more likely that forthcoming digital projects will be successful.

Partners are also working to evolve the service user relationship in Rutland. In social care, an Autonomy module is being implemented that will allow service users to complete a high level needs assessment. In addition, it will provide a means through which secure communication can take place, offering a secure alternative to traditional correspondence for those who wish to communicate in this way.

In terms of access to information, Rutland County Council is renewing its corporate website to improve ease of use, allow improved integration with back office systems and to improve content management, allowing relevant information to be delivered more effectively. The Council's information and advice portal, the Rutland Information Service (RIS), is also being enhanced. This is used by the public directly and by intermediary advisors and signposters.

Three specific planned improvements are:

- To enhance the organisation and presentation of content about services and opportunities that support wellbeing locally, encouraging self care.
- To introduce a module allowing service users to identify suitable personal assistants if they wish to arrange this service for themselves.
- To improve self-service access to assistive technology products, small adaptations and other equipment that helps to support independence, also enabling purchasing.

In parallel, a number of projects in the County are working to encourage more people of all ages to get online to access information and services - an essential complement to the aim of enabling more digital services and moving away from paper based communications.

Technology is also being deployed in people's homes to improve wellbeing. The County operates an assistive technology scheme under the Better Care Fund, delivered by Spire Homes, which includes telecare alongside a range of other types of equipment, and is exploring the potential for increasing telehealth activities (at home health monitoring) as part of long term condition management. Assistive technology is proving particularly beneficial for those with dementia, and having a tangible impact for carers, including by increasing peace of mind.

The Rutland Better Care Fund is also supporting a partnership based pilot to trial interaction with selected service users via video calling, something with strong potential to improve the care of patients living complex or unstable conditions in a rural area.



4.2 Benefits management

The Local Digital Roadmap outlines how the LLR health and social care community will modernise IM&T to benefit the population of LLR. It has been acknowledged locally that this scale of change over the next 5 years will require all member organisations, key staff and stakeholders to have varying responsibilities in the process of delivering benefits in support of the overarching strategic aims.

LLR community will adopt an overarching locally agreed benefits management framework to enable organisations to drive and unlock the benefits of the changes that are and will be incrementally be taking place over the next few years. It is planned that all key programmes and projects will be subject to this consistent approach being applied to ensure level of corresponding investment and/or a necessary imperative to implement change is clear and robust. In order to support the effective implementation of this framework it will be necessary to ensure a central and outcome orientated programme of work is in place capable of providing the rigour to support benefits realisation. The LLR approach to benefits management will have the below activities at its core and will:

- Provide on-going alignment and clear links between the range of change programmes and organisational / LLR strategic objectives
- Ensure benefits will be identified, defined, and clearly linked to outcomes to support initiative prioritisation
- Ensure benefits will be confidence assessed to ensure they are achievable and verifiable to support the development of business cases
- Ensure that the affected parts of organisational functions understand their responsibilities and the critical role they play in benefit realisation, and are able to commit to undertaking those activities
- Actively drive the process of realising benefits, which includes actively measuring, tracking and recording benefits during the period of benefits realisation for projects
- Provide a “benefits roadmap” that serves as a continuing focus for the delivery of the priorities identified within this roadmap and the necessary changes that need to occur in operational areas

Benefits outcomes from IM&T change initiatives and projects will be identified by the Clinical Workstreams of the BCT programme. This includes quality improvements and cost savings. Support will need to be given by the Workforce and Communications Workstreams to ensure that the workforce embraces the change and patients are aware of how changes can support them.





4.3 Funding

Implementation of information technology and supportive business change invariably requires funding to delivery desired outcomes. Any requirements for funding needs to demonstrate value for money and a return on investment. The return on investments can be evaluated by both cost savings and improvements in quality.

All requirements for funding will be underpinned by robust business cases that demonstrate the benefits of delivering the change. The protocol for requesting funding may change depending on the source of funding. It is envisaged that health community wide funding requests will be reviewed by the Better Care Together LLR IM&T Enablement Group and organisational level funding will be reviewed by existing governance structures within the organisations.

Sources of funding have been identified both externally and internally within the organisations. However, internal funding has been constrained with funding pressures. Here is a list of funding sources that the Local Digital Roadmap will draw upon:

External	Internal
Estates and Technology Transformation Fund	Organisational IM&T budgets
Paper free at point of care funding	GP IT
AHSN supported funding sources	2% Non-recurrent revenue
European grants	Sustainability and Transformation Plan funds
Digital by design	Better Care Together sourced funding for Clinical Workstreams
Contact point/centres	Vanguards
Industry partnership	Better Care Fund

A finance lead from a CCG will be assigned to IM&T to ensure financial due diligence for funding bids and to manage funds received to support paper free at point of care. Other sources of resource may also be considered that require limited funding such as University's and social enterprise partnerships. Additionally, new avenues of funding will be explored working with organisations such as the Leicester & Leicestershire Enterprise Partnership and Academic Health Science Network.

IM&T funding will require both capital and revenue requirements for funding. It is important to have identified this when sourcing funding. It is envisaged that individual business cases for funding will identify the total cost of the project including identification if funding sources differ for capital and revenue.



4.4 Estates and Transformation Funding (ETTF) to Support LLR Technology Priorities

In order to create a sustainable LLR health and social care economy we recognise the need for technology capital investment alongside long standing priorities around estates and facilities within Primary Care. To support our work and to allow us to enable a Primary Care infrastructure that can deliver and sustain the demands within the five year forward view locally we have focussed our efforts on three vital developments for technology investment across LLR for which we require Estates and Technology Transformation Funding (ETTF) 2016-19 to help us in delivering our ambitions.

Interoperability and Record Sharing to Support Care Planning

The need for a care planning tool has been a local priority for a number of years; this has been brought into focus most significantly for End Of Life Care Planning. During 2015/16 we focussed on a Unified Care Plan, with consideration by all to utilising standard codes and templates. At BCT board level it has been highlighted for the need to integrate care planning tools into the usual day-to-day systems used by clinicians which is the preferred solution locally. During the second half of 2015 we investigated the level of integration locally, and developed a high level strategy for improved care planning through use of integrated systems, rather than isolated off the shelf tools. The conclusion of investigations were that we would pursue the exploitation and optimisation of:

- TPP SystemOne
- Medical Interoperability Gateway (MIG) Solution
- Summary Care Record (SCR)

Over the coming three years from 2016/17, we will, through integrating and improving data flows, ways of working, standardised codes, protocols and flags in as many systems as the integration technology will allow, we will give care professionals and carers access to all the data, information and knowledge they need through real time system integration.

Technology Enabled Patient self-management across General Practice

Patient self-management is a local priority with local engagement work highlighting the need to use IM&T as key enabler to support primary care developments in the local area and is driven by our locally agreed IM&T strategic principles around system wide efficiencies. Local GPs and commissioners acknowledge there is a real opportunity to improve patient outcomes through better patient self-management using remote monitoring devices and associated electronic mobile application based solutions with portal access or direct links to clinical systems.

We have experience of electronic self-management technology in relation to blood pressure monitoring due to us undertaking a pilot project in 2014 / 15 using the Flo Telehealth system. We have learnt valuable lessons and want to take the good practice from that project to rollout patient self-management on a wider scale in terms of medical conditions with a more innovative tailored local solution on a larger population scale i.e. across LLR.

Across LLR where there are GP Federations / GP Hubs forming, working towards innovative delivery of care in the community through new and innovative ways of working. Our plans over the next three years from 2016/17 involves supporting these developments starting by tackling Hypertension during level 1 (first) diagnosis, monitoring and medication compliance stage through GP led, patient interactive, technology enabled self-management tools. We will offer all General Practice across LLR technology enabled equipment such as SMART monitoring devices that link to a mobile applications.

We want to improve the outcomes for the local patient population by enhancing the practice offering through the use of a locally tailored and effective technology solution through deployment of electronic health monitoring devices to high risk patient cohorts and associated mobile phone health applications to enable patients to take control of their conditions.



System Integration and Joint Working Hubs

In continuation of good work from previous years and in support of CCG strategic direction of travel we will support practices and embark on a three year programme from 2016/17 across LLR CCGs to move the local clinical system estate towards a single interoperable platform. We firmly believe this will improve interoperability and information sharing across the healthcare landscape. Currently our community services provider operates and main acute care provider use the same platform and enables sharing of critical information directly at the point of professional / clinical need.

There is a willingness locally within the CCG demographic areas to move to a single interoperable platform, with practices migrating from current

system arrangements . CCGs are receiving requests from practices to move towards a single interoperable platform. The CCGs understand their GPSoC obligations and will continue to support practices in their choices of clinical systems platform.

In addition and to support integrated working across the primary care landscape and the move towards seven day services, it is planned to introduce hub type systems to allow locality areas to see and treat patients that aren't theirs whilst having access to their clinical information which will ultimately provide better and informed care decisions for our patients. To enable these hubs to work effectively, the move towards a single interoperable platform is critical to the success of these services.





4.5 Overarching Governance and Co-Ordination

The governance that will oversee the delivery of the Local Digital Roadmap will conform to existing governance structures as part of the Better Care Together Programme. Therefore, the IM&T Enablement Group will oversee the delivery of the Roadmap. LLR Chief Officers will be responsible for and sign off the STP and the LDR. This ensures that's both documents are aligned and that the digital strategy weaves a golden thread of delivering and enabling the STP. Figure 3 shows the current governance structure to help deliver this Roadmap.

Change management of technological changes will be delivered through the Better Care Together Clinical Workstreams that will help deliver the necessary changes required.

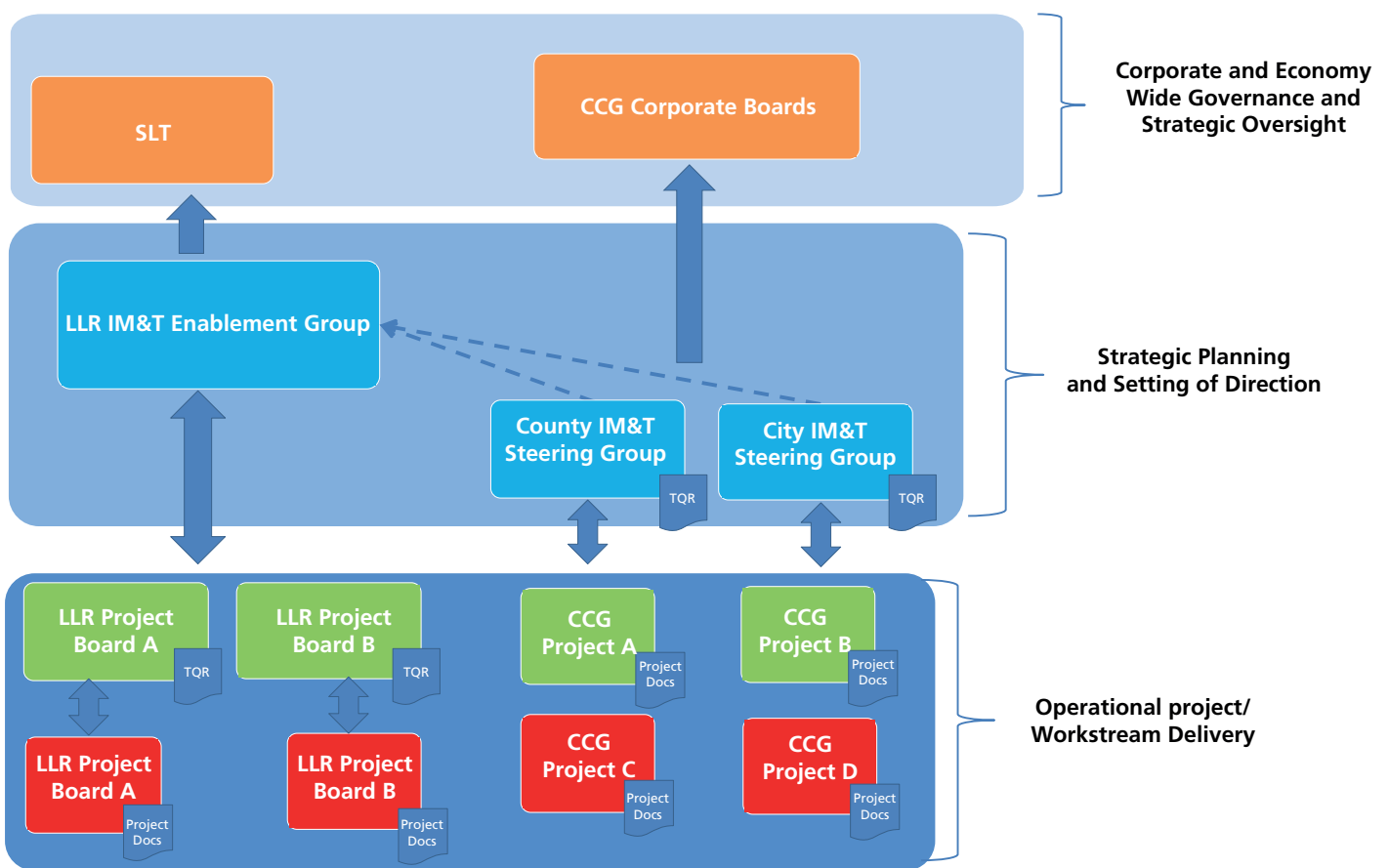


Fig.3
LDR
Governance
structure



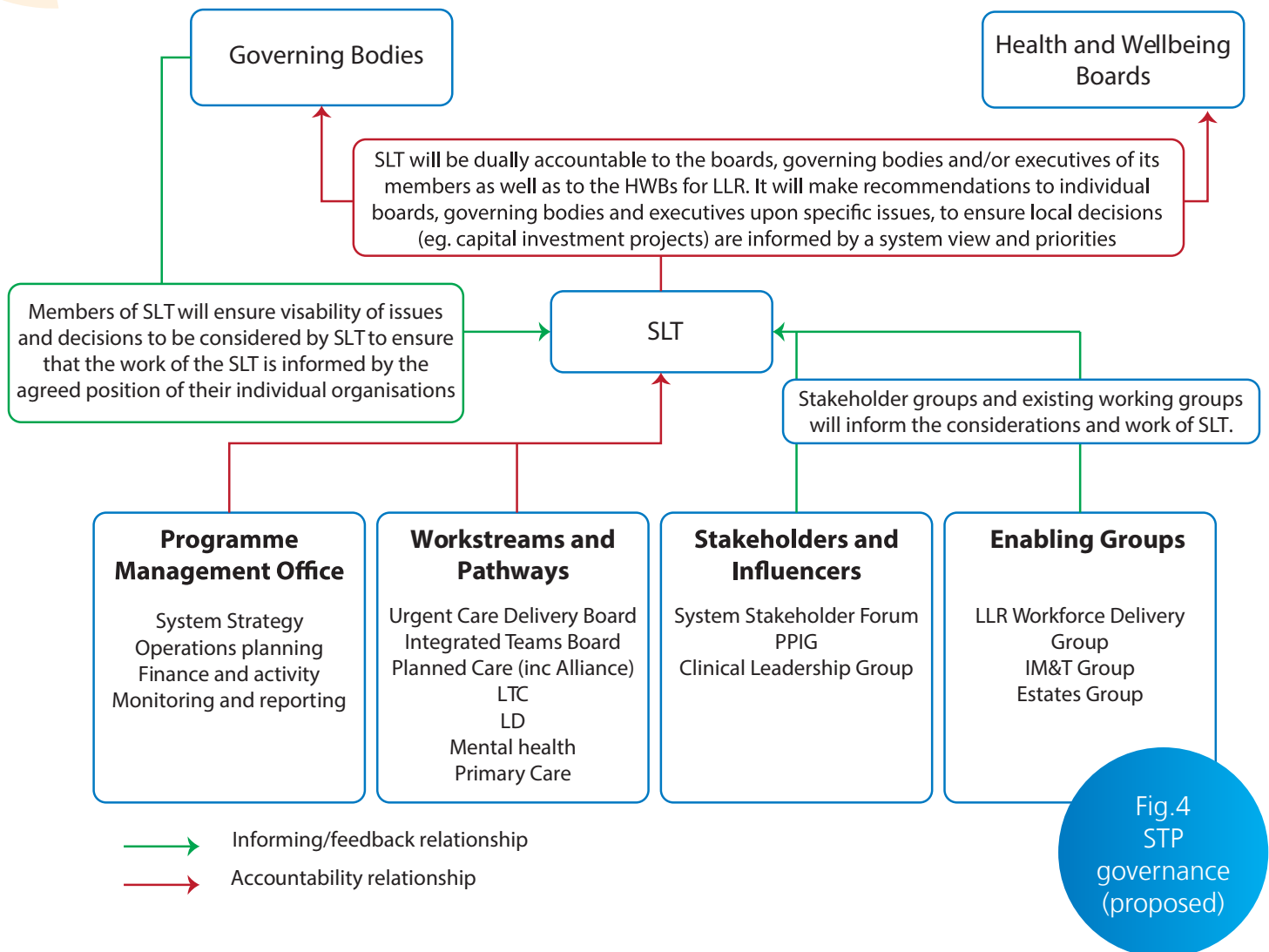


Figure 4 shows the proposed overarching governance of the STP programme. The IM&T Enablement group will work with existing workstream and pathways groups and inform the considerations and work of the Senior Leadership Team (SLT) group. This will ensure that alignment is with the STP and LDR remain consistent. The IM&T SRO will be a member of the SLT. A review will take place with Workstream and Pathway SRO's to ensure that IM&T projects will be accountable and deliverable to key STP Workstreams. This will ensure that the capabilities plan is focused on supporting the delivery outcomes of the STP.

The following boards have endorsement of the Local Digital Roadmap:

- BCT LLR IM&T Enablement Group – 09/06/16
- SLT/BCT Delivery Board – 13/06/16
- LLR Chief Officers – 04/07/16
- County Integration Executive (Inc. Health and Wellbeing Boards) – 28/06/16
- UHL Executive Board – 30/08/16
- Rutland Integration Executive (Inc. Health and Wellbeing Boards) – 29/09/16

The groups had a presentation of the Local Digital Roadmap and had opportunities to provide comments on this document that will help to develop it in future iterations. In addition to these groups the LDR has been to CCG boards for approval and comment. It has been presented to these groups as papers to formal boards. Health and Wellbeing boards have had sight of the LDR through integration executive groups.



LLR IM&T Enablement Group

This overarching group for IM&T across LLR is the leadership group that holds accountability for the delivery and further development of the LDR. The LDR is held jointly by a Senior Responsible Officer John Clarke (CIO - UHL) and Chairman of the group Dr Tony Bentley (Board Member/CCIO - Leicester City CCG) who provide executive level leadership. The LDR has been constructed and maintained by Vikesh Tailor (Head of Systems Enablement – AGEM CSU). Contribution to the LDR has been sort by all members of the LLR IM&T Enablement Group. The group has representation of all CCGs, local authorities and key providers within LLR. This also includes three clinical representatives; Dr Tony Bentley (Board Member/CCIO - Leicester City CCG), Dr Nick Pulman (Board Member/CCIO – West Leicestershire CCG), Dr Steve Jackson (CCIO - UHL. The group also includes a patient participation representatives and also representatives of the wider stakeholder group such as the Local Pharmacy Committee and the Police.

The group members are:

FIRST NAME	LAST NAME	ORGANISATION (Alphabetical order)
Vikesh	Tailor	Arden & GEM CSU
Simon	Clements	Arden & GEM CSU – IG
Mary	Barber	Better Care Together
Andrew	Ahyow	East Leicestershire & Rutland CCG
Sharon	Rose	East Leicestershire & Rutland CCG
Tim	Sacks	East Leicestershire & Rutland CCG
Steve	Bowyer	EMAS
Tony	Bentley	Leicester City CCG
Clare	Sherman	Leicester City CCG
Ashok	Popat	Leicester City Council
David	Mell	Leicester Partnership Trust
Steve	Pugh	Leicestershire County Council
Simon	Edmonds	Leicestershire County Council
Luvjit	Kandula	Leicestershire Pharmacy Committee
Tim	Glover	Leicestershire Police
Ian	Wakeford	LHIS
Tirath	Singh	LHIS
Aruna	Garcea	LLR Alliance
Alison	Tyers	LLR Alliance
Gemma	Miller	LOROS
Luke	Feathers	LOROS – Palliative Medicine
Mike	Kitching	Patient Participation Rep.
Sandra	Taylor	Rutland County Council
John	Clarke	UHL NHS Trust
Steve	Jackson	UHL NHS Trust
Nick	Pulman	West Leicestershire CCG
Ian	Potter	West Leicestershire CCG
Jennie	Caukwell	West Leicestershire CCG



4.6 Portfolio, Programmes and Projects

To deliver the LLR ambition of paper free at point of care there needs to be a robust structure with delivery and monitoring of projects. LLR based projects will be delivered through dedicated project boards following PRINCE2 principles. The boards will contain key stakeholders from the Health and Social Care community to provide assurance to ensure projects are appropriately delivered. This includes delivery within key constraints to be on time and within budget. Individual groups of projects are grouped as programmes and reported at a portfolio level to the Better Care Together LLR IM&T Enablement Group.

The governance framework for this structure is currently in place allowing the delivery of programmes to take place from 2016/17.

The LLR IM&T community will work together to ensure that resources are used in the most effective way. By aligning common goals for delivery organisations will work together to deliver whole system change. This includes all of the activities required from the change programme including design, build and deployment.

4.7 Technology Enabled Research and Innovation across LLR

The promotion and conduct of research is a core NHS function. Locally there is recognition that technology enabled research is growing fast and will provide both the new knowledge and the evidence base required to innovate and improve health and social care across (and beyond) LLR in the future.

Increasingly technology is playing a key role in conducting and supporting research studies. Given the pace at which we are moving towards a local paperless LLR and due to its very nature the introduction of technology produces electronically generated data which can often be deemed of clinical research value. However with this capability the implications for patients' needs to be considered, especially regarding access to patient data for research, and data transfer which involves storage outside of NHS secure data storage facilities (e.g. on the Cloud; out of Europe). The governance of research, now being processed through Health Research Authority Approval, will need to be future proofed for the digital age.

Increasingly research is being designed which utilises near patient technologies, for example research interventions employing telehealth , digital devices and smartphone apps for the purposes of patient self-management of health conditions. Whilst it is recognised that technology is enabling meaningful interconnectivity between research and innovation, LLR partners recognise such technologies need to address the implications for the data protection of research participants.

Technical capability is accelerating at pace in the NHS and in the lives of our local populations. However, this pace and the immediacy with which new technology is employed, can outstrip the capacity of researchers to employ innovation in the design of their research, especially in their approach to methodology.

Interoperable electronic patient records, linked across primary and secondary care, have huge implications for the identification of patients to recruit to clinical research studies, and for increasing the patient's right to be involved in research under the NHS Constitution. Given interoperability is a priority for us, we aim to keep abreast of developments to inform strategic thinking around how technology enabled research should evolve in our area.

We are seeing more and more research studies coming through LLR via commercial organisations, academic institutions, 3rd sector and provider organisations to support both internal and external studies for example in relation to medical areas such as Diabetes, migrant screening programmes and dementia related research projects.

Below are examples of how local Research and Development projects are now and will be further supported by technology across LLR:

- 1) There are those which have heavy reliance on data captured from GP practice systems
- 2) Increasing number of initiatives that are moving towards reliance on patient based devices to enable remote capture
- 3) The increase in the use of electronic survey software
- 4) The use of digital transcription technology



5. Capabilities

5.1 Paper free at Point of Care groups of capabilities

5.1.1 Records, assessments and plans

Care Plan Having an electronic care plan for all patients that require a care plan. This includes patients that need it the most like the management of dementia and EoL Care. We believe that electronic care plans can enhance and compliment patient care. A dynamic care plan that can be viewed and updated by any health or social care professional involved in the care of the patient. This will be delivered in phases, firstly by maximising national solutions like SCR 2.1 and other local solutions such as SystmOne sharing and MIG. Further phases will include patient centred care plans spanning across Health and Social Care and ensuring that there is a single point of access for a patients and professionals to access care plans.

In Social Care it is important to have integration of systems with providers for quick electronic imports of care plans sent with confirmation of service day/ time slots for communication to service users. Provider Portals to securely send instructions for Care Plans to providers. Such technology can also then be used to record actuals and thus pay on actuals rather than contracted services which will reduce the costs paid for services to clients. Provider quality assessment measurement and exception reporting systems are also required to assess the performance of care being provided patients / clients. This will also assess provider responses to alerts when care is delayed or missed. Broadcast alert systems to key partners will also help trace missing young people and protect young people at risk of exploitation (extension to Child Protection Information System (CP-IS)).

Clinical Portals Traditional portals looked at holding central data of all patient records. LLR will look to modern forms of portals that work with native clinical systems and interoperate. The portal solution will act as a dynamic reference point for certain data fields. Where sharing is already available of patient data then the portal will not hold any data. The portal will act on a transactional and task basis. The portal will also provide a single point of access for patients for multiple care settings and social care. The new portal will be a connected model. The portal may utilise national systems and platforms such as SCR or the SPINE to hold data. The portal will act to reduce duplication. The portal will allow data to fluidly transfer between care settings until all systems are interoperability standards based. It will be a central repository of patient data, linked via Application Programming Interface (API) connections.

Shared Central Records ideally national held record this would either be an extension to SCR or locally defined solution. Due to the rationalisation of the number of local systems, interoperability will allow for greater sharing to take place. The NHS number used in real time as a unique identifier, will be paramount in ensuring that the correct records are shared. A robust information governance process to gain and record consent will be required to make this possible.

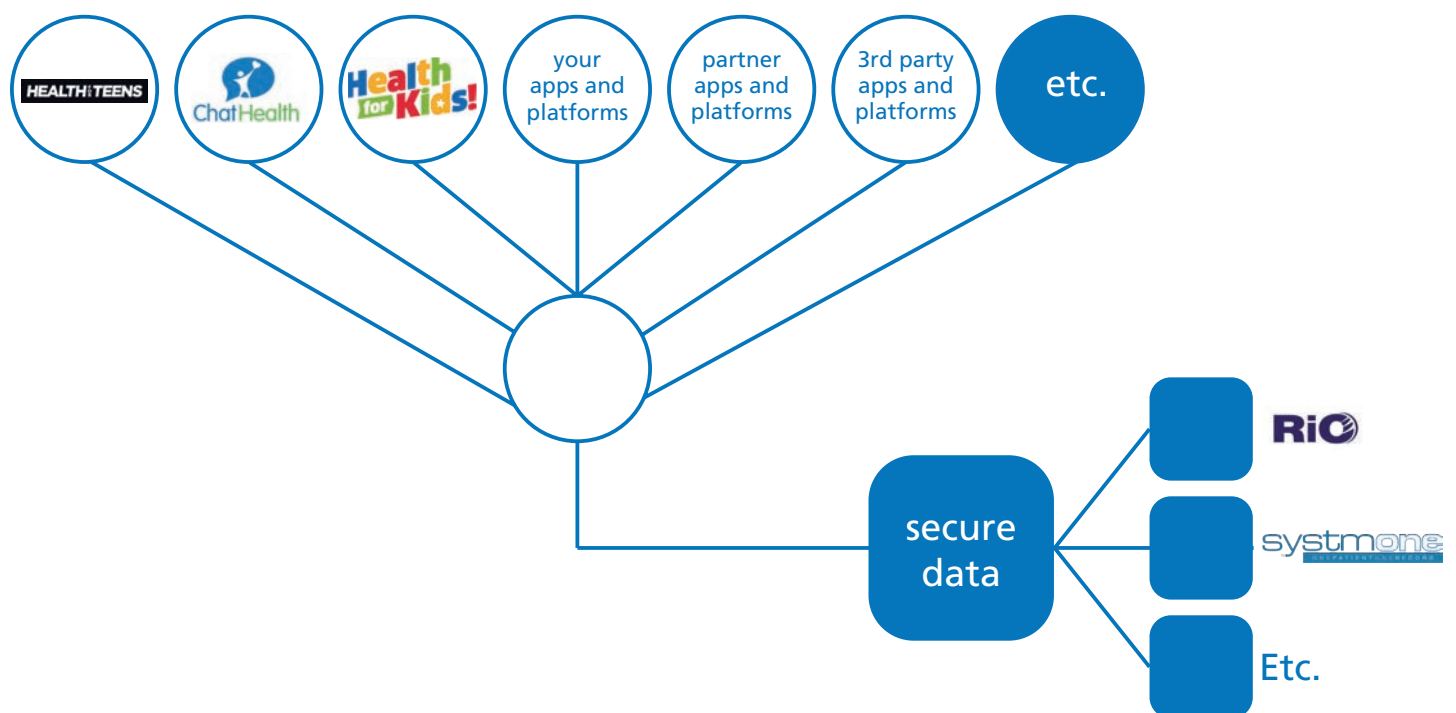
Local Authority Sharing sharing between social care systems will be reviewed as there is a move to common systems across the three social care authorities.



Citizen Identity (Unified Identity Management) a wellbeing account will be set up to give patients one username and password to access multiple health and social care applications. It will allow for quicker access to applications and increase usage by making access easier for the population.

There will be a Single Identity Management approach within the LLR area. A member of public in LLR will be able to use a single log-in and password to access confidential information securely about their health and social care and to securely interact digitally with organisations and practitioners supporting their health and social care. The same log-in will be used to interact with the various different organisations that are commissioned to support the population's health and social care, making it simple and straightforward for a member of the public to take control digitally of their health and care. The one log-in approach will also provide the opportunity to integrate information from multiple organisations and better join up the care system within the region.

This approach will allow the creation of a multitude of different applications and websites for individuals to access, contribute to and interact with secure data through the identity management system (referred to as wellbeing account in the diagram below). This will create a 'digital ecosystem' for the region that will be demonstrably secure, delivered within the requirements of the Data Protection Act, join together information purposefully to aid members of the public to self-serve and take greater control of health and care.



The single identity management system will link with the National Citizen identification Programme to verify identity using robust standards and maximise the opportunities to be aligned to this programme as it develops. There will be a single responsible officer representing all statutory health and social care organisations serving Leicester, Leicestershire and Rutland who will be the lead interface with the National programme. This individual will utilise a collaborative senior group of representatives across all of these statutory organisations to govern the identity management and identity verification approach across the region including the selection of organisations to support the verification process.



Information Capture touch screen and voice recognition equipment for staff for case recording for social workers, as well as voice recognition software to help more easily record information in case management systems. This will reduce the time and effort required by professionals to update case management information and thus be able to spend that time with clients/patients/service users. This will be accompanied by appropriate processes to assure the accuracy of this facilitated recording. Voice recognition and digital dictation for health staff would provide an alternative method of data capture. With this integrated within the clinical system such as SystmOne or EMIS will provide a seamless mechanism to capture data without having to type.

Standardising Clinical Terminology (through adoption of SNOMED-CT) all clinical systems will be required to be able to code using SNOMED-CT. Those that do not will have to map to SNOMED-CT and have a progressive plan to move to become fully SNOMED-CT compliant.

Living well (Supporting health and wellbeing) the LLR population will have the ability to use their own records to support improvements to their own health. Members of the population may use consumer technology like Fitbits/Apple watch to measure activity to improve their fitness. They may also use smartphone apps to support a healthy lifestyle. Guidance to patients on the best choices will help their health and wellbeing. Keeping the population healthy will help to reduce the burden on healthcare providers. Research into national and international innovation will be done.

Interoperable Systems open Electronic Health Records (HER) standards and open standards will be driven through existing systems. The LLR health and social care community will look at the development of an Integrated Digital Care Record (IDCR) through nationally set interoperability standards. There will be a locally agreed set of standards to ensure any procurement exercises of IM&T systems will adhere to this standard. These standards will align to the NHS England Interoperability Handbook.

MIG maximise usage and support expansion of the existing MIG V1 system across LLR. The health community will look to see where the MIG

can support in care planning and sharing of the patient record. Providers not included within the first implementation of the MIG will be supported to implement the MIG such as Social Care, GP federations, and palliative care organisations. An updated version of the MIG called version 2 adds additional functionality to the existing MIG V1. It looks at structured data (to allow for professionals to view data in the best way to support patient care). It also has the ability to add on additional datasets from the GP record to be visible such as an End of Life care dataset.

SCR the LLR health community is committed to supporting the Summary Care Record and maximising the current version usage. This includes expansion of SCR to other providers that currently do not have access to SCR. By enriching the SCR and implementing Version 2.1 of SCR the health community has the opportunity to add additional datasets to be shared. This will be useful for professionals to have a full picture view of the patient record or care plan.

Single System across all GPs the LLR health community will work strategically to ensure clinical systems can provide appropriate sharing of information and management of federations. Having single systems across a number of GPs has proved to have significant benefits such as sharing the patient record, having the ability to send tasks and book appointments across GP practices. In future, true interoperability between software suppliers may negate the need to move to a single system strategy.

Single EPR across Primary and Community Care this is an ambition for the health community to be achieved within 3 years. This will allow for greater collaboration and ease of access to data. This strategy may be surpassed once clinical system providers become fully interoperable and have a seamless data interchange as if operating from one system.

Acute Hospital Electronic Patient Record a great deal of investment has been committed to move a majority of UHL systems to one EPR. This will increase the level of data sharing within the hospital across three principle sites and across other health and social care organisations.





Secondary Care Organisation Sharing there needs to be greater sharing between secondary care provider organisations for patients that move from provider to provider. A consolidation of systems within secondary care organisations will help with better links to be made between organisations as the number of connection points will reduce.

Sharing Health and Social Care Records there has been high emphasis in sharing data between healthcare organisations and this needs to increase to include collaboration with Social Care. There are some patients that interact with both services and the idea is for these patients to have a seamless services in terms of accessing data and services available to them. To make this happen there is a requirement to move to real time use of the NHS number at point of care.

NHS Number used in Real Time to allow for data exchange to happen the NHS number needs to be a true unique identifier and used in all aspects of patient recording. There has been a huge effort through the Better Care Fund in recent years to ensure that Social Care use the NHS number. This has been achieved in a majority of cases but is currently not used on a real time basis at point of care. The move to real time will support initiatives such as the Child Protection Information System.

Patients to Contribute to their Own Records with the ability to make notes on an upcoming visit, listing topics and questions they want to cover. In turn, this allows the healthcare professional the opportunity to prepare for questions before meeting their patient. This will also be extended to allow the patient to updated medical statistics that they've captured themselves to the record.

Flagging of information making record sharing seamless and simple for the healthcare provider is key to improve utilisation of shared data. Intuitive flagging systems have been used within systems to ensure that important information is flagged up to the health care professional such as whether the patient has diabetes. Improvements in the flagging systems would also alert the healthcare professional that the patient has a Care Plan, disabilities and other important information.

Privacy settings controlled by the patient improvements in digital technology should allow for patients to control which healthcare professional has access to their records. The patients are currently asked by a healthcare professional for consent to view their information but by allow the patient to have more control, such as via an app or patient portal, it would make data protection better.

5.1.2 Transfers of care

Vanguard / Urgent and Emergency Care supporting the Urgent and Emergency Care Workstream and the LLR Vanguard to make improvements in digital technology. This includes providing patients with real time feeds of the live waiting times of the urgent and emergency care departments. Providing patients with improved information for access to these services. Providing health care organisations with heat maps of service demand so that patients can be transferred to the most effective care setting with the least waiting time. Providing support for a GP led hub to further triage patients in need of urgent care, ensuring that information flows are provided to and from this service.

Pathways ensuring that our care professionals have accesses to the latest pathways and referral documents LLR will continue to build and further enhance the locally designed PRISM (Pathway and Referral Implementation System) that is accessible to all GPs. The number of pathways on PRISM will be increased with the aim for all pathways to be on the system. Additionally, there will be the creation of mobile optimised version of PRISM being available by a peripatetic healthcare worker. It is envisaged that social care and voluntary organisation will also have pathways uploaded to PRISM. Further development will be done to look at PRISM being integrated with the national E-Referrals system. There could also be improved integration with EMIS Web.

Directory of Services (DOS) to ensure that are existing DOS's are up to date with commissioned services. LLR will look to implement the Mobile DOS to services that require it once it is available.



Cross Border our patients and the public can be seen by health communities outside of the Leicestershire and Rutland borders, to ensure that they receive high quality care we need to ensure that information is available to areas outside of LLR. The health community committed to data being uploaded to national assets such as the Patient Demographics Service (PDS) and the Summary Care Record (SCR).

LLR will also work towards ensuring our systems meet nationally set interoperability standards. The LLR health community will engage with bordering footprints in Nottinghamshire, Derbyshire, Northamptonshire, Lincolnshire, Warwickshire, and Peterborough to address issues of patients moving between our borders. The LLR health community will work with regional groups to develop a solution for sharing information such as patient letters; this would include collective agreements such as the Midlands Accord.

E-Consultation there will be a drive to look at existing and new technology to enable consultations that can take place between clinicians/social care professionals and the patient without taking place face-to-face. This could be through methods such as SMS, e-mail, instant messaging, smartphone apps and telehealth. This will not replace the need to have face-to-face consultations but will provide options or other methods of interaction that can be more convenient for the patient. The population are increasing becoming adept to interacting with services such as banking or booking a taxi online, offering these methods of engagement for health and care will bring health and social care in LLR in line with other industries. The design and rollout of these services will take into account the extent to which different segments of the population are likely to be online and to embrace different styles of interaction.

Maternity Access App LLR will look to digitalise maternity records. Currently these are folders of papers that the patients hold and bring with them with every interaction with the health service. Changing this to a digital service would mean that midwife has access to electronic records and patients can access the records via an internet web browser or smartphone application. This could also be extended for babies who are currently issued with red books that are populated by the health care professional.

Online Booking App to maximise use of the GP online booking app by increasing communication to the public about the service and allowing further appointments to be bookable online. Further exploration will be given for booking other services electronically.

Removing faxes as an inter-organisational initiative and transfer the process to secure electronic methods. It is a core commitment for LLR to work towards eliminating faxing of information, as it is less secure than other digital methods of communication. Supporting this would be the move to NHS mail2 and securely connecting it with corporate e-mail networks. This is of particular importance to the LPT Single Point of Access, that continue to receive certain referrals via fax rather than other secure methods of communication. The health community will work towards removing the use of fax as a communication method.

Wider health partners IT links greater links with health partners that delivery care in the community such as Dental, Optometry, Audiology, Pharmacy, Any Qualified Provider (AQP) providers should all have better links with major healthcare providers. This will help to move service demand into the community that could make for a better experience for the patient. This would mean that data sharing of patient information will need to be extended to these services. Additionally, referrals to and from these services should be electronic and integrated within the healthcare professionals native system.

Task and standards based letters moving to structured letters that are task based for GP's to respond to from Secondary Care. These letters will be sent electronically and moving to an ITK2 and CDA standard. These nationally set standards will help alleviate the issue of patients moving cross border. This will also be supported by the move to start to remove paper letters being sent to GP practices where they are currently being sent electronically and by paper. Increasingly GP practices are seeing less value in receiving a paper copy of the letter. This will also help to improve workflow between health and social care.

Secondary Care to Social Care communication will become more electronic with timely electronic admission, discharge and withdrawal notices from Secondary Care.





Social Care Referrals moving local authority requirements to an electronic form that can be completed and sent rather than printing and faxing. Council electronic referrals being streamlined. An example of this is First Contact Plus moving from a paper based referral to an electronic referral. Expansion of the E-Referrals service will provide an opportunity for Social Care services to be bookable by that system in a similar way to other healthcare services.

Discharge Admission and Referral we aim to use national solutions (available through NHS England and NHS Digital) to integrate systems to transfer patient information between health and social care teams to effectively deliver required services for the patient / service user.

Cognitive Computing involves self-learning systems that use data mining, pattern recognition and natural language processing to mimic the way the human brain works. Access to health records and implementation of a cognitive computing system will be implemented in LLR within 5 years. It will start to dramatically change the way we deliver healthcare.

Child Protection Information System (CPIS) staff in unscheduled care settings can see if a child has a child protection plan (CPP) (including children not yet born) or is a looked after child. They can also see when and how often the child has attended for emergency treatment. Using CP-IS ensures local authorities are alerted when a child in their care presents for unscheduled treatment anywhere in England; providing a clear picture of the number and frequency of NHS attendances made by the child.

Heat maps for Urgent and Emergency Care Services will allow for emergency services such as ambulance crews to see where the greatest pressures are within urgent and emergency care centres and navigate the patient to the most appropriate care setting. This will reduce waits for patients and improve ambulance crew turnaround times.

5.1.3 Orders and results management

Patient's Access to Results patients will have an easy way to access results and letters that are sent to them currently in paper format. Other options such as SMS, e-mail, smartphone alerts, electronic messaging and patient portals that will give alternative electronic

methods of patients to view information about them. Along with results should be appropriate information for 'what to do next' with the information that is presented to the patient.

Patient's Access to Results patients will have an easy way to access results and letters that are sent to them currently in paper format. Other options such as SMS, e-mail, smartphone alerts, electronic messaging and patient portals that will give alternative electronic methods of patients to view information about them. Along with results should be appropriate information for 'what to do next' with the information that is presented to the patient.

5.1.4 Medicines Management and Optimisation

Electronic Prescription Service (EPS) implementation of future phases of EPS such as phase 4 that would make it possible for all primary care prescriptions to be processed electronically and not just those where a patient has nominated a specific dispenser to receive the electronic prescription. In the future, if a patient hasn't chosen to nominate, then they will be able to collect their electronic prescription from any dispenser. Patients will still be able to nominate a dispenser of their choice if they decide that is the most convenient option for them.

Pharmacy Access to Data to allow greater access to care records by the implementation of SCR viewing in community pharmacy and hospital pharmacy. Advanced SCR read and write functionality will allow for pharmacists to update the patient record for procedures and examinations done in pharmacy such as vaccinations. The national rollout of SCR access for community pharmacy provides an opportunity to support enhance patient care from the pharmacy and to update the GP with services provided to the patient at the pharmacy.

First Data Bank (FDB) OptimiseRx is a point of prescribing information tool fully integrated with the GP clinical systems and once populated with information by the Medicines Optimisation teams provides advice on national and local formulary and best practice including patient safety notices. Recommendations made are patient specific and take into account the full patient history by interrogating read codes. This product has been installed in all of the GP practices across LLR and will continue to be developed.





Real Time Analytics Tool Available tools will be evaluated through 2016-2017 to assess the benefit of real time prescribed data as opposed to dispensed data from e PACT in shaping Medicines Optimisation actions.

Tool Expansion PINCER is a proven pharmacist-led information technology intervention for reducing clinically important errors in medication management in general practices. The LLR CCGs participated in the scale up of PINCER tool and it is proposed that this tool be continued to be used to reduce the incidence of medicines related harm and admissions. The PINCER tool extracts data using MIQUEST and Chart to identify patients at risk of harm for a number of indicators to allow pharmacists to then influence the prescribing practice in GP practices.

Disease and medication management clinical software into general practice. This type of software (such as DAWN) can support healthcare professionals with disease management or medication management to monitor long-term patients who take potentially harmful drugs eg Anticoagulation and rheumatology medication. This type of software can improve routine clinical decisions, with more efficient care coordination and case management.

PharmOutcomes is a web-based system for commissioners to provide a platform for delivery of

community pharmacy services. The system also allows commissioners to audit and manage services provided by community pharmacists. The information on the services delivered is collated allowing for analysis on a local and national level to allow for reporting on the effectiveness of the commissioned service.

New Medicines Service (NMS) provides support by community pharmacists for people who have been newly prescribed a medicine, prescribers are able to refer patients to help improve medicines concordance. An electronic solution to support this process will be implemented.

Medicines Use Review (MUR) The MUR and Prescription Intervention Service is a service that is delivered by accredited pharmacists and involves them undertaking structured adherence-centred reviews with patients on multiple medicines, especially targeting those with long term conditions. Prescribers are able to refer patients into this service. An electronic solution to support this process will be implemented.

Management of Shared Care Agreements Agreements and interface prescribing issues. The process of transferring shared care is paper based and slow. There are digital platforms available that would permit this to be completed securely and digitally across care settings.





5.1.5 Decision support

Flagging System clinicians should have systems that pull rather than push information to them (i.e. made visible to the user automatically, rather than the user proactively having to query whether there are relevant flags). It is critical that they receive the most relevant information first when treating patients. A flagging system can help to provide this to indicate certain aspects of the clinical record so that high quality of care is provided to the patient. This should be done electronically, be paperless and easy to access for the clinician. Clinical systems will be configured to provide a flagging functionality to alert key information when a patient record is accessed. Additionally, the care professional should have the ability to add a flag to the patient's record.

Pre-Referral Diagnosis professionals should have the relevant tools to do diagnostics before referrals are made into secondary care. Technology will be reviewed to ensure that it is easy for people to use, provides a high quality analysis, can be done in a timely and cost effective way. In the future, self-care diagnostics alongside primary care diagnostics can provide greater quality of service for the patient.

Population Health Management tools offer enormous potential to make pathways and services more effective. They can help plan new services and in case finding patients for appropriate interventions. The potential to combine medical and social care data is important and offers potential advantages as we move more towards more integrated working. The health community will maximise the tools that are currently available (GEMIMA, Health and Caretrak PI, Provider internal information systems) and also look further at commercial offerings for population health management.

Professional to Professional Communication - GPs and secondary care clinicians need to be able to contact each other seamlessly. Instant messaging tools within SystemOne and EMIS for corporate use would help aid communication. This should be recorded within the

patient's record seamlessly. Collaborative working solutions such as Microsoft Lync. Such technology enables remotely based teams within organisations, as well as across organisations to work together in real-time. For example participants from different professions could review and update information on shared care plans or work together to review diagnosis or actions.

Self-Service and giving customers self-management and how we transact and engage with community. Touch screen monitors and voice recognition for use by patients in their homes to use on-line services and booking services. Patient customer Portal for them (or their families) to record their story to share with professionals they invite (give access to). This will help to facilitate care as they would prefer and require, as well as and reduce the demand on professionals for facilitating consent on behalf of the patient.

Patient Directory of Service On-line directories of suppliers and providers for the LLR population to directly contact them for any services and thus reduce the demand on Health and social care teams. Progress towards one directory for Health (NHS UK) and another for preventative services for the region. Self-help customer portals that enable members of the population to purchase products and services directly from suppliers and providers which reduces the demand on health and social care services. Regional directory and direct purchases will be developed in stages, e.g. initially only listings of providers, then include products and prices, followed by functionality for direct purchases for recording against direct payments or personal budgets. Local directory will fully utilise nationally funded resources and directories such as AskSara.

Electronic Patient Triage using technology to look at new models to allow patients to be triaged using non-human interaction. An example of this is to move 111 non-clinical advisor assessment stage to an online/mobile clinical triage platform using an accredited Clinical Decision Support System (CDSS).



5.1.6 Remote care

Methods of Communication to patients, public and staff need to evolve to embrace new technology. Following examples from industry there are environmental and cost saving benefits from moving from a paper based communication to an electronic based communication. Patients should have the opportunity to set their own preference in relation to the methods of communication and information governance consent settings. Wider electronic communication can digitally transform how the NHS engages with the public, patients and staff.

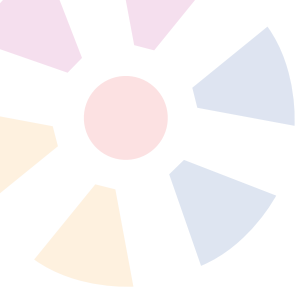
The increase use of social media, online forums and smartphone/tablet Apps will increase awareness of digital technology. Health awareness messages can be socialised using community networks social media platforms to relay messages. The use of patient portals will also allow health awareness messages to be targeted to patients as well as provide a personalised service for the patient. This is striving to move a significant amount of the interactions between service users and the health services from traditional face to face, letter or telephone contact into online interaction. By using citizen identity patients will be able to have one log in for a plethora of Apps that are suitable to support their care. There will be a variety of applications and websites that individuals will be able download on their devices or access through a dedicated portal. These will include applications to receive correspondence securely, to administrate their contact with services, to access their wider health information, to receive and share health information and to support individuals with achieving their health goals. **#Digitalfirst #FutureNHS**

Unified Communication for staff and across organisational boundaries moving from paper and emails to more dynamic means of communication. The health community within LLR are building a wide reaching digital offer to improve unified communication. This can include clinician to clinician instant messaging for advice and guidance and virtual MDT meetings.

Telehealth/Telecare can be used as an alternative method of service delivery. This initiative supports looking after people in their homes. Additionally it facilitates improved professional to professional communication. Virtual clinics and consultations through smarter working (e.g. via secure video calling) can help improve efficiencies in the service. The health community will draw upon previous experiences with telehealth and look at national learning to implement this in effective ways. Just by giving professions the technology to do telehealth may not deliver the change that is required. This initiative requires extensive business change analysis that will focus on areas where this technology is best used. Specific clinical services will be targeted to do telehealth such as tele-dermatology.

Self-Care by giving patients access to the right information self-care can drastically change the way patients interact with the health service. Greater self-care will empower the patient to look after themselves, monitor their own vital statistics and help them to live a healthy lifestyle. The LLR health community will look at self-care technology that will support patient care. To be effective, this needs to be implemented in ways that are responsive to the attitudes and priorities of patients/service users, their carers and families.






Mobile patient monitoring allowing mobile monitoring and support for certain patient types. This includes expanded the use of systems already in use in LLR like infoflex. In Social Care, online group services (e.g. Whatsapp style with option for video link too) will be used to engage clients for activities and rehabilitation (screen mirroring). Using new technology to monitor patients such as mobile ECG machines like ePatch that upload data directly to the clinical system. Technology now allows for diagnostics or the need for further diagnostics to be addressed in a primary care setting without the need of initial referral.

Using personal wearable technology to provide information to health eg. Apple Watch, blood pressure monitoring, blood sugar levels. We aspiration is to enable patients to use technology to manage multiple conditions e.g. Hypertension and various Heart Conditions during diagnosis and/or monitoring / medication compliance stages in their primary care journey through GP led, patient interactive, technology enabled self-management SMART tools.

Assistive technology use of technology for use by service users to monitor their vital signs at home and issue alerts for any assistance required. Improve take-up of assistive technology such as medication alerts, fall detection, memory aids etc. by patients and the public.





Case Study

Assitive Technology - Improvements in diagnostics

The Hinckley and Bosworth federation are currently piloting the following technologies.

Screens patients at risk of Atrial Fibrillation (AF) in just 30 seconds, state of the art, event recorder, monitor and manages existing condition.

It allows you to check your health anywhere anytime on a mobile device. It can fit Iphone 5/5s or Iphone 6. A universal device is also available to fit other devices.



The ePatch® is a small, discreet body-worn patch sensor that adheres to the skin.

The ePatch® continuously records and stores 1-3 channels ECG for up to 72 hours. After recording, the data is read out via USB interface. In the next generations of ePatch® the data are transmitted wirelessly and signals of activity and motion are recorded as well.

Patient compliance with continuous cardiac monitoring is crucial to collect all the information you need to make quick decisions for adjustment of the treatment plan.

And the key to patient compliance is their satisfaction with a normal, fulfilled life during monitoring so that they can forget about the device they wear and still do the things they love to do.



5.1.7 Asset and resource optimisation

Free access to Wi-Fi for patients there will be a drive to enable free access to Wi-Fi for patients within all care settings that have Wi-Fi. There will be an opportunity for organisations to design a front page to push out health messages or support for charities.


This should not impact or interfere with clinical software requirements for professionals nor should it have an impact upon network security. It is acknowledged that this will come at an additional cost for healthcare organisations. It will help individuals in hospital who are used to interacting online to sustain their day to day connection with friends and family, which is positive for mental wellbeing and encourages a seamless return home.

Maximising national assets ensuring full use of national assets is important because they are national applications that are used across the country. They are also funded centrally and therefore available to local organisations at little or no cost. This includes utilisation of the national spine, implementation of SCR, Patient Online, EPS, N3, and CPIS.

Federated Wi-Fi there has already been a large amount of work to join up Wi-Fi corporate connections so that staff can access their own systems from different health and social care buildings. Investments will continue to be made in further federate the Wi-Fi. A programme of work for 'touch-down' bases will be established that will allow staff to know where they can access the federated Wi-Fi hotspots. Work anywhere at any time – health and Social Care. Link with further organisation such as Leicestershire Fire and Rescue and investigate partnering up with commercial suppliers like BT Openzone to increase the reach of organisational Wi-Fi across LLR. This would support an agile workforce and bring efficiencies in how services at home are delivered.

Agile and mobile working for staff giving staff the ability to work from any location using the latest technology. This will not only improve flexibility but also improve efficiency. Federated Wi-Fi will help to enable this along with looking at other online/offline technology. By improving agile working across organisations in LLR it can help support cross sector working e.g. Council worker working from an NHS organisation building.





Case Study

LPT Agile Working

The strategic vision is to move LPT from an estate heavy organisation, where the workforce works on the basis of time served from fixed bases at fixed times. Moving to a more flexible arrangement whereby the estate requirements are reduced, what estate remains is more flexible, shared usage, with the workforce becoming more home based. The challenges of this are enormous and it is very difficult to achieve without the workforce being fully engaged and actively supporting to change. Agile does not suit all roles.

What is Agile Working?

The Executive Team in LPT have fully committed to a programme of implementing Agile Working where it makes sense to do so and as a supported choice for employees.

Agile working is not just about having a laptop but is a much broader concept whereby a function or a team are supported to move to Agile. The following are all likely to feature in a move to Agile, but there is not a prescriptive solution, teams will have to work out what is best for them.

1. Ensuring staff are equipped so they can work anytime, anyplace, anywhere to access the information they need to do their job effectively.
2. Removing barriers and resolving issues so that the workforce is empowered to change the way they operate.
3. Continuing to deliver as a minimum the expected outcomes of their role, with no reduction in performance, access or availability.
4. To generate ideas and introduce new and innovative digital technologies to create an improved Service User experience in receiving a service and an improved Employee experience in delivering that service and just being a member of the LPT workforce.
5. To improve the working lives of LPT staff so that they are more able to blend their work and personal life priorities making LPT an employer of choice that people value working for.
6. To create opportunities for LPT to capitalise on these changes in working practices to be more efficient, improve quality and generally be a more responsive employer and provider of healthcare.

Agile cannot be imposed to be successful; it has to be a bottom up approach where the staff own the change aiming for the triple Win scenario. To do this, facilitation will be required to convert the barriers and issues into being resolved and to also supply the enabling, supportive technologies that will enable the changes to take place. In order that the path is cleared the Trust needs to commit as a corporate entity to back Agile working as a major Transformational Project reporting to STG.

Expected Outcomes

It is expected that the following outcomes will be observed where Agile working has been successfully implemented:-

1. You will have more time to undertake your work, it is likely you will be more productive as a result, with more timely and higher quality work undertaken.
2. Your personal wellbeing will improve, you will feel more motivated, less stressed and feel more committed to LPT as an employer of choice.
3. You will more in touch with Service Users and each other, this will be digitally to a greater extent so it is important to encourage face to face time too, to balance this.
4. The working day and personal time may start to blend, stretching the working day into personal time and having some personal time in the working day, what you do will become outcome based rather than on time served based.
5. Technology will divert administrative duties to admin support or computer systems freeing up frontline services for maximum clinical contact.
6. With all of these changes in how you work it will create opportunities to relook at the pathway for Service users accessing services.
7. Significantly reduced pressure on estate that you use and estate being rationalised and transformed to support Agile working as an encouraged choice.

Service Users feeling they have a more personal service where they have a more responsive "personalised" service, more flexible to their needs.



Working with wider public sector to support greater integration and new models of care. This would require greater data links with health care providers in the community such as Pharmacist, Optometrists, Dentists, Audiologists, AQP providers and private health providers that see NHS patients. This will allow for patients to get the best quality of care in a community setting and remove the need for further referral to health services if errors occur. It could also allow for a holistic health record to be created for the patient. Sharing of data will vary depending on the information governance constraints and within legal requirements. Extending engagement with non NHS or social care organisations such as Universities, Police and Fire & Rescue can also help to rationalise technical infrastructure and share data for research or business planning purposes.

Improving Cyber Security is important as the threat level from cyber security increases. As part of digital maturity all organisations would need to ensure that IT systems are appropriately supported and resilient to cyber-attacks. And ensuring positive patient identification, including compliance with GS1 standards

Single Infrastructure Platform the LLR health community will work towards a common Single Infrastructure Platform covering health and social care within 5 years. This would unify structures across health and social care and reduce duplicate investment. This would reduce costs for organisations and also allow for a more robust infrastructure to be set up.





Common Minimum infrastructure and standard specification for procurement where possible all future procurements will include a requirement to meet the national standards. Long standing items such as HL7 and ITK are currently part of our mandatory requirements. Over time, as they system suppliers start to include the correct functionality, we will move toward SNOMED as our preferred coding and notation approach. As part of LLR we will work towards a standard approach to identifying and authenticating patients, careers and public to their Healthcare applications.

Suitable Infrastructure to support clinical systems this includes smartcard readers for all staff that require access to systems via smartcard in LPT and Social Care.

NerveCentre / eObs UHL is deploying the Nervecentre electronic observations solution to all inpatient areas in 16/17. This will allow nurses to record observations and allow the use of automated EWS monitoring and new functions such as SEPSI/AKI tools. As we move towards the EPR solution we will be moving to a fully automated observation tools with the information from the Welch Allen devices going directly on to the patient records.

Consolidating Websites across LLR would make it easier for patients, the public and staff to navigate. Additionally making websites that are easy to access on multiple devices. This work will be done in conjunction with the Communications and Engagement Workstream of the BCT programme.

Electronic Prescription Services (EPS) and Patient Online there will be support to increase the use of these systems and support for implementation of new versions. To promote the functionality that is available for patients will be supported by the Communications and Engagement Workstream of the BCT programme.

Hub and Spoke systems will be set up to support GP practice hubs and federations. Clinical systems will be joined up to ensure that patients receive the right care in the right care setting. The joining of the systems will allow for greater flexibility in the way that care is delivered. IT support for new models of care would also be reviewed such as the requirement of for OOH 7 Day Care. This community based provision will be in place from 2016/17.

Re-Use and Share working as a collective of organisations has great influence in buying at scale and leveraging economies of scale. This will include purchasing from an IT perspective and buying equipment. This includes working together to commission system integrations where this is appropriate.

Voice Recognition tools for staff to do dictation and instruct systems to action commands. This would be quicker than typing information, but needs suitable safeguards for accuracy.

Federated Active Directory across LLR would allow for people to communicate better by locating the right people but also make ease of access to systems for staff better.

Innovation hub supporting new developments such as applications created by third party organisations. This could require initial seed funding to support their developments and support to link them to the N3 network and pilot applications within care settings. All too often entrance to the market is hindered by procurement requirements for suppliers to already have a tried and tested system within the NHS.

Although this approach reduces risk for health and social care providers it hinders innovation. Therefore the LLR health community will do its utmost to support greater innovation from public and private organisations. Standardised specifications and increase use of interoperability will support this process.

Interoperability allows systems to talk to one another and share information in a common language. LLR health and social care community will aim to have all around open API's. Linking in with NHS or commercially created Apps. How patients communicate using apps moving away from traditional methods of care and advice.



Contracts the LLR IM&T group will create a collective standard requirements set for new IT systems. It is envisaged that all future contracts should include contractual clauses for suppliers to develop and deliver APIs for system integrations, e.g. any request must be developed in no more than 9 months from date of request. Note that supplier responses are uncommitted when such matters are included in procurement requirements and thus you can't hold them accountable for delivery. However, inclusion in contracts holds them responsible for delivery.

Joint (Health and social care) commissioning to provide patients / service users with consistent services. Domiciliary care contracted organisations to include technology to provide quantitative statistics and report exceptions, e.g. time arrived and left, number of calls / percentage where not arrived as contracted / agreed. Domiciliary care contracted organisations to include technology to provide qualitative statistics and outcomes

Opportunities from the third sector Leicestershire County Council (LCC) local area co-ordinators who are working to identify a vast wealth of local resource in Hastings Ward and Thorpe Acre Loughborough. This is being seen by local professionals as a unique and valuable source of information. DOS does not cover this so it means creating local granular directories. If DOS could facilitate local community group information, it would enhance it greatly – but this would require strong governance and automation so it does not dilute the currency and accuracy of local information that harms the reputation of the DoS as a trusted and valued source for (health) professionals. Engagement will also take place with community groups to understand how they can support better delivery of services and how they can interact with the LLR health and social care community from a technology angle. In designing communication approaches, it will be important to establish how service users want to access information that supports their wellbeing.

Improving access to systems greater integration of system and ease of access is important to ensure digital uptake by staff. This includes existing systems as well as new systems. The reduction in time taken to either receive information and being able to input information from a good user interface will make the user experience better.

Opportunities from the commercial sector wider reviews will take place to understand how innovation in the commercial sector can be applied within LLR. LLR will work towards making it easy for commercial partners to engage within health and social care.

Patient administration of personal budgets patients will have the ability to manage their own budgets electronically. This would give greater ownership to the patient regarding the services they receive.

Patient focused websites more use of national and centrally commissioned resources such as NHS Choices website, AskSara website, as well as emerging health and well-being (diagnosis) websites and apps.

Monitoring tools use of devices to monitor timely services delivered by contracted domestic help service. Use of devices to monitor food stocks, monitor meal consumption, medicines administered/taken and even transmit repeat order requests to pharmacies and supermarkets for patients and service users. As a future state there could be the use of robotics for home services such as vacuuming, provision of meals, dispensation of medicines etc.

Population health management work to improve on the health outcomes of a group by monitoring and identifying individual patients within that group. Innovative tools can be used to aggregate data and provide a comprehensive clinical picture of each patient and support the planning and delivery of healthcare. This would allow for a more intelligent health community to provide care designed around the health needs of the population and to be more proactive to avoid unscheduled admissions. Proactive support will also help improve the support for vulnerable people.

Correspondence to patients sent electronically where possible giving patients the option to receive information that traditionally would be sent by paper through other means such as SMS, instant messaging, e-mail or links to a patient portal.

Patient Feedback using tools like the Friends and Family Test to make changes to how services are designed and delivered. Using patient feedback to shape digital technology to support patient care and communicate with the patient or public.





5.2 16/17-17/18 Universal capabilities

The Universal Capabilities and plans have been completed in Appendix 2. Here is a summary of the current position of Universal Capabilities in LLR:

Universal Capability	Completed	Partially Completed	Not Started
Professionals across care settings can access GP-held information on GP-prescribed medications, patient allergies and adverse reactions		✓	
Clinicians in urgent and emergency care settings can access key GP-held information for those patients previously identified by GPs as most likely to present (in U&EC)	✓		
Patients can access their GP record	✓		
GPs can refer electronically to secondary care		✓	
GPs receive timely electronic discharge summaries from secondary care		✓	
Social care receive timely electronic Assessment, Discharge and Withdrawal Notices from acute care			✓
Clinicians in unscheduled care settings can access child protection information with social care professionals notified accordingly		✓	
Professionals across care settings made aware of end-of-life preference information		✓	
GPs and community pharmacists can utilise electronic prescriptions	✓		
Patients can book appointments and order repeat prescriptions from their GP practice	✓		

The universal capabilities that have not started will have plans in place to support its delivery. An example of this is to support the delivery of End of Life care is currently being processed through a bid for funding initiate a local plan for care planning. Therefore, although the project is yet to start there has been much work locally to work with clinical leads to define solutions and explore technical options.

The partially completed capabilities have been listed as partially because the process has been fully completed by some organisations but not all. There will be plans in place to implement these capabilities within the organisations that have not enabled the capability.

The completed capabilities show where the universal capability has been delivered. The LLR health community will work to maintain and improve on these universal capabilities. An example of this would be to put in plans to upgrade to the latest electronic prescription service. The activities for 16/17 delivery of the each universal capability is represented in the capabilities plan (See Appendix 3). The delivery of these covers all key providers within LLR.



5.3 Capabilities Delivery Plan

All capabilities will be defined as initiatives and delivered through current governance arrangements. Section 9, shows initiatives against timeline for delivery. Some of these initiatives will be delivered within existing resources and financial commitments however others will require additional funding. To support the additional funding requirements bids will be written internally and externally as identified in Section 4.3.

Successful implementation of technology projects will be measured through benefits realisation and uptake from a user perspective. To assure delivery, this STP and BCT Workstream leads will be engaged with to fully deploy the changes that arise to help deliver the capability.

An overarching capabilities plan (Appendix 3) will be owned by the BCT IM&T Enablement Group that will show areas for further research and investigation, areas for business case development and areas for project delivery.

Each area will have a lead, financial requirement and resource requirement. This process will help to keep track of actions that are required to deliver our plans. Further research and investigation areas will be to look at from a capability perspective and linked with innovators to see how the solution can be delivered. Once an options appraisal has been done of the marketplace the initiative will become a project and move on to business case development. The business case will put forward the requirement for the technology function, identify the resource requirements, benefits and identify where the funding will come from. Some initiatives will require bids to support them and this will be taken as part of the process of business case development.

Initiatives will be prioritised in favour of the biggest impact from a change perspective. The initiatives have to be affordable and funding commitments have to be sourced. They also have to support the Five Year Forward View and STP delivery. The BCT IM&T Enablement Group will prioritise capabilities and initiatives to ensure that the top priorities are identified and delivered. This includes looking at quick and early wins that make big impacts to the

service such as support for End of Life Care services. Moreover, workforce inclusion, communication and engagement, financing and cross border collaboration are areas of rate limiting factors that the BCT IM&T Enablement Group will seek to improve to help delivery the capabilities outlined within the LDR. Once successful in securing the resources or funding, the initiative will move to project phase. A project manager will be assigned to the project and then will deliver the project using a project management methodology such as PRINCE2 (Projects In Controlled Environments). The project manager will report to a dedicated project board that will govern the project until delivery.

During project delivery phase all relevant stakeholders will be involved in scoping from delivery to benefits realisation. Once the project is delivered from a technical delivery point of view it will be passed onto the business areas that will embed the change using change management, training and communication. Key success factors will be linked to the technological change making a difference in working practice to support staff and patients.

The element of business change and service redesign is essential to ensuring that technology is embedded within the health and care service. This may require a culture change within service delivery. It is envisaged that the BCT and STP clinical workstreams will support the service change to embrace new and existing technology. In the last five years there has been increasing investments in technology and we need to ensure that the use of implemented technology is maximised. This will include reviewing the technology that we have and understanding the level at which is it used with a view to improving the usage levels and assessing the service impact.





6. Information Sharing

6.1 Information Sharing Strategy

The care and quality gap will be improved by increased data sharing. LLR will use principles set out in Section 1.4 that will be used for all data sharing initiatives. Over the last few years there have been many initiatives to support primary care record sharing into secondary care and urgent and emergency care settings. This has been well embedded technically however there is still much work to do to align the business change element to the technology to ensure that IT is used in favour of asking the patient or relying on paper.

Further work will be done to look at information sharing gaps and see how they can be filled. This included UHL having an EPR that is readable by primary care and vice versa would seem to help many current issues. This includes sharing of information between our secondary care providers. To ensure this happens, our secondary care providers are working to consolidate the number of systems that they have to reduce the number of systems that need to be linked. Modern EPR systems having been implemented or are in the process of being implemented. These systems allow for greater interoperability to take place with other systems.

6.2 Information Governance

The LLR Information Governance (IG) Strategic Group (IGSG) has oversight of Information Governance across Leicester City, West Leicestershire and East Leicestershire & Rutland CCG's and will play a key role in the approval and sign off of new approaches to information sharing. The Information Governance Strategic Group (IGSG) is made up of representatives from CCGs including Senior Information risk Owner (SIRO's), Caldicott Guardians and CCG IG Leads, Arden & GEM CSU IG Specialists and the Leicester Health Informatics Service with a remit to promote a holistic approach to information governance and security across the LLR CCGs and to work together to influence the integration and inclusion of information governance standards with other governance strategies, work programmes and projects. The IGSG is supported by the IG Operational Group responsible for sharing skills, knowledge and expertise across the LLR CCGs to promote excellent ways of working,

consistency of IG delivery and integrated ways of working to support the IG agenda.

The IGSG has direct links with key groups such as the LLR Care Record and Data Sharing Project Board, the Better Care Together Programme and e-Communications Project Board (covering clinical data sharing, electronic discharges NHS and Private Providers) and other key strategic streams of work.

As such, the IGSG links with the Leicestershire Strategic Information Management Board (SIMG) through the Arden & GEM IG Consultant who will provide a liaison between the two groups to ensure a synchronicity of approach and to identify better ways of working cohesively to prevent duplications and promote integration. The SIMG consists of representatives from the City, County and District Councils, Leicestershire Police, Leicestershire Fire & Rescue and health organisations across the county. The IG work stream here is led by the local authority colleagues and is supported by information governance specialists across the county; it is responsible for developing guidance, communication materials and frameworks to support information sharing across organisational boundaries in Leicestershire.

Key work streams include the Better Care Together (BCT) work stream which developed a high level Information Sharing Protocol (ISP) for a broader partnership across the district and a related template for the quick and efficient development of underpinning Information Sharing Agreements (ISAs).

IG Reps from the BCT partner organisations meet to discuss and agree the approach to IG and Security issues. Also agreed is an Overarching Information Sharing Agreement for Direct Care to:

- To improve the care of individuals by ensuring health and social care professionals are provided with the information they need to do their job safely and effectively;
- To ensure the partnership achieves the correct balance between the duty to care and the duty to share.





As part of the Medical Interoperability Gateway (MIG) deployment a full Privacy Impact Assessment has been completed in order to identify any risks in relation to the deployment of the MIG and to enable interoperable sharing across the health and care community. A full programme of Information Governance work is currently underway to support the deployment of the MIG and as such an Information Sharing Agreement (ISA) has been developed and approved. The MIG ISA now covers NHS Organisation providing Secondary and Urgent Care, LLR Adult Social Care Services and the first Hospice. As more partner organisations are included the ISA is updated to cover all organisations.

Further integrated data sharing is evidenced through the development of Data Processing Agreements between Health and Social Care for the use of pseudonymised data from both sectors to produce integrated care dashboards provided by a 3rd party supplier.

Going forward the vision is to develop this approach to information sharing to support new technologies such as portal to enable one health and care record across Leicestershire, also to examine data flows and see how these can be exploited to support risk stratification and clinical audit. In the future there will be a whole systems consent model to allow patients to consent for data sharing to a number of services that support the patients care rather than being asked at every juncture.

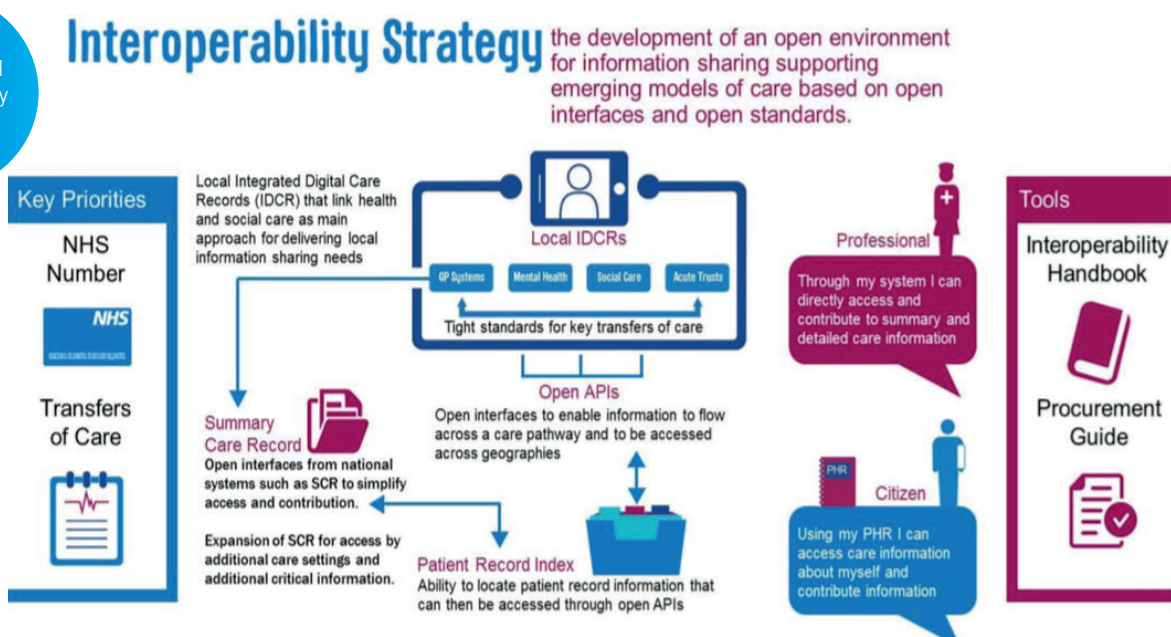
6.3 Interoperability Strategy

Interoperability allows two different systems communicate with one another regardless of the programme language that was used to construct them. Interoperability can bring a number of benefits such as increased sharing of secondary care back to primary care and other providers and information sharing requirements of federations and GP hubs.

The LLR organisations will work to create a common framework for interoperability to take place across LLR organisations. The national interoperability handbook will be utilised to create the interoperability technical requirements for LLR. This includes an output a set of standards based specifications based on FHIR, SNOMED CT, dm+d and NHS data dictionary to provide a consistent format and content to the shared information. All new systems should have API definitions linked to them to allow for interactions to happen with other systems. Code 4 Health will also be used for interoperability standards to support such initiatives as hospital discharge integration with Social Care systems. LLR will build an association with programmes such as the GP Connect and NHS England Interoperability team to ensure LLR organisations are at the forefront of interoperability changes.

The LLR Interoperability common framework will be built into procurement processes to ensure the commercial marketplace offer this as part of their applications. This will also encourage suppliers to have interoperability capabilities.

Fig.4 National Interoperability Strategy





7. Infrastructure

The LLR IM&T enablement group is committed to partnership working to deliver to its remit in providing overarching strategic leadership and local direction in making economy wide technological developments across the health and social care system to supported integrated ways of working and reducing the use paper at the point of care.

A key part of enabling this is to support the shaping of the local IT infrastructure through senior level dialogue and ensuring that plans are shared between organisations to provide on-going alignment with each other’s plans and the general strategic direction of travel. The group is able to direct organisations in deploying expertise and resources to support improved delivery of services across health and social care in LLR through robust infrastructure design and planning. The table below outlines key infrastructure priorities current and future across Health and Social Care.

Organisational Coverage	Technical Infrastructure Capability	Infrastructure Capability Type	Professional / Patient / Organisational Capability	Current or Future
Leicester, Leicestershire and Rutland (LLR)	We have introduced a Federated Wi Fi initiative through organisational agreement and subsequent reciprocal arrangements to publish organisational wireless network device identifiers (SSIDs) to other organisations. Initiative included development of LLR protocol alongside Wi-Fi hotspot generation all GP Practices, all Care Homes, UHL and LPT sites and a number of Council buildings.	Mobile working	Mobile and agile working for the health and social care and partner’s workforce in Leicestershire, Leicester and Rutland across various sites.	Current
	Integrating LLR Points of Access project. Development of a strategic options appraisal for the integration of the different Single Points of Access (SPA) within Leicester, Leicestershire and Rutland (LLR) across Health and Social Care.	Unified Communications	Improved patient access, workforce awareness and professional to professional connectivity to underpin Health and Social Care activities in LLR Single Points of Contact.	Current
Leicester Partnership Trust (LPT)	Wider use of social media needs to be evaluated and if found to be beneficial endorsed as part of the E-Communication Strategy subject to approval	Unified Communication	Channel shift allowing greater communication	Future
	Commission the redevelopment of its external web presence	Unified Communication	Improved public access and interaction with the Trust.	Future
	Assessment of functionality required by staff to assist them in their work and commission a redevelopment of e-source intranet.	Unified Communication	Improved workforce access and interaction with the Trust.	Future
	LPT will develop a patient portal as a single point of access for service users	Unified Communication	Patients able to view their transactions with the Trust.	Future
	ChatHealth is the first Web Based Clinical App that LPT has developed outside of LHS.	Mobile Working	Message management application for staff for use on mobile devices.	Current
	A project will be initiated to look at how existing systems can be mobilised on tablet, or laptop computers including LPT developing a new portfolio of mobility equipment that it wishes to use in conjunction with LHS.	Mobile Working	Will enable bedside data entry in real time	Future





Organisational Coverage	Technical Infrastructure Capability	Infrastructure Capability Type	Professional / Patient / Organisational Capability	Current or Future
Leicestershire Partnership Trust (LPT)	LHIS recently achieved the HISA standard from HSCIC (accredited to supply Health Informatics to the NHS), Cyber Essentials (first public sector organisation in UK) and is working towards ISO 27001 for IT Security of its Data Centre and Infrastructure Services.	Cyber Security	Robust gatekeeping of electronic patient records and information captured during associated care interactions	Current
	LPT will finalise the product set to use for service user video conferencing in 2015/16 and promote a wider adoption within services going forward	Mobile Working	Allows real time virtual interaction with professionals and service users during routine contacts	Current
	LPT working with LHIS will undertake a review of the corporate unified communications marketplace with a view to Trust wide adoption	Unified Communication	N/A	Current
	Policy therefore needs to shift the emphasis to making home based staff as a supported choice that a manager and employee could make if agreed to be appropriate	Mobile Working	Staff in the field can undertake duties as part of their normal working days from home	Future
	LPT to investigate the usage of a corporate public Wi-Fi account combined with an Intelligent VPN client.	Mobile Working	Automatic connection for staff at Wi Fi hotpots	Future
University Hospitals of Leicester (UHL)	Redevelopment of internal intranet with a view to identifying content for sharing outside of UHL and making specific areas or applications available to partner organisations	Unified Communication	Improved ability to share information and collaborate across LLR organisations	Future
	Trust wide adoption of corporate unified communication tool (Skype for Business), moving toward federation options for cross organisational connectivity	Unified Communication	Improve professional connectivity, reduce unnecessary cross site travel	Current
	Standardise provision of user access to systems and records	Cyber Security	Provide timely access to systems and resources in a unified manner	Future
	Implementation of electronic capture of nursing and medical observations and clinical handover data via mobile devices at the bedside	Mobile Working	Gain efficiencies in nursing and clinician time, improve patient safety and quality of data collection	Current
	Consolidate and develop cross organisational interoperability based on approved standards e.g. HL7	Interoperability / Standardisation	Improve cross organisational data sharing	Future
	Apply standard data collection mechanisms e.g. SNOMED CT	Standardisation	Improve quality and granularity of data collection, enable improved peer review and analytic capabilities	Future



Organisational Coverage	Technical Infrastructure Capability	Infrastructure Capability Type	Professional / Patient / Organisational Capability	Current or Future
Primary Care General Practice	Introduce principle clinical systems access to mobile tablet devices such as Apple iPads.	Mobile Working	Provide clinicians with the ability to interact with a patients records with ability to read and write as if they are in a practice environments	Future
Local Authorities	Leicestershire County, Rutland County and Leicester City Councils are looking to pilot the use of "Briefcase" functionality with social worker staff. Additional information captured at the visit can be synchronised back to Council network once connection is available.	Mobile Working	Allows offline access to social care user records and information from Liquid Logic whilst on visits in the community.	Future
	Leicester City Council is using protected and encrypted Wi-Fi enabled laptops for some social care staff	Mobile Working	Flexible and remote working enabled for staff through access to local authority applications	Current
	Leicester City Council review of mobile devices to rollout to social care staff	Mobile Working	Provides more easy and efficient recording of information in case management systems	Future
	Leicestershire County Council is considering the introduction of virtual desktop across Leicestershire County Council	Mobile Working	Enabled staff to work more flexibly	Future
	Leicestershire County Council is exploring the use of Skype for Business internally and, in future with partners	Mobile Working	Allows real time virtual interaction with professionals and service users during routine contacts	Future
	Leicestershire County Council is also actively working with partners to federate Active Directories to create trusted networks	Unified Communication	Simplification of direct access to each other's line of business systems and address books	Current
	Leicestershire County Council uses a mix of internally hosted and increasingly cloud hosted services that provide infrastructure as a service through to fully managed SaaS solutions. These are linked through secure VPN's.	Cyber Security	Robust gatekeeping of electronic patient records and information captured during associated care interactions	Current
	Leicestershire County Council Remote access is through 2 factor authentication using Swivel tokens and AD logins.	Mobile Working	Capability for staff to work from other locations or home using provided technology or their own devices (if on VDI).	Current
	Leicester City Council will Implement NHS SmartCards for staff	Cyber Security	Secure view access to Health information for social care staff	Future





Organisational Coverage	Technical Infrastructure Capability	Infrastructure Capability Type	Professional / Patient / Organisational Capability	Current or Future
Local Authorities	Leicester City Council have rolled out Microsoft Lync	Unified Communications	Staff are able to instant message and video conference to work collaboratively working	Current
	Leicester City Council will review of infrastructure resilience capabilities to cope with more public and on-line systems and growing demand for use of the systems e.g. Telecare devices and associated management	Mobile Working	Allows expansion of Telecare asset base and associated management of devices going forward	Future
	Leicester City Council will review systems for use for Integrated Care and Response Services (ICRS) that respond to urgent care required in the community	Mobile working	Real time information for professionals to provide services for patients and service users	Future
	Leicester City Council has Wi-Fi access for the public from many sites such as libraries		Public access to Wi-Fi for self-managed services	Current
	Leicester City Council is enabling further sites, such as Leisure Centres, for public Wi-Fi access based on demand		Public access to Wi-Fi for self-managed services	Future
	Rutland County Council is renewing its corporate website to improve ease of use, allow improved integration with back office systems and to improve content management.	Unified Communication	Allowing relevant information to be delivered more effectively	Current
	Rutland County Council's information and advice portal, the Rutland Information Service (RIS), is also being enhanced. Key enhancements include organisation and presentation of content about services and module allowing service users to identify suitable personal assistants improve self-service access to assistive technology, small adaptations and other equipment.	Unified Communication	Better access to the public and intermediary advisors and sign posters	Current
East Midlands Ambulance Service (EMAS)	Implementation of improved connectivity using 4G/LTE bearers for the connection "on the road" of mobile devices for clinical purposes. Reprourement in 2015 of 4G dedicated APN (improvement over legacy 3G technology) with enhanced coverage where required at key sites across the East Midlands region.	Mobile working	Mobile and agile working for the workforce EMAS working across all regions within the East Midlands area.	Current
	Federation of EMAS Wi-Fi at acute locations to support enhanced patient handover on arrival through broadcast of EMAS specific SSID's across the region.	Mobile working	Mobile and agile working for the workforce EMAS working across all regions within the East Midlands area, combined with greater reliability of handover between care providers.	Current
	Re-procurement of Electronic Patient Record system (EPR) to ensure paper free acute and emergency care, supporting the initial capture of patient specific care information to support onward electronic transfer.	Mobile working	Will allow greater integration with the wider healthcare system and associated access to clinical information, capacity management to support real time clinical decision making. Provides assurance of quality of data being captured and will support signposting to the correct care setting for patients.	Current /Future





Organisational Coverage	Technical Infrastructure Capability	Infrastructure Capability Type	Professional / Patient / Organisational Capability	Current or Future
East Midlands Ambulance Service (EMAS)	Federation of VOIP based telephony services between care providers (e.g. DHU/EMAS for 111 call handling) and with other Care Portals.	Unified Communication	Will allow greater accuracy of patient transfer, and support more efficient delivery of care between organisations through ensuring a "capture once/ share many" approach to the population of relevant patient information	Current
	We will review our wide area networks (WAN) to ensure that links are highly resilient, and provide availability levels to support on-going care in a 24/7/365 environment	Mobile working	Ensuring high availability of network connections will support access to patient information for our clinicians in real time.	Current
	In order to support a "single pane of glass" for our clinicians, irrespective of their location we wish to embed local data integration tools that will allow us to capture a diverse range on information from disparate systems, and to present these in a unified manner.	Mobile working	Mobile and agile working for the workforce EMAS working across all regions within the East Midlands area, combined with greater reliability of handover between care providers.	Current
	Greater adoption of cloud based services, with a migration from on-premise data warehousing.	Cyber security	Robust gatekeeping of electronic patient records and information captured during associated care interactions, supported by ease of access "on the road" for authenticated users (i.e. clinicians) to patient information or (for example) local capacity management information	Future
	Wider use of "smartphone" style devices for clinicians, to support access to relevant clinical information and decision making toolsets. Tools such as DoS and Paramedic Pathway, NEWS scores (etc.) can be provided to clinicians via a mobile device.	Mobile working	This will support clinical signposting for patients in order that they receive the most appropriate level of care.	Future
	Through the deployment of unified comm's systems to multiple remote locations (e.g. satellite offices etc.) we will be able to access a larger number of CAT clinicians, thereby providing enhanced capability.	Unified communication	Extending the availability of CAT (clinical assessment team) members will support the most appropriate delivery of care for a given presenting condition. Will enhance our ability to deliver the right care.	Future





8. Minimising risks arising from technology

Here are the LLR plans to ensure that risks are minimised from the implementation of new technology:

- **Data security** - Service Development and Improvement Plans (SDIPs) are in place to ensure that data security has been implemented to GS1 standards within our main providers. GS1 standards incorporated within barcodes and RFID are increasingly used to provide improved patient safety, deliver greater regulatory compliance and drive operational efficiencies. All providers are GS1 standard compliant.
- **Clinical safety** - Clinical safety officers are employed by organisations to ensure that systems are clinically safe to implement within an organisations. Suppliers also have a responsibility to be clinically safe and have to comply with the ISB standards.
- **Data quality** - improvements in data quality of data held within the care record and captured will be increasingly important when data is shared further. Move to a standardised clinical terminology SNOMED-CT will require great support for data quality.
- **Data protection and privacy** - All systems are required to comply to data protection laws if they hold personal information. This is assured through the organisations that purchase and implement the systems. The ability to audit and consent for sharing and viewing of information should be built within all clinical systems. The LLR information governance process will ensure that privacy of the patient held data is protected. All new projects require privacy impact assessments done prior to implementation.
- **Accessible information standards** - Is currently being assessed and implemented by all provider organisations linking in with equality leads.
- **Business continuity and disaster recovery** - All IT suppliers for provider organisations have business continuity and disaster recovery plans.
- **Equality and Diversity** - IM&T leads are working with equality and diversity leads to ensure that impact of the changes that will take place with digital technology supports equality and diversity requirements. This will be done by the creation of equality impact assessments for projects and an overarching equalities impact assessment for the LDR.





9. Timescales and Delivery of the Local Digital Roadmap

The timescales below will pinpoint the initiatives that have been identified to help deliver the capabilities identified within the roadmap. As the capabilities within the LDR develop there will be further initiatives that are identified for delivery. For further details regarding the full delivery plans please see Appendix 3 - full capabilities deployment schedule.

All of the technical changes listed require clear business change, training and communication to fully implement but will deliver substantial benefits to the service and service users.

2016/17

- Move away from fax referrals sent to LPT SPA to more secure electronic methods
- Remove paper letters being sent from UHL to GP practises
- Electronic Care Plan Phase 1 – SCR V2.1, MIG V2, SystemOne EPR Core
- MIG V2 and social care expansion
- Citizen Identity development
- SCR in Community Pharmacy
- Min 10% of patients actively accessing primary care services online
- Robust data security standards including cyber security
- GP summary information utilised across Urgent and Emergency Care settings
- Increase patient access to the full record (primary care access)
- Updates to GP2GP transfer
- Live waiting times for Urgent and Emergency Care
- Information Governance planning for whole system consent approach
- GP system to GP system interoperability to support federations
- Expansion of pathways on PRISM
- Improve digital maturity of organisations
- Mobile DOS for self-help and list of private and public services
- LLR wide agreed IM&T standards to submit as part of all LLR Wide system procurements
- Expansion of NerveCentre and eObs
- SystemOne implementation in CAMHS
- Fully implement electronic discharges from secondary care
- Completion of federation Wi-Fi
- Securely linking local global e-mails to NHSnet
- Incoming patient related E-mails to SystemOne going directly into the patient record
- Implementation of Liquidlogic PDS integration system to enable attaining NHS numbers in real time for Adults social care cases
- Organise SmartCards for Council staff to make use appropriate Health Systems
- Implement the CP-IS system for use by councils
- Mobile devices for social workers
- Social care professionals portal for assessments
- Real time Pharmacy analytics tool
- Pincer in General Practice
- PharmOutcomes in Pharmacy





Who	What will the 2016/17 changes mean?
Patients	<ul style="list-style-type: none"> • You can opt to have information about your care plan shared electronically with health care professionals that you interact with for your care. You would no longer need to repeat what medication you are on or what preferences for your healthcare that you have discussed with your GP to other healthcare professionals. • You would not need to keep paper copies of your care plan to hand over to other healthcare professionals. • Have one username and password to access multiple health apps and websites. • You can book your GP appointments online or on an app rather than having to phone the GP practice when it opens. You can order your repeat prescriptions and view your medical records using the same system. You can also have access to your full medical record if you request it with your GP practice.
Public	<ul style="list-style-type: none"> • Ability to see current waiting times for urgent care centres in your area. Allowing you the choice to decide where to go, whether that is the location closest to you, the location with the shortest wait or the location with greatest transport links. • You can visit a community pharmacy for assistance and be given more relevant advice as the pharmacist can have access to core medical information about you such as what medication you are on and if you have any reactions to medication. • If you move from one GP practice to another your data will be electronically transferred to the new practice allowing your new practice to see your medical history.
Staff	<ul style="list-style-type: none"> • Systems will be greater protected to cyber-attacks allowing you to work without down time to systems and ensure that information is protected. • If you work for a federation or hub you would be able to book appointments, send tasks and access patient data across the federation. • You will have access to a greater suite of pathways on PRISM. This will improve pathway referrals and the quality of referrals. • Have easy access to the directory of service that can be shared with the patient. • Have software available to you that is adaptable for changes to be linked with it such as additional information being sent to it from other systems. • Nurses will have improved tools to record observations and allow for automated patient monitoring. • Pharmacy staff can have access to better analytics and be able to capture data about the patient electronically.





2017/18

- Whole system consent model (IG)
- SCR in Social Care
- Electronic Prescription Service Phase 4
- E-Referrals updates
- Child Protection Information System (CPIS)
- Mobile Pathways (PRISM)
- Mobile DOS
- Social Care receive timely electronic admission, discharge and withdrawal notices from secondary care
- Real time NHS number matching for all patients
- Electronic Patient Triaging
- Heat maps of services for urgent and emergency care
- Implementation of Pharma Outcomes or suitable records for pharmacies
- Ability for patients to contribute to their records – include patient statistics to be uploaded to the care record
- Single clinical system across all primary care
- NHS number used in real time for all services
- Implementation of the Midlands Accord (cross boarder data sharing)
- Extending patient online to include alerts and notifications
- Improvements in population health management tools
- Increase Wi-Fi coverage for staff
- More portable devices for staff to work in an agile way
- Infrastructure to support federations and hubs
- UHL new EPR implementation
- Implementation of SystmOne for tablet devices
- Briefcase systems for use by Social Care and finance staff when visiting service users
- Online patient access to social care assessments





Who	What will the 2017/18 changes mean?
Patients	<ul style="list-style-type: none"> • Data about your care will be available to social care organisations (with consent) to improve the level of care you receive from that service. • You will have the ability to pick up your prescription from pharmacy that is not your regular pharmacy. This will increase convenience of collecting medication. • Ability to access further services at local pharmacies rather than going to a GP or hospital setting. • You will have the ability to add to your records, such as ask questions about your care or input information about your own monitoring such as blood pressure. • You will have an alert on your phone to say that you have a new message or require upload of further information to your patient online system.
Public	<ul style="list-style-type: none"> • Increase options to get a quicker decision on healthcare, such as whether you need to see a healthcare service or you can get further advice at your local pharmacy. • Your NHS number will be used to identify you throughout health and social care organisations.
Staff	<ul style="list-style-type: none"> • There will be a consent model to allow for access to patient information easier. This would mean that the patient is asked once rather than multiple times in the patient journey as to whether they would like their information to be accessed. • Increase advances in the E-Referrals system and greater use of advice and guidance between colleagues. • Social care staff will be alerted if a child with a child protection plan has visited an urgent and emergency care setting. • NHS numbers will be the unique identifier that can be used for all patients that come into the health and social care service so that further information can be accessible for the patient. • Pathways and director of services available on mobile devices. • Social Care staff will receive electronic admissions, discharge and withdrawal notices from Secondary Care. • Electronic letters will be sent to GP practices from hospitals around the midlands and possibly beyond in a common way. • You will be able to have more tools to support population health management and provide proactive support to patients. • You will have more areas to access your work IT system's network as there will be more Wi-Fi hotspots for you to work without the need to use VPN to access your system. • You will have more devices available to you like portable laptops and smartphones to be able to work from different locations. • Hubs and federations will be able to work in a hub and spoke model and have IT support for hours of operating.





2018/19

- Testing/piloting API within systems
- Self-Care/diagnosis/patient triage app
- Assistive technology
- Telehealth/Telecare rollout
- Patient access to Directory of Service's
- All referrals done by E-Referrals
- Acute trust letters sent electronically to patients or accessed via a patient portal
- Structured task based letters and workflows between health and social care
- Electronic Care Plans Phase 2 - Dynamic plans (health and social care)
- Social Care - voice recognition and touch screen data capture
- All clinical terminology recorded under SNOMED-CT
- Pre-referral diagnostic tools available in primary care
- Professional to professional communication tools
- Maximising all national assets - SCR, Patient Online, EPS, N3
- Buying at scale - collaborative procurement
- System optimisation for speed of access
- Patient administration of personal budgets
- Data sharing from secondary care to primary care and between secondary care organisations
- Patient ability to input directly to online social care assessments





Who	What will the 2018/19 changes mean?
Patients	<ul style="list-style-type: none"> • Have the ability to use your smartphone, tablet or laptop to speak to a healthcare professional from the comfort of your own home. • Technology that can monitor your care can be given to you reducing the need to go to a health centre multiple times to provide readings relating to your health. • You will have the option of having letters sent to you via e-mail or patient portal rather than have paper copies sent to you. This is similar to how banking organisations have made the provision of electronic statements rather than posted paper copies. • If you have a Care Plan, you and your careers can have access to it electronically. You would also have the opportunity to contribute to that Care Plan. • You will have access to self-help portals that will enable you to purchase products and services directly from recommended suppliers. • You will have the ability to manage your own personal budget and decide on what services you should be receiving.
Public	<ul style="list-style-type: none"> • You will have access to NHS UK or via NHS Choices to view healthcare services that are available to you within your area.
Staff	<ul style="list-style-type: none"> • Greater IT systems that connect and talk to one another. • Directory of service available for all services to a patient can be referred to. • All referrals sent and received electronically to make them easier to track and manage. • Letters sent to GPs from hospitals will be tasked based so that it would reduce time spent annotating letters and focus on the tasks that are required by the GP to do for the patient. • Health and Social care plans will be shareable. Care plans can also be created outside of the GP practice. • Social Care staff will have alternative methods of capturing information such as voice recognition or touch screen technology. • Common clinical terminology (SNOMED-CT) will be used in all healthcare settings improving the quality of data capture. • There will be seamless data sharing in primary care services. This means that hubs and federations will be able to book appointments from a central local and send tasks to multiple locations. It also means that community nursing teams can view and add to the same patient record that the GP has. • In primary care, you will have greater tools available to you to diagnose the patient. This will help provide greater understanding on the diagnostic for referral and reduce the number of patients having to go to hospital for further diagnostic tests. • Professionals will be able to communicate with one another using instant messaging or video conferencing, improving interactions between health professionals and reducing travel. • You will be able to do more with the systems that you already have, for example the Summary Care Record will have greater information to support how you care for the patient. • Savings will be made buying equipment and software as it will be done at scale along with a number of organisations. • You will be able to access your systems quicker.





2019/20

- Single patient access portal (open API base) across health and social care
- Single citizen identity services linked to government verify and identity assurance
- Clinical Portal
- Shared Central Records
- Open API standards set for all clinical systems purchased within LLR
- Seamless sharing and flagging of appropriate patient data
- Privacy settings for consent managed by the patient
- Patient/Career access to the dynamic care plan and have the ability to add and interact with it
- Referrals from health services to social care done electronically
- Communication preferences and consolidating websites
- Improvements in communication for health promotion
- Mobile patient monitoring
- Federated active directory
- Development of an innovation hub
- Patient monitoring tools at home (e.g. meal consumption, medicines)





Who	What will the 2019/20 changes mean?
Patients	<ul style="list-style-type: none"> • You will have one log in to access a website that has all information about your health care and social care needs. • You can log into a website that will allow you to set who can have access to your data within a health and care setting. This is similar to setting your Facebook settings. • You will have the ability to define the level of communication send to you by the health service. • Staff can have the ability to monitor your meal consumptions and medicine administration remotely.
Public	<ul style="list-style-type: none"> • You can set up a single username and password that you can use to access many health and social care websites and apps. The websites will be able to tailor what you view based on your log in credentials. • You will have the ability to set preferences to how you receive information about health promotion. You will also have greater means of accessing information about health information. • Healthcare innovation and technology will be on par with other systems that you use such as online banking.
Staff	<ul style="list-style-type: none"> • You will have easier access to patient data held on different computer systems. The information will be structured to show you the information that is most appropriate for you and you will have intuitive flags to highlight important information for you. • If you work in healthcare you will be able to refer to social care electronically in a similar way to how you refer patients to other healthcare settings. • You will have the tools that you can offer patients to monitor their own conditions at home and the ability to monitor patients remotely. • You will have access of staff directory's across LLR.





2020/21

- Interoperability and data sharing with wider health partners like Optometrists, Dentists, Pharmacists
- 95% of GP patients to be offered e-consultation and other digital services
- Population analysis done on a public sector scale to help proactive support and vulnerable people
- API connectivity of all health and social care systems
- Patient self-monitoring using personal devices (info going directly to the GP)
- Patient self-care, management, pathway access
- Patient self service
- Unified communication between health, social care and cross boarder organisations
- Electronic mobile maternity app
- Every patient has access to digital health records that they can share with their families, carers and clinical teams
- Implementation of cognitive computing systems
- Free access to Wi-Fi for all patients
- Single Infrastructure Platform across LLR
- Paper-free at the point of use

Who	What will the 2020/21 changes mean?
Patients	<ul style="list-style-type: none"> • Greater services can have access to you data to provide improvements in your care without having to ask you. Such as dentists asking if you are on medication that may react to an anaesthetic. • You will be offered e-consultations to have a consultation with a healthcare professional using alternative methods than having to visit them at a GP practice or health centre. • You will be able to use your own devices like smartphones and smart watches to capture data about your health and for that to go directly to the GP. • You will have greater tools to allow for you to provide greater care for yourself. • You will have the ability to use more self-service tools without having to go through people to arrange things like visits by a care worker. • You will have the ability to electronic sharing your health record with other members of your family or health professionals. • Healthcare will be paperless in most places so information will be available more in electronic forms. • Maternity folders will become electronic and you would be able to view your maternity details online or via your smartphone. • You will have intelligent IT systems that can help you in your care by supporting things like rehabilitation and recovery.
Public	<ul style="list-style-type: none"> • You will have greater tools to support your health and wellbeing. There will be better advice and guidance on your health need or query. • You will have more intuitive tools to interact with the health service without human interaction. • You will have free access to Wi-Fi in all healthcare settings allowing you to browse the internet and stay connected.
Staff	<ul style="list-style-type: none"> • There will be greater systems that can link directly into the main clinical system that you use. • You will have the ability to communicate with professionals in health, social care and other cross border organisations.



10. Summary

The Leicester, Leicestershire and Rutland Local Digital Roadmap is designed to align to the LLR Sustainability and Transformation Plans over the next five years. The aim of the LDR is to strategically guide services to become paper free at point of care by 2021. The areas identified within this LDR have not only identified areas to become paper free at point of care but have gone beyond this to improve digital maturity of all organisations within LLR.

Here is a summary of LDR impact that will support the STP aims:

The care and quality gap - The LDR has identified key areas within the STP/BCT programmes to support clinical improvement. Changes in digital technology will help support pathway redesign and implement new models of care. Embedding of technology solutions within the workforce as part of a standard operating procedure will transform the level of quality information that is available to the care professional. Improvements in the speed and access to systems will help care professionals focus more on the care of the patient. New technology available for patients to access healthcare and monitoring tools to monitor their own information will help improvements in care.

The finance and efficiency gap - Digital technology will help to deliver new models of care and support the STP in being financially sustainable. Additional funding sources for innovation will be sourced as all new changes in digital technology require some degree of investment. However, this will be invest to save programmes that will generate high degree of savings. Each initiative will have benefits realisation to understand where benefits will be derived through

digital technology. By its nature changes in digital technology may not have a direct financial saving impact within IM&T but may have cost savings to the clinical service in the way that it is delivered.

The health and wellbeing gap - Digital technology will support bridging the health and wellbeing gap by providing greater tools to patients and the public to support self-care, self-monitoring and improving wellbeing. The public and patients will have greater interactions with the health service to get the right advice and more information to them. Greater proactive support with business intelligence and data analytics tools can help to ensure that support is given early to patients.

LLR IM&T group principals addressed sharing of care records, population data analysis, system wide efficiencies to improve integrated working, and supporting BCT Workstreams has been address through capabilities identified for digital technology.

Sharing care records - The LDR identifies plans to improve and build on the momentum of shared records. It will improve on areas that currently do not have shares with the aim to move to truly interoperable systems that will talk to one another.

Population data analysis - Improvements in existing tools and innovation within new analytics tools will help to provide greater intelligence on population health and will allow for proactive support to improve this. The LDR is supportive of using population health analytics tools to support the way care is delivered.

System wide efficiencies to improve integrated working - making best use of the systems that we have is identified within the LDR. In particular, maximising the use of existing systems and national systems is built into our capabilities. Digital technology changes will support integrated working, new models of care and help reduce barriers.



Supporting Better Care Together Clinical Workstreams

- working with the workstreams of the Better Care Together programme the LDR has identified areas for IM&T investment. There are some common themes that have been highlighted through the workstreams and these have been identified within the LLR capabilities for delivery. If further requirements evolve from the BCT programme then this will be reflected in an updated version of the LDR.

The LDR states the Readiness of LLR to make the digital change. This includes how project benefits will be managed, how funding will be sourced, the governance that is in place, the mechanism to which project will be delivered and how research will help deliver our digital capabilities. All of this will be underpinned by the maturity of our organisations. Digital Maturity has been baselined for all major providers and will be extended to further stakeholders such as Councils. Analysis has been done on the baseline against the national average to show the current status. Work will be done to improve digital maturity across the board for organisations. The improvements will be monitored through the DMI process and will help to focus organisations on common domain areas.

Capabilities have been identified within seven domain areas of the LDR:

- Records, assessments and plans
- Transfer of care
- Orders and results management
- Medicines management and optimisation
- Decision support
- Remote care
- Asset and resource optimisation

Within each domain there are capability plans that will be delivered within the LLR footprint. Each capability is seen as an achievable area within five years to help deliver digital improvements in the domain areas. There are ten universal capabilities set nationally that have been reviewed and assessed within the LLR footprint. In some areas LLR is fully delivering and have completed initiatives to make the capability

possible. In other areas that are some organisations that are fully completed but other need to commence initiatives to deliver of the capability. There is also an area that has not yet started, thus empowering the LLR health community to ensure that the capability is planned and delivered.

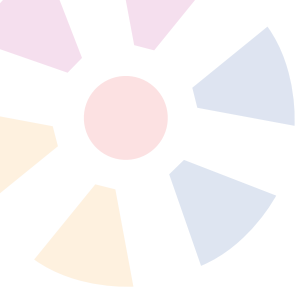
Information sharing has been reviewed in terms of the sharing strategies going forward and the aim to have a common standard for interoperability that will be a part of all new procurements. Information Governance process has been identified from a governance perspective and future direction to help support digital capability.

Infrastructure of our provider organisations has been analysed to ensure that capability is in place for mobile working, cyber security and unified communication.

Where possible, capabilities have been identified as initiatives to help to deliver the LDR ambitious aims. This is represented by the changes that will take place every year for the next five years and show how the changes will benefit patients, the public and staff on a practical basis.

The capabilities and delivery plan will work to delivery our vision of to ensure robust shared access to paperless patient records by implementing greater interoperability between systems, consolidating the various number of software applications that we have and implementing new technology. This will be done across all clinical interfaces across LLR to improve patient outcomes and supported integrated care models by 2021.

Overall, the LDR defines the digital ambition of LLR as part of the process for the STP. It demonstrates the driver for collective change across LLR. The LDR shows the impetus of collaborative working across LLR to improve services for patients and the public within health and social care. Moreover, the LDR sets the direction for digital innovation and change to support the five year forward view.



APPENDICES





Appendix 1 - Digital Maturity Index Summary Results

Section	Type	EMAS	LPT	UHL	National Average
Strategic Alignment	Readiness	55	75	80	76
Leadership	Readiness	65	85	100	77
Resourcing	Readiness	45	90	90	66
Governance	Readiness	50	70	90	74
Information Governance	Readiness	38	79	92	73
Records, Assessments & Plans	Capabilities	33	52	63	44
Transfers Of Care	Capabilities	43	38	78	50
Orders & Results Management	Capabilities	0	18	87	52
Medicines Management & Optimisation	Capabilities	28	87	74	29
Decision Support	Capabilities	39	63	42	36
Remote & Assistive Care	Capabilities	17	0	17	33
Asset & Resource Optimisation	Capabilities	31	35	75	42
Standards	Capabilities	17	35	83	41
Enabling Infrastructure	Enabling Infrastructure	61	70	82	68
Readiness Average	Readiness	50	79	90	73
Capabilities Average	Capabilities	26	41	64	40
Enabling Infrastructure Average	Enabling Infrastructure	61	70	82	68

Appendix 2 - Universal Capabilities

Universal Capability:

Professionals across care settings can access GP-held information on GP-prescribed medications, patient allergies and adverse reactions.

Capability Group:

Records, assessments and plans.

Defined Aims:

- Information accessed for every patient presenting in an A&E, ambulance or 111 setting where this information may inform clinical decisions (including for out-of-area patients)
- Information accessed in community pharmacy and acute pharmacy where it could inform clinical decisions



A. Baseline

Please summarise the current baseline across your local health and care system. The data may encompass deployment penetration (e.g. deployed in 80% of practices), volumetrics (e.g. accessed 2500 times in Q3) and take-up (e.g. accessed for 95% of prescriptions).

This is currently being accessed via the MIG, SystmOne TPP EPR Core or Summary Care Record (SCR). Summary Care Record deployed to 100% of GP practices. UHL accessed SCR 1566 times in Q4 15/16. LPT accessed the SCR 786 times in Q4 15/16.

MIG data has been access by the following organisation:

OOH 235
EMAS 72 (Jan/Feb data missing)
Oadby and Wigston UCC 26 (Jan/Feb data missing)
Oakham UCC 3 (Jan/Feb data missing)
Melton Mowbray UCC 4 (Jan/Feb data missing)
Market Harborough UCC 0 (Jan/Feb data missing)

SystmOne TPP EPR Core is accessible by all clinicians within UHL

GP records are access by community nursing staff using TPP SystmOne. The community services system is TPP SystmOne.

LOROS access GP records via TPP SystmOne (progress to be made to move to access the MIG)

EMAS have access to GP records via the MIG and also use the SCR (both systems are not integrated within the native clinical system)

111 have access to GP records via the MIG and also use the SCR





Remember that 'clear momentum' is expected in 16/17 and 'substantive delivery' in 17/18. Also note that you can go further than the defined aims – examples are provided in the Universal Capabilities Information and Resources document.

Year	Ambition
16/17	Record automatically updated within UHL. Care Plans fully updatable. LPT to start work to send information to Liquid Logic. This is currently being investigative work. Community nursing teams having access to the MIG. Loros having access to the MIG.
17/18	Social Care update records - reduce any keying. Same patient user – System flags it up (Social Care Liquid Logic). SCR in Social Care. Social care having access to the MIG.

Universal Capability:

Clinicians in U& EC settings can access key GP- held information for those patients previously identified by GPs as most likely to present (in U&EC).

Capability Group:

Records, assessments and plans.

Defined Aims:

- Information available for all patients identified by GPs as most likely to present, subject to patient consent, encompassing reason for medication, significant medical history, anticipatory care information and immunisations.
- Information accessed for every applicable patient presenting in an A&E, ambulance or 111 setting (including for out-of-area patients).



A. Baseline

Please summarise the current baseline across your local health and care system. The data may encompass deployment penetration (e.g. deployed in 80% of practices), volumetrics (e.g. accessed 2500 times in Q3) and take-up (e.g. accessed for 95% of prescriptions).

Completed

A&E – have access to TPP SystemOne and MIG. It is currently being configured for specific staff groups.

EMAS have access to GP records via the MIG and also use the SCR (both systems are not integrated within the native clinical system).

111 have access to GP records via the MIG and also use the SCR

Special Patient Notes is available within Out of Hours.

With reference to the defined aims set out above, please set out your ambition in the grid below. Remember that 'clear momentum' is expected in 16/17 and 'substantive delivery' in 17/18. Also note that you can go further than the defined aims – examples are provided in the Universal Capabilities Information and Resources document.

Year	Ambition
16/17	Completed Clinical Triage can see TPP SystemOne EPR Core and EMIS viewer. SCR2.1/Care plans Clinicians and U&EC have access to risk stratified patients details
17/18	



Universal Capability:

Patients can access their GP record.

Capability Group:

Records, assessments and plans.

Defined Aims:

- Access to detailed coded GP records actively offered to patients who would benefit the most and where it supports their active management of a long term or complex condition.
- Patients who request it are given access to their detailed coded GP record.

A. Baseline

B. Please summarise the current baseline across your local health and care system. The data may encompass deployment penetration (e.g. deployed in 80% of practices), volumetrics (e.g. accessed 2500 times in Q3) and take-up (e.g. accessed for 95% of prescriptions).

Completed

100% of GPs offer access to the summary and full coded care record access to patients.

Patients who request it are given access to their detailed coded GP record.

C. Ambition

With reference to the defined aims set out above, please set out your ambition in the grid below. Remember that 'clear momentum' is expected in 16/17 and 'substantive delivery' in 17/18. Also note that you can go further than the defined aims – examples are provided in the Universal Capabilities Information and Resources document.

Year	Ambition
16/17	Development of GP clinical systems capability will allow for assessments and care plans to be viewable. This will help to support seven day working underpinned by access to digital, real-time and comprehensive patient information. Depending on the clinical system issues with free text.
17/18	





Universal Capability:

GPs can refer electronically to Secondary Care.

Capability Group:

Transfers of care.

Defined Aims:

- Every referral created and transferred electronically.
- Every patient presented with information to support their choice of provider.
- Every initial outpatient appointment booked for a date and time of the patient's choosing (subject to availability).
- [By Sep 17 – 80% of elective referrals made electronically].

A. Baseline

Please summarise the current baseline across your local health and care system. The data may encompass deployment penetration (e.g. deployed in 80% of practices), volumetrics (e.g. accessed 2500 times in Q3) and take-up (e.g. accessed for 95% of prescriptions).

Commonly referrals done via E-referrals or ICE to secondary care this is available to 100% of GP practices. Any referrals out of this that are currently being done by faxing will be done electronically via E-referrals or by moving to secure e-mail link with NHSnet.

B. Ambition

With reference to the defined aims set out above, please set out your ambition in the grid below. Remember that 'clear momentum' is expected in 16/17 and 'substantive delivery' in 17/18. Also note that you can go further than the defined aims – examples are provided in the Universal Capabilities Information and Resources document.

Year	Ambition
16/17	Sending electronic referrals to LPT – ERS started within LPT – patient choice is given Work will be done to ensure patients are presented with information to support their choice of provider.
17/18	Every initial outpatient appointment booked for a date and time of the patient's choosing





Universal Capability:

GPs receive timely electronic discharge summaries from Secondary Care.

Capability Group:

Transfers of care.

Defined Aims:

- All discharge summaries sent electronically from all acute providers to the GP within 24 hours.
- All discharge summaries shared in the form of structured electronic documents.
- All discharge documentation aligned with Academy of Medical Royal Colleges headings.

A. Baseline

Please summarise the current baseline across your local health and care system. The data may encompass deployment penetration (e.g. deployed in 80% of practices), volumetrics (e.g. accessed 2500 times in Q3) and take-up (e.g. accessed for 95% of prescriptions).

Structured and within 24hrs - Currently achieved within Leicestershire. This is done via the ICE system. However, there are a few areas that do not have this capability. Discharge summaries shared in a form that is structured electronically.

B. Ambition

With reference to the defined aims set out above, please set out your ambition in the grid below. Remember that 'clear momentum' is expected in 16/17 and 'substantive delivery' in 17/18. Also note that you can go further than the defined aims – examples are provided in the Universal Capabilities Information and Resources document.

Year	Ambition
16/17	A&E within year for discharges E-mail into SystmOne practices out of county – active work programme for out of county providers. LPT discharge letters electronically – SystmOne, Rio
17/18	LPT discharge letters electronically – Other systems moved to SystmOne or Rio All discharge documentation aligned with Academy of Medical Royal Colleges headings





Universal Capability:

Social Care receive timely electronic Assessment, Discharge and Withdrawal Notices from Acute Care.

Capability Group:

Transfers of care.

Defined Aims:

- All Care Act 2014 compliant Assessment, Discharge and associated Withdrawal Notices sent electronically from the acute provider to Local Authority Social Care within the timescales specified in the Act.

A. Baseline

Please summarise the current baseline across your local health and care system. The data may encompass deployment penetration (e.g. deployed in 80% of practices), volumetrics (e.g. accessed 2500 times in Q3) and take-up (e.g. accessed for 95% of prescriptions).

This currently does not happen electronically.

B. Ambition

With reference to the defined aims set out above, please set out your ambition in the grid below. Remember that 'clear momentum' is expected in 16/17 and 'substantive delivery' in 17/18. Also note that you can go further than the defined aims – examples are provided in the Universal Capabilities Information and Resources document.

Year	Ambition
16/17	Work required to connect ICE into Liquid Logic – scope and analyse the work
17/18	Work required to complete ICE into Liquid Logic – There is a dependency on technology and funding



Universal Capability:

Clinicians in unscheduled care settings can access child protection information with Social Care professionals notified accordingly.

Capability Group:

Decision support.

Defined Aims:

- Child protection information checked for every child or pregnant mother presenting in an unscheduled care setting with a potential indicator of the child being at risk (including for out-of-area children).
- Indication of child protection plan looked after child or unborn child protection plan (where they exist) flagged to clinician, along with Social Care contact details.
- The social worker of a child on a child protection plan looked after or on an unborn child protection plan receives a notification when that child presents at an unscheduled care setting and the clinician accesses the child protection alert in their record.

A. Baseline

Please summarise the current baseline across your local health and care system. The data may encompass deployment penetration (e.g. deployed in 80% of practices), volumetrics (e.g. accessed 2500 times in Q3) and take-up (e.g. accessed for 95% of prescriptions).

Child Protection Information System (CPIS) had not been implemented locally. Work has been done for Councils to use the NHS number as a primary identifier.

B. Ambition

With reference to the defined aims set out above, please set out your ambition in the grid below. Remember that 'clear momentum' is expected in 16/17 and 'substantive delivery' in 17/18. Also note that you can go further than the defined aims – examples are provided in the Universal Capabilities Information and Resources document.

Year	Ambition
16/17	All Councils to provide implement and data to CPIS implementation within this year.
17/18	NHS provider organisations to use the information and link in with CPIS via the SCR.





Universal Capability:

Professionals across care settings made aware of end - of- life preference information.

Capability Group:

Decision support.

Defined Aims:

- All patients at end-of-life able to express (and change) their preferences to their GP and know that this will be available to those involved in their care.
- All professionals from local providers involved in end-of-life care of patients (who are under the direct care of a GP) access recorded preference information where end- of-life status is flagged, known or suspected.

A. Baseline

Please summarise the current baseline across your local health and care system. The data may encompass deployment penetration (e.g. deployed in 80% of practices), volumetrics (e.g. accessed 2500 times in Q3) and take-up (e.g. accessed for 95% of prescriptions).

Currently have 'deciding right' templates that adhere to EPACCS standards within both TPP SystemOne and EMIS for all GP practices. Assessment work has taken place on the best solution to share end-of-life care data. Bids will be put forward to the Estates and Technology Transformation Funds to help fund resources to implement phase 1 of the care planning solution to incorporate end of life care data.

B. Ambition

With reference to the defined aims set out above, please set out your ambition in the grid below. Remember that 'clear momentum' is expected in 16/17 and 'substantive delivery' in 17/18. Also note that you can go further than the defined aims - examples are provided in the Universal Capabilities Information and Resources document.

Year	Ambition
16/17	Planning taking place to delivery this through Summary Care Record V2.1 , MIG V2 and TPP SystemOne EPRCore. Mapping of data. Dependency technology availability. ISA's need to be in place.
17/18	Social Care to have access to patient care data including End of Life preferences.





Universal Capability:

GPs and Community Pharmacists can utilise electronic prescriptions.

Capability Group:

Medicines, Management and Optimisation.

Defined Aims:

- All permitted prescriptions electronic
- All prescriptions electronic for patients with and without nominations - for the latter, the majority of tokens electronic
- Repeat dispensing done electronically for all appropriate patients
- [By end 16/17 – 80% of repeat prescriptions to be transmitted electronically]

A. Baseline

Please summarise the current baseline across your local health and care system. The data may encompass deployment penetration (e.g. deployed in 80% of practices), volumetrics (e.g. accessed 2500 times in Q3) and take-up (e.g. accessed for 95% of prescriptions).

Most GP practices (132/140) and all pharmacies (228/228) are EPS2 compliant.

Repeat dispensing can be done electronically for all appropriate patients.

A total of 8 GP practices have not implemented EPS2, all of whom are dispensing practices. There has been proactive engagement to move the remaining dispensing GP practices over to EPS but because EPS2 is not a contractual requirement, changes cannot be enforced. The EPS2 project board has decided to close the project and agreed to migrate the remainder of the GP practices once they agree to move or it becomes a contractual requirement.

Community pharmacies are in the process of having access to the SCR.

B. Ambition

With reference to the defined aims set out above, please set out your ambition in the grid below. Remember that 'clear momentum' is expected in 16/17 and 'substantive delivery' in 17/18. Also note that you can go further than the defined aims – examples are provided in the Universal Capabilities Information and Resources document.

Year	Ambition
16/17	EPS phase 4 (when is available nationally) – currently in planning phase. LLR are not part of the early adopter programme.
17/18	All dispensing practices move to EPS2.





Universal Capability:

Patients can book appointments and order repeat prescriptions from their GP practice.

Capability Group:

Remote care.

Defined Aims:

- [By end 16/17 – 10% of patients registered for one or more online services (repeat prescriptions, appointment booking or access to record)].
- All patients registered for online services use them above alternative channels.

A. Baseline

Please summarise the current baseline across your local health and care system. The data may encompass deployment penetration (e.g. deployed in 80% of practices), volumetrics (e.g. accessed 2500 times in Q3) and take-up (e.g. accessed for 95% of prescriptions).

Completed

All patients in LLR have access to Patient online from the GP clinical systems this allows them to request repeat prescriptions, appointment booking and access their health record. 100% of GP practices have been enabled to provide this functionality.

B. Ambition

With reference to the defined aims set out above, please set out your ambition in the grid below. Remember that 'clear momentum' is expected in 16/17 and 'substantive delivery' in 17/18. Also note that you can go further than the defined aims – examples are provided in the Universal Capabilities Information and Resources document.

Year	Ambition
16/17	Greater awareness to the public about the patient online functionality.
17/18	





Appendix 3 - Capabilities Deployment Schedule

Capability					Locally defined attributes	
Who (Impact)	What	Year	Capability group	Funding	LLR Strategic Principle	Project Lead
GPs	Move away from fax referrals sent to LPT SPA to more secure electronic methods	16/17	Transfers of care	Internal	System wide efficiencies to improve integrated working	LHIS
UHL	Remove paper letters being sent from UHL to GP practises	16/17	Transfers of care	Internal	System wide efficiencies to improve integrated working	UHL
LLR Providers	Electronic Care Plan Phase 1 – SCR V2.1, MIG V2, SystmOne EPR Core	16/17	Records, assessments and plans	Combined	Sharing care records	LHIS
LLR Providers	MIG V2 and social care expansion	16/17	Records, assessments and plans	External	Sharing care records	AGEM/LHIS
Patients	Citizen Identity development	16/17	Records, assessments and plans	Combined	Sharing care records	LPT/LHIS
Pharmacists	SCR in Community Pharmacy	16/17	Records, assessments and plans	External	Sharing care records	AGEM
Patients	Min 10% of patients actively accessing primary care services online	16/17	Records, assessments and plans	Internal	Sharing care records	AGEM/LHIS
LLR Providers	Robust data security standards including cyber security	16/17	Asset and resource optimisation	Internal	System wide efficiencies to improve integrated working	LLR Providers IT departments
Urgent & Emergency Care providers	GP summary information utilised across Urgent and Emergency Care settings	16/17	Records, assessments and plans	Internal	Supporting Better Care Together Clinical Workstreams	Vanguard
Patients	Increase patient access to the full record (primary care access)	16/17	Records, assessments and plans	Internal	Sharing care records	AGEM/LHIS
GPs	Updates to GP2GP transfer	16/17	Transfers of care	Internal	System wide efficiencies to improve integrated working	LHIS
Patients	Live waiting times for Urgent and Emergency Care	16/17	Decision support	Internal	Supporting Better Care Together Clinical Workstreams	Vanguard
LLR Providers	Information Governance planning for whole system consent approach	16/17	Decision support	Internal	System wide efficiencies to improve integrated working	AGEM
GPs	GP system to GP system interoperability to support federations	16/17	Records, assessments and plans	Combined	Sharing care records	TBC
GPs	Expansion of pathways on PRISM	16/17	Transfers of care	Internal	Supporting Better Care Together Clinical Workstreams	LHIS
LLR Providers	Improve digital maturity of organisations	16/17	Other 1	Internal	System wide efficiencies to improve integrated working	LLR Providers
Urgent & Emergency Care providers	Mobile DOS for self-help and list of private and public services	16/17	Transfers of care	External	Supporting Better Care Together Clinical Workstreams	NHS England
LLR Organisations	LLR wide agreed IM&T standards to submit as part of all LLR Wide system procurements	16/17	Asset and resource optimisation	Internal	System wide efficiencies to improve integrated working	LLR Systems Enablement Group
UHL	Expansion of NerveCentre and eObs	16/17	Asset and resource optimisation	Internal	System wide efficiencies to improve integrated working	UHL
LPT	SystmOne implementation in CAMHS	16/17	Records, assessments and plans	Internal	Sharing care records	LHIS
LPT	Fully implement electronic discharges from secondary care	16/17	Transfers of care	Internal	System wide efficiencies to improve integrated working	LHIS



Urgent & Emergency Care providers	Mobile DOS for self-help and list of private and public services	16/17	Transfers of care	External	Supporting Better Care Together Clinical Workstreams	NHS England
LLR Organisations	LLR wide agreed IM&T standards to submit as part of all LLR Wide system procurements	16/17	Asset and resource optimisation	Internal	System wide efficiencies to improve integrated working	LLR Systems Enablement Group
UHL	Expansion of NerveCentre and eObs	16/17	Asset and resource optimisation	Internal	System wide efficiencies to improve integrated working	UHL
LPT	SystmOne implementation in CAMHS	16/17	Records, assessments and plans	Internal	Sharing care records	LHIS
LPT	Fully implement electronic discharges from secondary care	16/17	Transfers of care	Internal	System wide efficiencies to improve integrated working	LHIS
LLR Organisations	Completion of federation Wi-Fi	16/17	Asset and resource optimisation	Internal	System wide efficiencies to improve integrated working	LLR Organisations
GPs	Securely linking local global e-mails to NHSnet	16/17	Asset and resource optimisation	Internal	System wide efficiencies to improve integrated working	LHIS
GPs	Incoming patient related E-mails to SystmOne going directly into the patient record	16/17	Records, assessments and plans	Internal	System wide efficiencies to improve integrated working	LHIS
Councils	Implementation of Liquidlogic PDS integration system to enable attaining NHS numbers in real time for Adults social care cases	16/17	Asset and resource optimisation	Internal	System wide efficiencies to improve integrated working	Councils
Councils	Organise SmartCards for Council staff to make use appropriate Health Systems	16/17	Asset and resource optimisation	Internal	System wide efficiencies to improve integrated working	Councils
Councils	Implement the CP-IS system for use by councils	16/17	Records, assessments and plans	Internal	Sharing care records	Councils
Councils	Mobile devices for social workers	16/17	Records, assessments and plans	Internal	System wide efficiencies to improve integrated working	Councils
Councils	Social care professionals portal for assessments	16/17	Records, assessments and plans	Internal	System wide efficiencies to improve integrated working	Councils
CCG	Real time Pharmacy analytics tool	16/17	Medicines management and optimisation	Combined	Population data analysis	TBC
CCG	Pincer in General Practice	16/17	Medicines management and optimisation	Combined	System wide efficiencies to improve integrated working	TBC
CCG	PharmOutcomes in Pharmacy	16/17	Medicines management and optimisation	Combined	Sharing care records	TBC
CCG	NMS/MUR Bid for electronic platform to aid delivery	16/17	Medicines management and optimisation	Internal	System wide efficiencies to improve integrated working	TBC
CCGs	Whole system consent model (IG)	17/18	Records, assessments and plans	Internal	Sharing care records	TBC
Councils	SCR in Social Care	17/18	Records, assessments and plans	Internal	Sharing care records	Councils
GPs/Pharmacies	Electronic Prescription Service Phase 4	17/18	Medicines management and optimisation	Internal	System wide efficiencies to improve integrated working	TBC
GPs	E-Referrals updates	17/18	Transfers of care	Internal	System wide efficiencies to improve integrated working	TBC
LLR Providers	Child Protection Information System (CPIS)	17/18	Records, assessments and plans	Internal	Sharing care records	TBC
GPs	Mobile Pathways (PRISM)	17/18	Decision support	Internal	System wide efficiencies to improve integrated working	LHIS
Urgent and Emergency Care	Mobile DOS	17/18	Decision support	Internal	System wide efficiencies to improve integrated working	NHS England
LLR Providers	Real time NHS number matching for all patients	17/18	Records, assessments and plans	Internal	Sharing care records	TBC





LLR Providers	Real time NHS number matching for all patients	17/18	Records, assessments and plans	Internal	Sharing care records	TBC
GPs	Electronic Patient Triage	17/18	Decision support	External	Supporting Better Care Together Clinical Workstreams	TBC
Urgent and Emergency Care	Heat maps of services for urgent and emergency care	17/18	Transfers of care	Internal	System wide efficiencies to improve integrated working	Vanguard
Pharmacy	Implementation of Pharma Outcomes or suitable records for pharmacies	17/18	Records, assessments and plans	External	System wide efficiencies to improve integrated working	TBC
Patients	Ability for patients to contribute to their records – include patient statistics to be uploaded to the care record	17/18	Records, assessments and plans	Combined	Sharing care records	TBC
GPs, LPT	Single clinical system across all primary care	17/18	Records, assessments and plans	External	Sharing care records	TBC
CCGs, LLR Providers	Implementation of the Midlands Accord (cross boarder data sharing)	17/18	Transfers of care	Combined	Sharing care records	TBC
CCGs	Extending patient online to include alerts and notifications	17/18	Asset and resource optimisation	External	Sharing care records	TBC
CCGs	Improvements in population health management tools	17/18	Asset and resource optimisation	Combined	Population data analysis	TBC
LLR Organisations	Increase Wi-Fi coverage for staff	17/18	Asset and resource optimisation	Combined	System wide efficiencies to improve integrated working	TBC
LLR Organisations	More portable devices for staff to work in an agile way	17/18	Asset and resource optimisation	External	System wide efficiencies to improve integrated working	TBC
CCGs, federations	Infrastructure to support federations and hubs	17/18	Asset and resource optimisation	Internal	System wide efficiencies to improve integrated working	LHIS
UHL	UHL new EPR implementation	17/18	Records, assessments and plans	Internal	Sharing care records	UHL
GPs, Community health staff	Implementation of SystmOne for tablet devices	17/18	Asset and resource optimisation	Combined	Supporting Better Care Together Clinical Workstreams	TBC
Councils	Briefcase systems for use by Social Care and finance staff when visiting service users	17/18	Asset and resource optimisation	Internal	System wide efficiencies to improve integrated working	TBC
Patients	Online patient access to social care assessments	17/18	Records, assessments and plans	Internal	Sharing care records	TBC
Patients	Self-Care/diagnosis/patient triage app	18/19	Decision support	External	Supporting Better Care Together Clinical Workstreams	TBC
Patients	Assistive technology	18/19	Remote care	External	System wide efficiencies to improve integrated working	TBC
LLR Providers, Patients	Telehealth/Telecare rollout	18/19	Remote care	Combined	Supporting Better Care Together Clinical Workstreams	TBC
Patients	Patient access to Directory of Service's	18/19	Decision support	Combined	Supporting Better Care Together Clinical Workstreams	TBC
LLR Organisations	All referrals done by E-Referrals	18/19	Transfers of care	Internal	System wide efficiencies to improve integrated working	LLR Organisations
Patients	Acute trust letters sent electronically to patients or accessed via a patient portal	18/19	Transfers of care	Combined	Supporting Better Care Together Clinical Workstreams	UHL
LLR Organisations	Structured task based letters and workflows between health and social care	18/19	Transfers of care	Combined	System wide efficiencies to improve integrated working	TBC
LLR Organisations	Electronic Care Plans Phase 2 – Dynamic plans (health and social care)	18/19	Records, assessments and plans	External	Sharing care records	TBC





Councils	Social Care – voice recognition and touch screen data capture	18/19	Asset and resource optimisation	Combined	System wide efficiencies to improve integrated working	Councils
LLR Organisations	All clinical terminology recorded under SNOMED-CT	18/19	Records, assessments and plans	Internal	Sharing care records	TBC
GP's	Pre-referral diagnostic tools available in primary care	18/19	Decision support	External	Supporting Better Care Together Clinical Workstreams	TBC
LLR Organisations	Professional to professional communication tools	18/19	Remote care	External	System wide efficiencies to improve integrated working	TBC
LLR Organisations	Maximising all national assets – SCR, Patient Online, EPS, N3	18/19	Asset and resource optimisation	Combined	Supporting Better Care Together Clinical Workstreams	TBC
LLR Organisations	Buying at scale – collaborative procurement	18/19	Asset and resource optimisation	Internal	System wide efficiencies to improve integrated working	TBC
LLR Organisations	System optimisation for speed of access	18/19	Asset and resource optimisation	Combined	System wide efficiencies to improve integrated working	TBC
Councils	Patient administration of personal budgets	18/19	Asset and resource optimisation	Combined	Supporting Better Care Together Clinical Workstreams	Councils
GPs, Secondary Care Providers	Data sharing from secondary care to primary care and between secondary care organisations	18/19	Records, assessments and plans	Combined	Sharing care records	TBC
Councils	Patient ability to input directly to online social care assessments	18/19	Records, assessments and plans	External	System wide efficiencies to improve integrated working	Councils
LLR Organisations	Single patient access portal (open API base) across health and social care	19/20	Records, assessments and plans	External	Sharing care records	TBC
Patients	Single citizen identity services linked to government verify and identity assurance	19/20	Asset and resource optimisation	External	System wide efficiencies to improve integrated working	LPT/LHIS
LLR Organisations	Clinical Portal	19/20	Records, assessments and plans	External	Sharing care records	TBC
LLR Organisations	Shared Central Records	19/20	Records, assessments and plans	External	Sharing care records	TBC
LLR Organisations	Open API standards set for all clinical systems purchased within LLR	19/20	Asset and resource optimisation	Internal	System wide efficiencies to improve integrated working	TBC
LLR Organisations	Seamless sharing and flagging of appropriate patient data	19/20	Records, assessments and plans	Internal	Sharing care records	TBC
Patients	Privacy settings for consent managed by the patient	19/20	Records, assessments and plans	External	Sharing care records	TBC
Patients	Patient/Career access to the dynamic care plan and have the ability to add and interact with it	19/20	Records, assessments and plans	External	Sharing care records	TBC
Councils	Referrals from health services to social care done electronically	19/20	Transfers of care	Combined	System wide efficiencies to improve integrated working	TBC
LLR Organisations	Communication preferences and consolidating websites	19/20	Asset and resource optimisation	External	Supporting Better Care Together Clinical Workstreams	TBC
LLR Organisations	Improvements in communication for health promotion	19/20	Asset and resource optimisation	External	Supporting Better Care Together Clinical Workstreams	TBC
LLR Organisations	Mobile patient monitoring	19/20	Decision support	External	Supporting Better Care Together Clinical Workstreams	TBC
LLR Organisations	Federated active directory	19/20	Asset and resource optimisation	Internal	System wide efficiencies to improve integrated working	TBC
LLR Organisations	Development of an innovation hub	19/20	Asset and resource optimisation	Combined	Supporting Better Care Together Clinical Workstreams	TBC





LLR Organisations	Patient monitoring tools at home (e.g. meal consumption, medicines)	19/20	Remote care	External	Supporting Better Care Together Clinical Workstreams	TBC
LLR Organisations	Interoperability and data sharing with wider health partners like Optometrists, Dentists and Pharmacists	20/21	Records, assessments and plans	External	Sharing care records	TBC
Patients	95% of GP patients to be offered e-consultation and other digital services	20/21	Remote care	External	System wide efficiencies to improve integrated working	TBC
LLR Organisations	Population analysis done on a public sector scale to help proactive support and vulnerable people	20/21	Asset and resource optimisation	Combined	Population data analysis	TBC
LLR Organisations	API connectivity of all health and social care systems	20/21	Asset and resource optimisation	Combined	System wide efficiencies to improve integrated working	TBC
Patients	Patient self-monitoring using personal devices (info going directly to the GP)	20/21	Remote care	External	Supporting Better Care Together Clinical Workstreams	TBC
LLR Organisations	Patient self-care, management, pathway access	20/21	Remote care	External	Supporting Better Care Together Clinical Workstreams	TBC
Councils	Patient self service	20/21	Remote care	External	Supporting Better Care Together Clinical Workstreams	Councils
LLR Organisations	Unified communication between health, social care and cross boarder organisations	20/21	Asset and resource optimisation	Combined	System wide efficiencies to improve integrated working	TBC
UHL, Patients	Electronic mobile maternity app	20/21	Records, assessments and plans	External	Sharing care records	TBC
Patients	Every patient has access to digital health records that they can share with their families, carers and clinical teams	20/21	Records, assessments and plans	External	Sharing care records	TBC
LLR Organisations	Implementation of cognitive computing systems	20/21	Decision support	External	Supporting Better Care Together Clinical Workstreams	TBC
LLR Organisations	Free access to Wi-Fi for all patients	20/21	Asset and resource optimisation	Combined	Supporting Better Care Together Clinical Workstreams	TBC
LLR Organisations	Single Infrastructure Platform across LLR	20/21	Asset and resource optimisation	Combined	System wide efficiencies to improve integrated working	TBC
LLR Organisations	Paper-free at the point of use	20/21	Asset and resource optimisation	Combined	Supporting Better Care Together Clinical Workstreams	TBC





Glossary of Terms

ACE	Angiotensin Converting Enzyme
ADE	Adverse Drug Event
AF	Atrial Fibrillation
AGC Tool	Adjusted Clinical Groups Tool
API	Application Programming Interface
AQP	Any Qualified Provider
BCT	Better Care Together
CAMHS	Child and Adolescent Mental Health Services
CareTrak	PI's Social Care Analysis application
CCG	Clinical Commissioning Group
CCIO	Chief Clinical Information Officer/
CDA	Clinical Data Architecture
CDSS	Clinical Decision Support System
CDU	Clinical Decision Unit
CKD	Chronic Kidney Disease
COPD	Chronic Obstructive Pulmonary Disease
CPIS	Child Protection Information System
CPP	Child Protection Plan
CSU	Commissioning Support Unit
CTI	Computer Telephony Integration
DHU GP OOH	Derby Health United General Practice Out of Hours
DM	Diabetes Mellitus
DM&D	Dictionary of Medicine and Devices
DMI	Digital Maturity Index
DNA	Did Not Attend
DNACPR	Do Not Attempt Cardio Pulmonary Resuscitation
DoS	Directory of Services
DoS API	Directory of Services Application Programming Interface
DSCRO	Data Services for Commissioning Regional Office
ECGs	ElectroCardiograms
ED	Emergency Department
EHPC	Extended Hours Primary Care
HER	Electronic Health Records
EMAS	East Midlands Ambulance Service
EMIS	Egton Medical Information System
eObs	Platform ensures hospitals capture vital early signs of deterioration
EoL	End of Life
EpaCCs	Electric Palliative Care Coordination Systems
EPR	Electronic Patient Record
EPSr2	Electronic Prescription Service release 2



EWS	Early Warning System
FHIR	Fast Healthcare Interopability Resources
FYFV	Five Year Forward View
GEMIMA	Greater East Midlands Information Management and Analysis
GMS	General Medical Services
GP	General Practice
GPSoC	General Practice System of Choice
GS1	Help to automate and standardise supply chain.
HF	Heart Failure
HIS IT	Health Informatics Service Information Technology
HL7	Set of international standards for transfer of clinical and administrative data between software applications used by various healthcare providers
HRG	Healthcare Resource Groups
ICD	International Classification of Diseases
IDCR	Integrated Digital Care Record
IG	Information Governance
IGSG	Information Governance Strategic Group
IM&T	Information Management & Technology
ISA	Information Sharing Agreements
ISB	Information Standards Board
ISP	Information Sharing Protocol
IT	Information Technology
ITK	Interoperability Toolkit
KCOM	Provides a range of communication and integration services across UK
KPI	Key Performance Indicator
LCC	Leicestershire County Council
LDR	Local Digital Roadmap
LLR	Leicester, Leicestershire & Rutland
LOROS	Leicestershire Organisation for the Relief Of Suffering
LTC	Long Term Condition
MDTs	Multi Disciplinary Teams
MHRA	Medicines and Healthcare Products Regulatory Agency
MIG	Medical Interoperability Gateway
MSCP	MultiSpecialty Community Providers
NerveCentre	Hospital Mobile Clinical Platform
NHS	National Health Service
NIB	National Information Board
OOH	Out of Hours
PCs	Personal Computers
PI	Creators of CareTrak
PRISM	Pathway Referral Implementation System
PSN	Public Services Network
QIPP	Quality Innovation Productivity and Prevention
RFID	Radio Frequency Identification





RIS	Rutland Information Service
S1	SystemOne
SaaS	Software as a Service
SCR	Summary Care Record
SEPSI/AKI Tools	Sepsis and Acute Kidney Injury
SIMG	Leicestershire Strategic Information Management Board
SIRO	Senior Information Risk Owner
SMS	Short Message Service
SSAFA WIC	Soldiers, Sailors and Airmen's Families Association Walk in Centre
SSID	Service Set Identifier
STP	Sustainability Transformation Plan
SUS	Secondary Uses Service
TDA	Trust Development Authority
TPP	The Phoenix Partnership
TTO	To Take Out
U&EC	Urgent and Emergency Care
U+Es	Urea & Electrolytes
UCC	Urgent Care Centre
UECN	Urgent and Emergency Care Networks
UHL	University Hospitals of Leicester
VDI	Virtual Desktop Infrastructure
VPN	Virtual Private Network
VTE assessments	Venous Thromboembolism Assessments
WAN	Wide Area Network
WIC	Walk in Centre

