

Shropshire, Telford and Wrekin Health and Social Care

## LOCAL DIGITAL ROADMAP

Enabling Digital Transformation

2016-2021

Final: Ver 2.0



This document updates a number of pre-existing IT strategies across Shropshire, Telford and Wrekin and incorporates new national requirements. This document will be continually updated over the 5-year period. Please check you have the latest version.

# Shropshire and Telford & Wrekin Local Digital Roadmap

## VERSION CONTROL

Reference	Shropshire, Telford & Wrekin Health and Social Care Digital Roadmap
Version	Version 2.0
Status	Final Version
Title	Shropshire, Telford & Wrekin Health and Social Care Local Digital Roadmap
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Approval Date	28 June 2016
Approving Bodies	Shropshire Telford & Wrekin STP
Review Date	1 September 2016
Target audience	All Shropshire Health and Social Care providers including third sector Hospices Public domain
Circulation list	All Shropshire, Telford and Wrekin Health and Care providers, Third sector Hospices Public domain
Associated documents	Capability Deployment Schedule Capability Trajectory (secondary care)
Superseded documents	

### Endorsement of the Digital Roadmap

This local digital Roadmap was supported by the STP group on the 28<sup>th</sup> June 2015

## Executive Summary

### Local Digital Roadmap

The Local Digital Roadmap (LDR) sets out the journey that Shropshire and Telford & Wrekin will progress along over the next five years to underpin the requirements of the Sustainability and Transformation Plan (STP).

In producing the LDR attention has been given to the expectations outlined in the [NHS Five year forward view](#) and [Personalised Health and Care 2020](#).

The LDR takes a collaborative approach to delivery with all partners recognising that transformation cannot be achieved by working in isolation of one another and so informatics solutions have to be co-developed to meet the demands of patients and clinicians.

To be sustainable, we need to create improved capacity to deliver whilst improving the quality and safety of the care we deliver. It is widely accepted that this can only be achieved through adopting a capable infrastructure that connects clinicians as well as patients in a way that health and wellbeing becomes a joint responsibility.

This roadmap will present challenges to the local health economy, we are aware of these and with this awareness we can plan to overcome them. The commitment to deliver this roadmap is strong across all of the provider and commissioning organisations.

The table below shows the organisations who have come together to build this vision and plan.

Care Organisation Type	Organisations
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<b>Primary Care</b>	Shropshire CCG – 43 Practices Telford and Wrekin CCG – 18 Practices Covering a population of circa 480,000
<b>Out of Hours</b>	Shropdoc
<b>Secondary Care</b>	Shrewsbury and Telford Hospital Trust Robert Jones and Agnes Hunt Orthopaedic Hospital NHS FT
<b>Community Care</b>	Shropshire Community Health NHS Trust
<b>Mental Health</b>	South Staffordshire and Shropshire Healthcare NHS FT
<b>Local Authorities</b>	Shropshire Council Telford and Wrekin Council
<b>Third Sector</b>	Shropshire Partners in Care (SPIC) Severn Hospice Hope House Children’s Hospice
<b>Emergency Care</b>	West Midlands Ambulance Service

This roadmap has been developed not just to underpin our local Sustainability and Transformation plan but also to underpin the four areas which Simon Stevens sets out that the NHS& Social Care need to address:

1. Improve local partnerships with integration across systems.
2. Patients in control of their health.
3. Use technology to improve patient health, experience and access.
4. Seek radical enhancements to public health to change our system from reactive to proactive prevention.

### Local Digital Roadmap

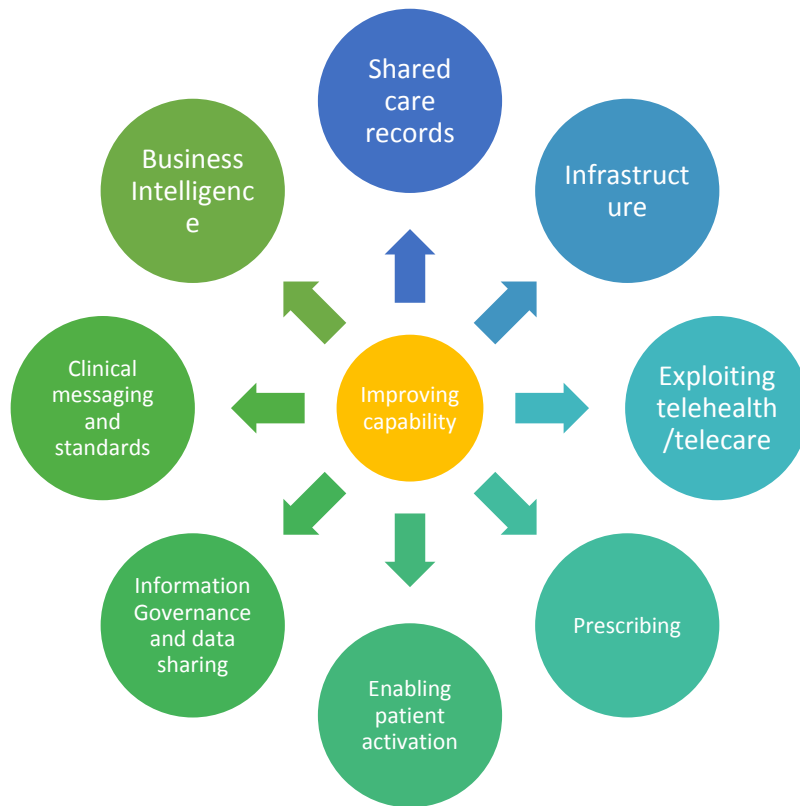
Within our local health economy, we are facing the same challenges that the rest of the NHS is acutely aware of; an aging population, limited funds, demanding citizens with greater expectations than ever before and a potential deficit of £120 Million by 2020/21 if we fail to act and transform the way we work.

The LDR sets out our Vision for Informatics and what we aim to have in place by 2020 and beyond. It recognises the pace of transformation and the opportunities that lie ahead whilst at the same time focussing on how we might use technology to:

1. Close the health and wellbeing gap.
2. Close the care and quality gap.
3. Close the finance and efficiency gap.

In producing this LDR, we have taken stock of where we are as a health economy, our level of digital maturity, the things we have done well, the achievements we have made but importantly, what we must do next.

We have identified within this document a number of areas where improvements need to be made. The headline areas are shown on the diagram below:



Key milestones have been set out within this LDR and further engagement with the Sustainability and Transformation team is underway to ensure correct alignment of delivery.

In developing this LDR, we have considered our ‘Readiness to Proceed’ setting out our delivery principals and governance model and how delivery is controlled. We have within the Health Economy a capability to deliver with strong skills available to us. We have recognised that we can only deliver this challenging LDR by pooling skills and capabilities at times of need.

Delivering benefits and capability to the Sustainability and Transformation programme is our prime objective as it is this programme that will bring about the required transformation to secure sustainability in the future. We will ensure that we engage fully in the

development of the programme benefits management strategy and the mapping of benefits.

This LDR cannot be achieved without a significant investment in IT.

Presently the level of funding afforded to IT is relatively low, and so it is recognised that further investment is required. This can only be achieved by:

1. Uplifting current IT investment and demonstrating through the development of robust business cases that investment is justified.
2. Utilising STP monies to underpin robust governance
3. Attracting external funding to support project delivery
  - a. Innovation funding opportunities
  - b. Unlocking funding from the additional £1.8 Billion that is aligned to support improvements to digital health.

This LDR is Version 2 and we are expecting that it will mature as our transformation programme gather pace.

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### 1.0 Creating the Local Digital Roadmap - A Collaborative Approach

Shropshire, Telford & Wrekin LDR team have worked collaboratively with Local Digital Roadmap (LDR) teams from across the Midlands area to ensure consistency in approach across a number of major programmes. We recognise that delivering the digital capabilities necessary to bring about sustainability and transformation can only be achieved if we work together, share capabilities and resources and align our delivery programmes accordingly. In particular, there has been close working with Birmingham & Nottingham LDR leads. This approach has resulted in the creation and adoption of the greater midlands LDR accord with each party committing to work collaboratively on a number of fronts. These include but are not limited to:

- Consent models
- Data Sharing agreements and governance processes
- Adoption of standards, such as interoperability, identification and messaging to ensure consistency across the regions and benefits to patients who cross borders to receive care.
- Joint procurements, including a single messaging hub for the region
- Intelligence platforms and big data – a single shared approach which will drive benefits and reduce costs for all parties.

#### 1.1 Organisation involved in the development of this LDR

The table below summarises the organisations that have contributed to, and are committed to this Local Digital Roadmap.

Care Organisation Type	Organisations
Primary Care	Shropshire CCG – 43 Practices Telford and Wrekin CCG – 18 Practices Covering a population of circa 480,000
Out of Hours	Shropdoc
Secondary Care	Shrewsbury and Telford Hospital NHS Trust Rob Jones and Agnes Hunt Orthopaedic Hospital NHS FT
Community Care	Shropshire Community Health NHS Trust
Mental Health	South Staffordshire and Shropshire Healthcare NHS FT
Local Authorities	Shropshire Council Telford and Wrekin Council
Third Sector	Shropshire Partners in Care (SPIC) Severn Hospice Hope House Children’s Hospice
Emergency Care	West Midlands Ambulance Service

### 1.2 How the LDR has been produced

The Shropshire, Telford and Wrekin Digital Strategy Group has been in place for 2 years and has met on several occasions to discuss the requirements and begin capturing information necessary for the LDR. Additionally, each of the providers completed their digital maturity assessments which were submitted to NHSE by 17/05/2016.

A workshop was held on 9<sup>th</sup> June in Shrewsbury which included representatives from local authorities, Out of hours’ service, all local NHS providers, West Midland Ambulance Service (WMAS), third sector hospices and patient representatives. Attendees were made up of Clinicians, Technologists, Managers and patients. The workshop covered the STP objectives and linked to LDR as needing a digital golden

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thread between the two work streams. The workshop led to a prioritisation exercise over the universal capabilities and additional work

streams such as tele health. The outputs from the workshop have been compiled into Appendix 4.

Each organisation within the LDR footprint has been given access to office 365 to review and edit the LDR over time.

The authors of the LDR and STP have been in regular contact to ensure that the themes of the STP are mapped closely to the digital themes in the LDR. The draft LDR was presented to the STP group on 21<sup>st</sup> June 2016 for comments and signed off on the 28<sup>th</sup> June by the same group. The LDR is now to be presented to the Health and Wellbeing Boards for both Shropshire and Telford and Wrekin.

## 2.0 Introduction

The NHS is facing one of its greatest ever challenges during this period of austerity measures. A £30 Billion funding gap by 2020, of which the Shropshire specific element amounts to £120M across health and social care if left unchecked.

Simon Stevens sets out four areas in which the NHS & Social Care needs to address;

1. Improve local partnerships with integration across systems.
2. Patients in control of their health.
3. Use technology to improve patient health, experience and access.
4. Seek radical enhancements to public health to change our system from reactive to proactive prevention

The five year forward view and Personalised Health and Care 2020 sets out a framework by which technology can be used to address the above to drive transformation, improve health and reduce healthcare costs.

The introduction of local digital roadmaps to demonstrate that local plans are in place to implement and address the above became a requirement in October 2015.

NHSE then released Five Year forward view into action which set out the timescales and further detail that CCGs needed to include in the LDR. It is important to note that whilst CCGs are taking the lead, LDRs must be a collaborative document with all parties contributing and agreeing to its content.

### 3.0 Strategic Alignment

The digital roadmap utilises the following localised intelligence to form the base requirements needed within the local health and social care economy:

- New Models of Care
- Sustainability and Transformation Planning
- Commissioner and Provider Strategic and Operational Plans

The main national policies and strategic drivers for the local digital plan are:

- NHS England Five Year: Forward View
- NHS England Business Plan 2015/16 - Building the NHS from the Five Year Forward View
- Power of Information: Putting all of us in control of the health and care information we need
- Securing Excellence in GP IT Service Operating Model 2014-2016
- The Forward View into Action: Paper-free at the Point of Care - Preparing to Develop Local Digital Roadmaps
- Development of the National Information Board (NIB)
- Interoperability handbook

The digital roadmap partners have recently reviewed and are currently updating their IM&T strategies to align with the national strategy, “The Five Year Forward View” the “5 Year Forward View into Action”

The digital roadmap is designed to deliver the capabilities that will enable delivery of local health and social care economies strategic plans and will support the creation and enactment of the Sustainability & Transformation Plans (STP). The STP will ensure the delivery of both health and care systems across the estate, providing the drive and strategic requirement to support the use of new technologies to improve the delivery

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of care for example enabling new care models and supporting seven day services where required.

This is necessary as our population is increasing. The population is also getting older, with changes to the retired population increasing significantly whilst working age groups are reducing.

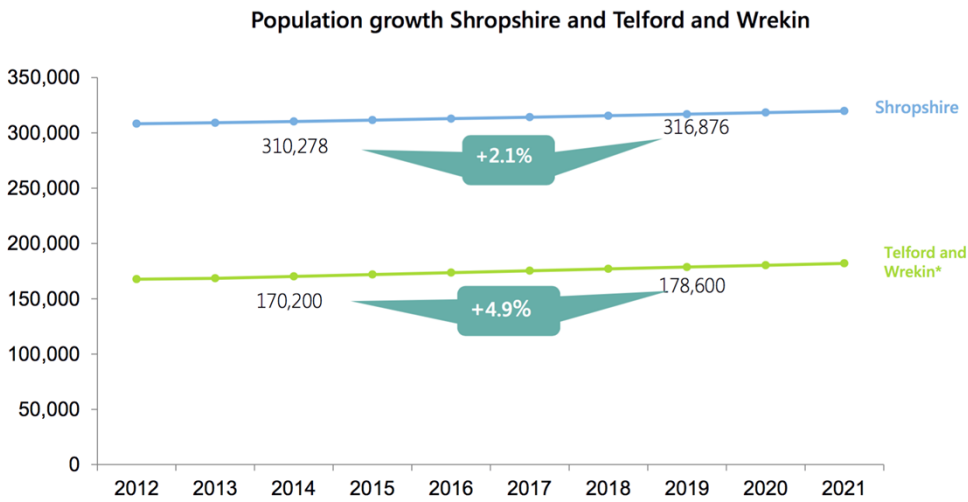
Whilst an aging population can be seen as a significant achievement for healthcare services, these achievements come with challenges for the future. We need to ensure we provide high quality health and social care, so that we not only live longer lives, but live longer healthier, active and independent lives.

For a significant number of older people, advancing age is associated with frailty. In medicine this is often defined as a reduction in physical capacity: a group of older people who are at the highest risk of adverse outcomes such as falls, disability, admission to hospital, or the need for long-term care.

Faced with an ever-increasing ageing population, we need to rethink old age, and move from a reactive approach to managing frailty, to a proactive approach. Changes to our healthcare provision, alongside advances in medicine and technology provide us the best opportunity to meet this challenge.

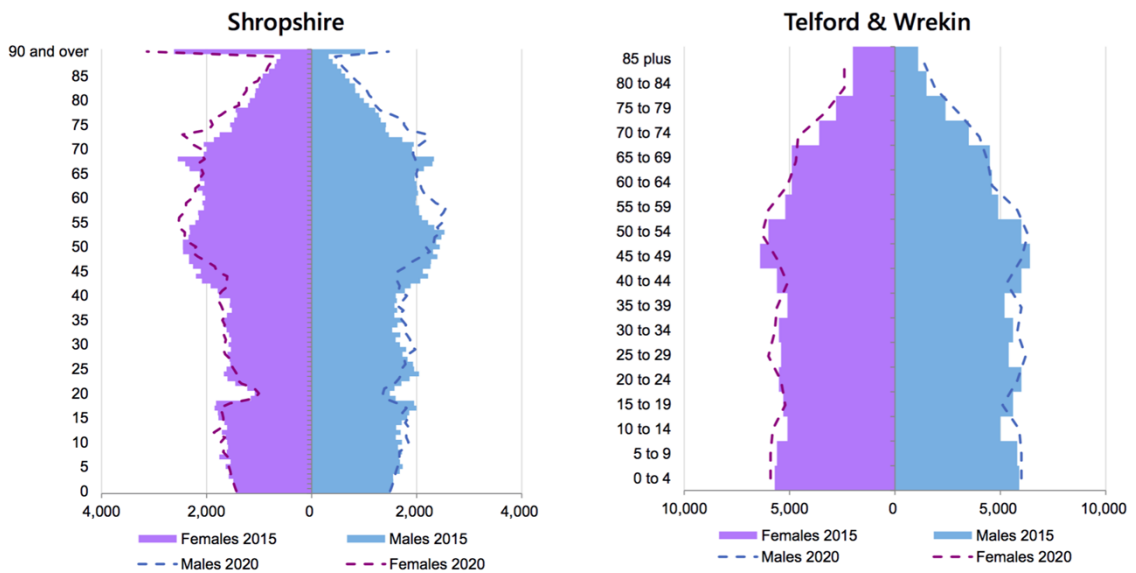
The charts which follow provide a graphical summary of the populations' growth and age profile.

## Population size



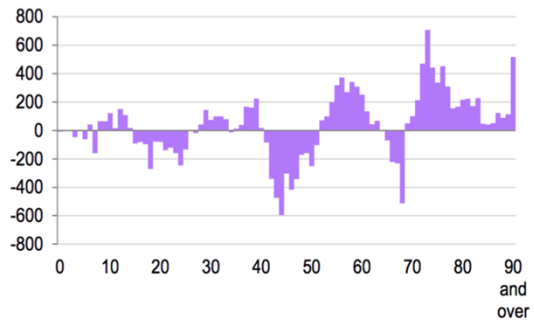
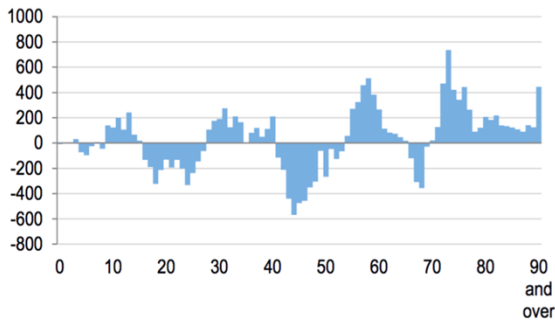
\* Telford & Wrekin population projections have been adjusted locally to account for major residential build plans. Shropshire projections are taken directly from ONS published figures

## Change in population age/gender profile: 2014 to 2019

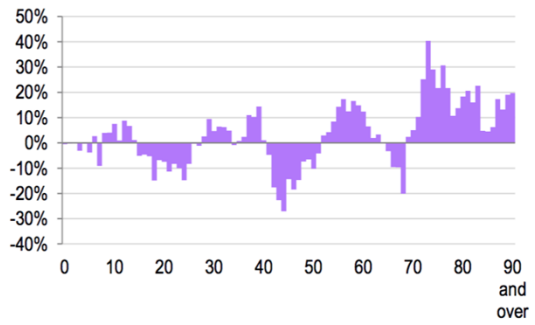
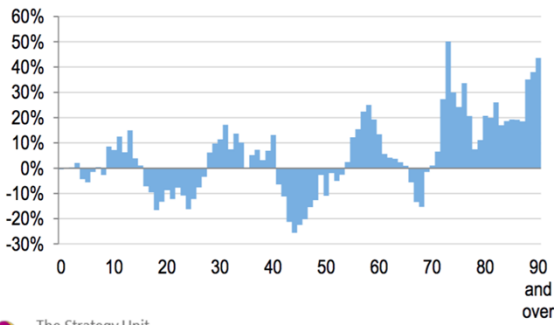




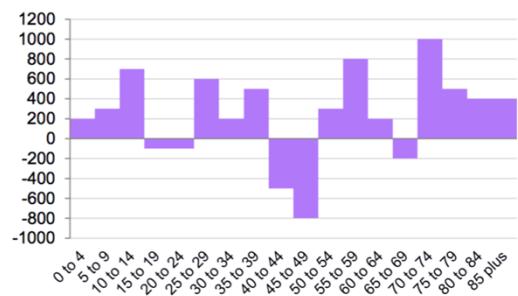
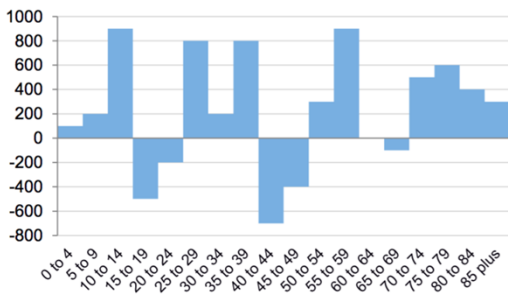
Change in Shropshire's population 2014-2019



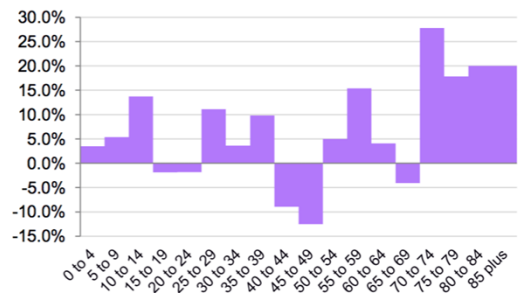
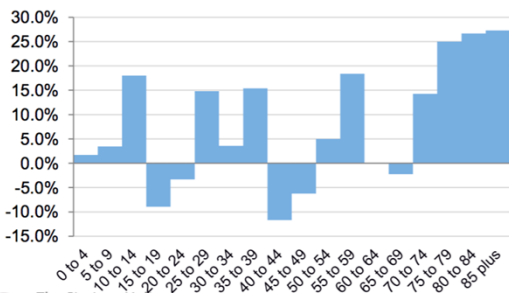
% change in Shropshire's population 2014-2019



Change in Telford & Wrekin's population 2014-2019



% change in Telford & Wrekin's population 2014-2019



Our local digital roadmap is designed to provide a mature set of technologies that will enable future sustainability and address the challenges of this trend by doing things differently.

The STP acknowledges that in order to address the financial challenges it faces there needs to be a shift from reactive care to prevention and early detection. Delivering a digitally connected economy will provide us with the intelligence to deliver this transformation.

The STP sets out 6 key objectives all dependant on technologies currently in place or delivered from this digital roadmap. These objectives include:

- To build resilience and social capital into people's environment so they have the knowledge and skills to help themselves to live healthier and happier lives enabled by current and emerging digital technologies.
- To develop a model of coordinated and integrated care across the NHS, Social Care and the Voluntary Sector that reduces duplication and places the patient and service user at the centre. We intend to achieve this by connecting Health and Care systems ensuring that data flow freely to those who need to see it.
- To work as one Health and Care system to deliver for patients and citizens and develop a single shared view of the place-based needs of the population using advanced business intelligence capabilities.
- To develop a sustainable workforce that is fit for purpose, is supported by modern technology, and can deliver evidence-based care in new ways that suit user's lifestyles, where they live.
- To develop a transformed system of care that is high quality, financially sustainable, and efficient and delivers on national standards all the time.

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- To use evidence from around the world to develop excellence in care and pioneering services through the use of high quality research and use of new technologies.

The STP is ambitious, necessarily so to ensure the suggested deficit of £120 Million by 2020/21, identified by Price Waterhouse Coopers does not occur.

The STP describes a range of themes which have been mapped against LDR Output.

The tables below map for each year LDR programmes against STP themes.

The STP will only be delivered if we correctly align the technology delivery plans with those of the STP. It is with this in mind that a clear line of accountability has been established between the Local Digital Strategy Group and the Sustainability and Transformation Group.

## 4.0 Our Vision

### **By 2020 we aim to have:**

- An integrated care record across our economy (starting with end of life by March 2018)
- Patients as co-authors of their record. Contributing and interacting with their record, approving access, booking appointments, repeat prescriptions etc.
- Data Sharing agreements in place to enable our vision of a paperless NHS at the point of care. We expect agreements to be in place by Mar 2017.
- Universal capabilities significantly delivered by March 2018
- Tele Health at scale 2016-2020.
- Collaboration locally and regionally – standards, infrastructure, procurements, large projects like big data population health analytics.

However, our vision extends beyond 2020 due to the pace of innovation around the world.

### **Our Vision for 2030 extends to:**

- Patients, Carers and Clinicians have the information they need at the time they need it to make decisions about health. This information will be a consolidated view from across all care settings including information provided by the patient and via telemetry from tele health monitors and will include alerts, smart algorithms and machine learning.
- Precision medicine increasingly being used to support decision making, including greater use of genome sequencing for screening and medication. New pharma technology used to ensure compliance with care plans, such as

pills that detect if they have been taken.

- Tele health at scale, harnessing the exponential growth in mobile technology that the population has embraced to change behavior to a healthier lifestyle or to better manage a long term condition with 70% of patients with life style issues (weight, alcohol, smoking etc.) or with long term conditions using a form of app or tele health solution to better manage their condition.

Our world has been radically transformed by digital technology such as smart phones, tablets, and web-enabled devices have transformed our daily lives and the way we communicate. Advances in clinical systems have leveraged the digital revolution to bring about levels of integration that have never been possible before, which in turn enables:

- Improved patient care.
- Care coordination across care settings, including alerting, decision support algorithms and workflow.
- Patient participation in their own care including tele health.
- Improved diagnostics and patient outcomes.
- Care in the community, including remote consultations and diagnostics.
- Cost efficiency and savings.

The local digital roadmap aims to create a digitally enabled health and social care economy across the Shropshire, Telford and Wrekin geography. We believe that by harnessing the power of technology and innovation we can address the three national challenges of:

1. Closing the health and wellbeing gap.
2. Closing the care and quality gap.
3. Closing the finance and efficiency gap.

#### 4.1 To close to health and wellbeing gap we will commit to:

- Using advanced data analytics to manage current demand and to identify future demand at patient level where early intervention can result in better health and wellbeing.
- Using this data to work with our public health colleagues to design and target public health programmes within our health economy.
- Empower our patients to be partners in managing their own health and wellbeing by providing access to a range of tailored digital tools from access to their own medical record to using a range of accredited apps specific to their need and required level of support.
- Implement tele health at scale in order to drive health benefits and reduce costs.

#### 4.2 To close the care and quality gap we will commit to:

- Ensuring that at the point of care, the patients' Health and Care record is available to those that need it. The first major step being in the adoption of an EPACCS system across the LDR footprint by March 2018.
- Ensuring that an individual's information is recorded once and shared where needed.
- Clinicians are alerted promptly to key patient's events and changes in their status, supported by knowledge management and decision support tools.
- Ensuring that medicines management and optimisation systems across the economy are compliant with the DM&D, with the EU falsified medicines directive and with GS1 and PEPPOL standards.
- Ensuring that all referrals, bookings, diagnostic tests, results reporting and discharge notifications are completed electronically.

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- Ensuring that our approach to Information Governance is one that allows patients control over who can access their record, and is not seen as restrictive in delivering better care.
- Building the capability to ensure that technology is not just delivered but truly embedded into clinical and business process. We will ensure that this happens by taking a rigorous approach to benefits identification and delivery and measurement.
- Ensuring that we deliver the capability for our community workforce to be truly mobile and only see those patients that need to be seen.

### 4.3 To close the finance and efficiency gap we will commit to:

- Ensuring that our ambitions are realistic, achievable and funding sources identified.
- Ensuring that we maximise the benefits of procurement through scale and standardisation.
- Ensuring that the recommendations of the Carter review be incorporated into new systems and process improvement schemes to include EPMA, coding of medicines, guaranteeing 80% of pharmacist resource be directed at medicines optimisation and significant stock-holding reduction.
- Capitalising on investment already made.
- Ensuring that we adopt a 'Digital by Default' policy utilising cloud-based solutions to reduce unnecessary operating costs.
- Taking a rigorous approach to benefits delivery in particular around managing demand and creating capacity.

This digital Roadmap underpins the 'Sustainability and Transformation Plan which sets out a vision for its patients to be amongst the healthiest on the planet.

## 5.0 Baseline Position – Our Starting Point on this journey

Shropshire, Telford and Wrekin health and social care community spends £1 billion annually to provide services to the citizens. The expenditure across all organisations on IT is less than 2%. Described below is the current digital maturity position across sectors, and it is clear that we still have some way to go in order to meet the requirements of the five year forward view.

### Patients and Service Users;

- Have no or little access to their electronic record
- Very few access on-line booking
- Very few use technology as part of their health or social care needs

### Our Workforce

- Has limited connectivity to core systems outside of main facilities, instead using paper to complete tasks and provide care.
- Still use a mix of electronic and paper (with the exception of primary care and mental health)
- Have limited if any information at the point of care when treating patients from other organisations.

### Infrastructure

- Systems are joined within each organisation using EPRs but this is not joined to other sectors to create an integrated care record.
- Infrastructure is not shared, so workers from one organisation cannot work in another



- There is duplicated infrastructure in place such as messaging hubs which could be combined to drive efficiency and make management easier.
- Joint procurements are rarely undertaken with organisations being at different places in their digital journey.
- Mobile infrastructure and the use of Unified Comms in some areas is good but this is not consistent.

### 5.1 Digital Maturity within Primary Care

All Shropshire practices use the EMIS web clinical system apart from one which uses INPS Vision. All practices use *Docman* for electronic document management. Digital maturity is generally good within primary care, and the need to share primary care patient records with secondary care is recognised as a key priority. All Shropshire EMIS practices have signed a data sharing agreement to share their summary patient data with A&E and the urgent care centre. The e-referrals system is extensively used via a referrals management centre (RAS). Patients are encouraged to access their own medical record online, book appointment online and order repeat prescriptions online. Uptake is improving, although coming from a low base.

See appendix 1 for a full picture of digital maturity within Primary Care.

### 5.2 Digital Maturity across Providers

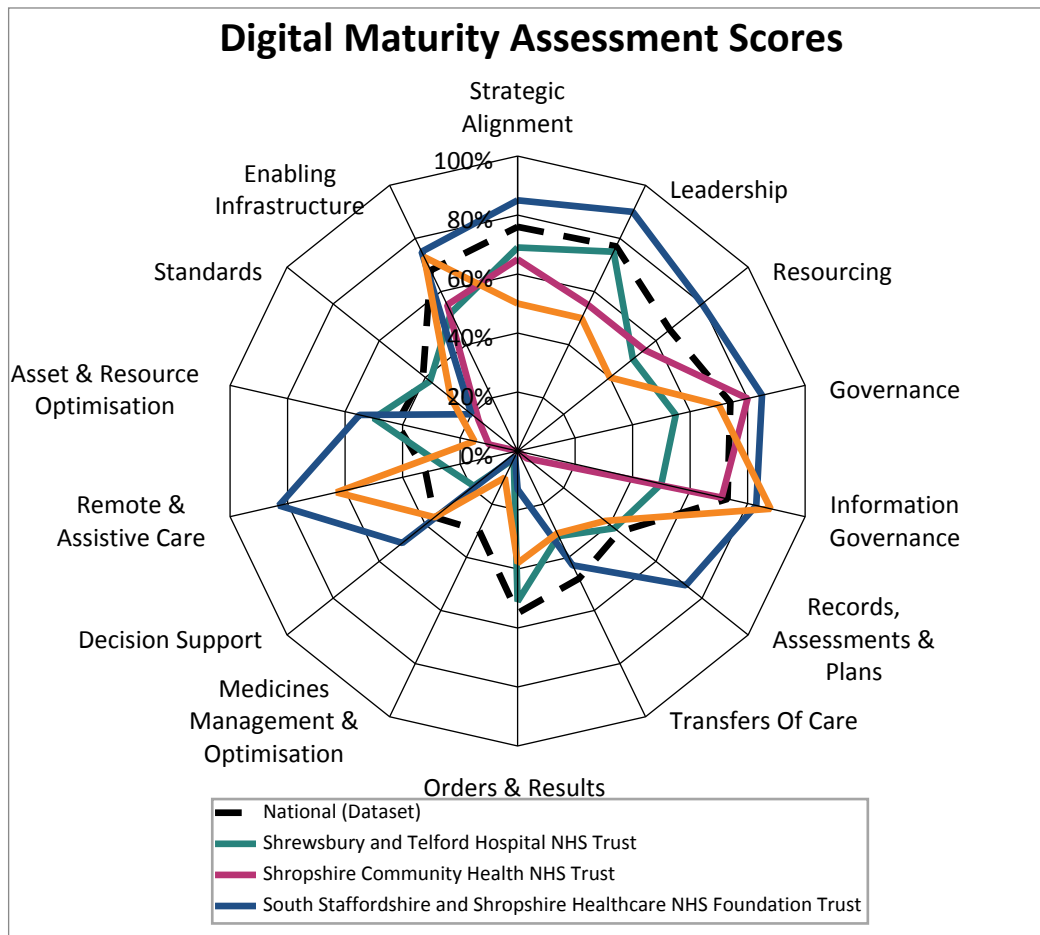
A summary of the digital maturity indices submitted in comparison with the national average is given in the table below.

Digital Maturity Assessment	Economy Average Scores from DMA
Organisation Demographics	

<b>Strategic Alignment</b>	69.8% 6.2% below national
<b>Leadership</b>	67% 10% below national
<b>Resourcing</b>	61% 5% below national
<b>Governance</b>	72% 2% below national
<b>Information Governance</b>	73.6% 0.4% below national
<b>Records, Assessments &amp; Plans</b>	37.4% 6.6% below national
<b>Transfers of Care</b>	31.2% 16.8% below national
<b>Orders &amp; Results Management</b>	25% 29.5% below national
<b>Medicines Management &amp; Optimisation</b>	4.8% 25.2% below national
<b>Decision Support</b>	28.8% 7.2% below national
<b>Remote &amp; Assistive Care</b>	34.2% 2.2% above national
<b>Asset &amp; Resource Optimisation</b>	39.8% 2.2% below national
<b>Standards</b>	25% 16% below national
<b>Enabling Infrastructure</b>	67.8% 0.2% below national

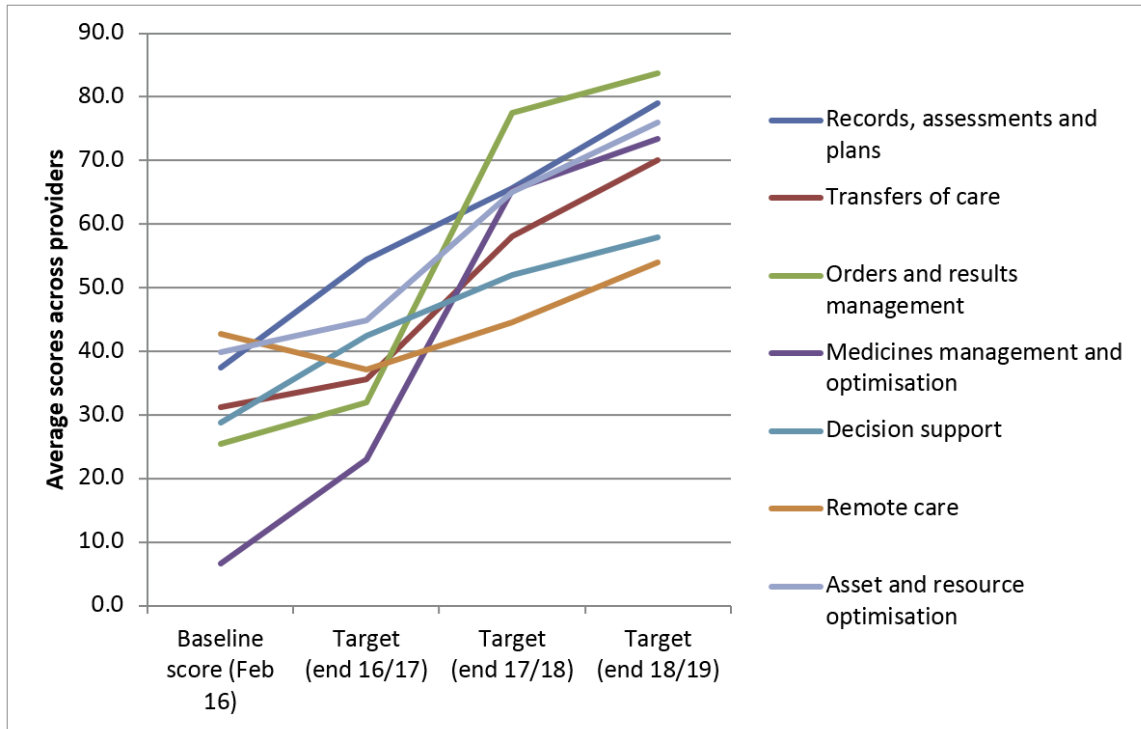
### Local Digital Roadmap

The chart below shows the position for each of the provider organisations. The Shropshire health economy has a generally lower level of maturity than the national average (although there is wide variation between organisations) with the exception of 'remote and assistive care' where it appears that we are doing significantly better than the average. The most significant underperformance against the national average was 'orders and results management'.



### 5.3 LDR Maturity Planned Trajectory

The below chart indicates the increases in maturity that the providers LDR economy is predicting based upon the work planned to deliver the LDR'.



## 5.4 Digital Maturity Position

### 5.4.1 Digital Maturity -What is happening already, our achievements to date.

#### 5.4.1.1 Information sharing

- General Practice receives NHS 111 reports electronically using DTS.
- To support 7-day working, federated practices are now sharing patient records.
- The health economies Out of Hours provider, 'Shropdoc', has access to patient records within their Aداstra system via Graphnet and a feed from the Summary Care Record.
- Within Shrewsbury and Telford Hospital Trust a clinical portal already exists providing real time access to test results, letters, medication, GP patient data and alerts. This is already delivery benefits to hospital clinicians and patients.

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- Observations are captured and communicated electronically. There are no 'end of bed' paper charts. Early warning scores alert medical teams to the deteriorating patient.
- A live demand and capacity system is available across shropshire which informs of the current state of urgent care within SATH. The system is used by operational staff within the trust, directors, CCG senior staff and directors, social workers, care coordinators, GPs and practice managers. This is making use of real time analytics.

*5.4.1.2 Transfer of care*

- Within the Emergency Department of Shrewsbury and Telford Hospital Trust an electronic status board has been established where they can see at a glance where patients are, tests that have been undertaken to aid patient flow. This information is available on mobile devices accessible anywhere.
- 90% of inpatient and A&E discharge correspondence from within the Shrewsbury and Telford Hospital Trust is sent electronically to GPs.
- Within Shrewsbury and Telford Hospital Trust, wall size ward electronic touch screens providing patient status at a glance and providing the focus for twice-daily clinician board rounds to aid timely transfer of care.
- The West Midlands Ambulance Service has implemented a new system from 'Safer Patient Systems' which enables:
  - the digital hand over of documents to A&E departments.
  - Messaging via docman hub to GP to inform of the conveyance
- At RJAH within Graphnet we have the capability to perform an e-handover of patients and all discharges to the Shropshire based GP's in addition to sending Radiology reports as well via DocMan.

### *5.4.1.3 Prescribing*

- Ward based pharmacy teams in Shrewsbury and Telford Hospital Trust make use of mobile drugs transcribing systems to reconcile and order drugs and to manage interventions and contraindications. This is a pre-cursor to e-prescribing.
- The Shrewsbury and Telford Hospital Trust is currently introducing a chemo prescribing system.
- RJAH have now procured JAC EPMA and stock Management which is now live.
- EPS – all but two non-dispensing GP practices are currently using electronic prescribing. Usage of the system is above the regional and national averages

### *5.4.1.4 Electronic Order of Tests and Results Reporting*

- Clinicians within the Shrewsbury and Telford Hospital Trust order entry and results communication, this will soon to include radiology exams.
- General practice clinicians order and review all blood and microbiology tests and most radiology examinations electronically
- A refresh of the Shrewsbury and Telford Hospital Trusts Picture Archiving and Communication (PACS) facility laying the basis for further image communications and vendor neutral archiving. The trust is currently bringing its echo cardiogram image and reporting capability into line with this.
- The Shrewsbury and Telford Hospital Trust is setting the scene for Point of Care Testing systems to be introduced in a joined-up, safe and integrated way across the economy.

### *5.4.1.5 Patient Activation and Self-Management*

- Patients using Shrewsbury and Telford Hospital for their cancer management are being introduced to cloud-based shared care APPS which allow the patient to manage and control data they share with their care team. With this information they tell us they will more confidently manage their lives and

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improve the efficiency with which they use traditional hospital models of care-which will then no longer be traditional

- Both CCGs have commissioned tele health systems in the past but the solution used had very limited results and was decommissioned. A new approach is being adopted of tele health at scale and this roadmap will enable its deployment and greater impact in order to deliver the aims of the STP.

*5.4.1.6 Electronic Patient Records*

- The South Staffordshire and Shropshire Healthcare NHS FT is 100% paper free having scanned all of its paper records and current patient records are now being entered digitally onto RIO.
- All general practice, including our out-of-hours provider(Shropdoc) have fully digitised records and are 100% paper-free.
- Across Rob Jones and Agnes Hunt Orthopaedic Hospitals Trust a number of developments have taken place:
  - They have implemented VitalPAC to ensure observations are captured electronically and these feed into the Graphnet EPR.
  - Through IdeaGen scan the legacy case note are incorporated into their electronic record. This is viewable through Graphnet EPR.
  - They have procured JAC EPMA and Stock Management. The Stock management is now live and the Trust are expecting to go live with EPMA over the next 12 months.
  - They have also started digitising their pre-operative pathway through the Genera Pre-Op system

*5.4.1.7 Infrastructure*

- The South Staffordshire and Shropshire Healthcare NHS FT has invested in Wi-Fi at all of its premises in Staffordshire to enable mobile working. The Wi-

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Fi capability is shared with other organisations offering true mobility for all.

There are plans to replicate this in Shropshire.

- The South Staffordshire and Shropshire Healthcare NHS FT has implemented an integration engine to enable mobile device integration with the RIO diary capabilities.
- The South Staffordshire and Shropshire Healthcare NHS FT makes use of Skype for consultations with local care and nursing homes.
- To support mobile working, the South Staffordshire and Shropshire Healthcare NHS FT has issued mobile technology to its clinical workforce with both VPN and tethering to mobiles configured.
- Shropdoc have been investing heavily to promote mobile working for its staff and are considered the pioneers in this area locally
- Primary care has 100% cloud based clinical systems enabling clinicians to work from different locations if necessary.
- The Robert Jones and Agnus Hunt hospitals trust have been investing in Wi-Fi over several years and have a secure hospital WiFi to allow for mobile access to records. This has been segmented to also allow free WiFi access across the Trust for patients.



#### 6.0 Digital Maturity – Areas where we know we need to deliver improved capability

The local digital roadmap team have identified through discussion, areas that we have all agreed need addressing within the scope of this roadmap.

##### 6.1 Shared Care Record

Delivering a ‘Shared Care Record’ across Shropshire and Telford & Wrekin will require a co-ordinated effort to bring together local EPR developments with the requirement to integrate systems across organisation boundaries, necessary to improve care coordination, transfer of care, readmission rates and improve outcomes.

Organisational clinical systems are relatively stable across the economy. The Shrewsbury and Telford Hospital will have to make a number of tactical extensions to system contracts (including the PAS, Pharmacy, PACS and Pathology) but will be considering these in parallel with the wider requirement to procure an ePrescribing solution, a (compliant) pharmacy stock control system and an EPR. The Shropshire Community Health Trust will also be replacing its current PAS with RIO, whilst Robert Jones and Agnes Hunt Orthopaedic Hospital NHS FT have also recognised the need for an integrated EPR and to replace older legacy systems.

We have also seen from the work of Shrewsbury and Telford Hospital NHS Trust that technology alone will not deliver the required benefit, a concerted effort is needed at service level to bring about the enabling transformation and ensure that the whole organisation adopts the technology to reduce variation in process and waste.

The table below, maps the key systems in use with each partner organisation

Organisation	Primary Care	SATH	RJAH	Shropdoc	SSSFT	SCHT	WMAS

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<b>Existing Systems supporting integration</b>	EMIS Web	Atos Sema Helix PAS*	CSC IPM PAS *	Adastra	RIO	iPM (replacing with RIO)	CLERIC
	INPS	HP Pharmacy	Graphnet EPR*	EMIS Web		Sema Helix	
	PCTi docman edoctransfer	Varian Chemo prescribing and radiotherapy	PCTi docman edoctransfe			TPP system one (prisons)	
		SystemC VitalPAC observations	Bluespier				
		CSC Pathology	Genera Pre-Op				
		Agfa PACS	Fuji PACS				
		Phillips Echo	VitalPAC				
		CRIS radiology	JAC				
		SystemC Maternity	Pharmacy Stock/ EPMA				
		EScript (internal) medicines management	IdeaGEN (Legacy Scanned Note)				
		SeW (internal) clinic letters					
		PCTi docman edoctransfer					
		Medisoft ophthalmology					
	Etc etc						
<b>Integration Platform</b>	Graphnet CareCentric	Orion Rhapsody	Orion Rhapsody		Ensemble		

\*Currently reviewing medium to long term future of the systems as Trust require a SPINE enabled integrated EPR.

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The LDR organisations have recognised the need for a shared or integrated care record and put forward a bid to the ‘technology fund 2’ in order to pump prime the project almost 2 years ago. The bid had backing from all health and social care organisations but unfortunately was not supported nationally. The requirement still remains and we are confident that this project will attract the necessary investment to bring about this important capability.

Our ambition is to build a shared care record that extends beyond a simple ‘lookup’. We aim to provide interoperability at the highest level, providing the ability of systems to exchange information and to use the information that has been exchanged. Using semantic interoperability, we can take advantage of the structured data exchange. This level of interoperability supports the electronic exchange of patient summary information among caregivers and other authorized parties via potentially disparate electronic health record (EHR) systems and other systems to improve quality, safety, efficiency, and efficacy of healthcare delivery.

The design standards and design principles of the record will allow integration with neighbouring economies.

It is intended that we will have an Open Standards Application Program Interface (API) creating a level of integration of future digital platforms within the whole economy. The combination of RBAC, Governance and API, will ensure that only appropriate and agreed data is made available from the economy to any applicant system.

### 6.2 Infrastructure Improvements

Although we have pockets of good and encouraging practice such as in South Staffordshire and Shropshire Healthcare NHS FT we need to make improvements.

- Connection of network infrastructure to:

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- enable access to patient records at any location
- Offer unified communications across all staff inc video to deliver greater efficiency capabilities.
- Enable the delivery of a shared care record.
- Enable remote access to telehealth monitoring capabilities.
- Enable tele-medicine capabilities to be exploited.
- Extension of network infrastructure to create a Health and Social Care Network to ensure improved co-ordination and transfer of care.
- Ensure that all staff have access to the right device for the job that they are doing. Whilst South Staffordshire and Shropshire Healthcare NHS FT have already deployed mobile technology to its staff, Shropshire Community Health Trust have committed to a widespread deployment over the next 5 years.

### 6.3 Exploiting the capabilities of telehealth and telecare

We are all agreed about the importance tele-health and care will play in co-ordinating and delivering care in the future. This technology is recognised by the sustainability and transformation group as fundamental to future care models where the patient is activated to become an equal partner in managing their own health, condition and well-being.

All organisations are keen to invest, but in order to ensure we do not waste effort and resources we intend to work collaboratively on procurement and operationalisation.

RJAH are presently looking at options utilising tracking of patients, staff and resources to automate and alert to issues within workflow in order that actions can be carried out prior to an issue occurring. This adoption is relatively new in the UK but has been utilised to good effect in the US. We will share learning from this.

## 6.4 Prescribing

Adoption of the Dictionary of Medicines and Devices (dm+d) is a requirement for compliance across NHS systems as per ISB 0052 is 30 June 2017. Currently the principal GP clinical systems hold compliance to this standard. Economy wide adoption of dm+d will be required for an effective economy wide care record, that supports cross organisation clinical system support.

There is a further prescribing requirement to adopt the EU Falsified Medicines Directive (FMD) with a deadline for implementation of February 2019. A focus on clinical safety, based on the risk posed by the growing volume of counterfeit medications on the market within the EU. This will require integration and use of bar codes for all pharmacies.

In addition to this:

- Shrewsbury and Telford Hospitals NHS Trust will be procuring ePrescribing and pharmacy stock control solutions and have stated they will be considering the linkages with the community prescribing functions within the RIO system. Additionally, they are looking at introducing a chemo prescribing system.
- RJAH will be implementing their EPMA system within the next year.

## 6.5 Patient Activation

### 6.5.1 Patient record access

The position of the patient will be amended allowing access to shared record as both consuming and contributing party. The IOM (Institute of Medicine) defines patient-centred care as: "Providing care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all

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clinical decisions". Inclusion of the patient identification strand of work at this point, will allow the successful inclusion of the patient as a decision maker within their own healthcare.

**6.5.2 Communication channels to individuals**

Formation of an economy-wide patient forum focussing on the digital communication requirements of individuals across the sectors. Significant work has already been undertaken in this space by several of the partners within the footprint. Consideration needs to be given to expanding these channels to include web, mobile and speech-to-text platforms, to promote digital inclusivity. Convergent methods of information presentation to patients needs consideration to effectively change the role of the individual, to allow their effective inclusion within care arrangements.

**6.6 Information Governance****6.6.1 Economy wide data sharing arrangements**

Significant work has been conducted within the economy on a data sharing agreement at an economy scale. While a hugely valuable exercise, consideration needs to be given to its scalability. Further effort will be placed into the ongoing maintenance and transparency that the agreement could provide in line with the [Data Sharing Code of Practice](#). To promote the sharing of individual and organisation data at an economy level, requires a transparency that engenders.

- public trust by ensuring that legally required safeguards are in place and complied with.
- protection for individuals when their data is shared.
- increased data sharing when this is necessary and beneficial.
- greater trust and a better relationship with the people whose information you want to share.
- reduced reputational risk caused by the inappropriate or insecure sharing of personal data.

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better understanding of when, or whether, it is acceptable to share information without people's knowledge or consent or in the face of objection.

**6.6.2 Data Sharing digital platform**

The impact of true integrated care records from a governance perspective increases risks of potential breaches due to much larger amounts of patient information being joined together across a disparate geography. In order to ensure that this does not happen, we need to provide assurance to each participating organisation that information assets are registered, that data flows are identified and have data sharing agreements in place, that privacy impact assessments have been completed etc. The CCGs already use a web-based system in order to provide board level assurance on information assets which is necessary to ensure legal compliance and for the completion of the IG toolkit. This tool could be extended to include all health and social care providers, hospices and third sector in order to ensure consistent levels of assurance within each organisation and to reduce the burden in maintaining the system which otherwise would be significant. New enhancements include one organisation taking the lead on performing assessments and uploading to all partners. The Assessment would then show in each organisations workflow for approval, providing a consistent level of assurance with significantly less effort than possible today.

**6.6.3 Consent and Privacy**

Utilising previous strands of work to gain explicit consent, would allow cross sector analytics to be undertaken which are not currently possible within the economy. Use of the combination of work strands allows for these to be undertaken in a clear and transparent manner in accordance with an individual's wishes. It is envisaged that the work to seek consent from patients for secondary use of data could commence in advance of the final live system being available. The details of this will not be investigated however until the publication of the forthcoming Caldicott 3 review, to

ensure that any system is in alignment with the Data Protection Act (DPA) and the Caldicott guidance.

## 6.7 Clinical Messaging and standards

### 6.7.1 Clinical Coding

Through the duration of this LDR we will be working to ensure that we adopt the same technical standards for clinical coding. Our aim is to ensure that SNOMED CT is implemented across all sectors by April 2020. We are presently agreeing timescales with each organisation to support the move from existing platforms such as ICD10 or HRG4.

A single coding system across the economy will support use of an economy wide care record for functions beyond simple viewing of care data across organisations.

### 6.7.2 Discharge Documentation

Emerging models of care and evolving needs results in larger volumes of documents flowing between organisations and requiring review or action. We plan to give priority to reviewing these data flows but also the standards and structures of the documents themselves.

With plans to adopt the Academy of Medical Royal Colleges (AoMRC) [Standards](#) across the economy we aim to improve and standardise processes covering Discharge, Handover and Referrals.

This is a large scale piece of work, requiring systematic review and potential amendment of all documents in use within all sectors. Whilst we review standards for inter and intra-organisation documents, we will also be considering the mechanism by which documents transfer between organisations.



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The health economy is presently looking at a hosted delivery platform that can be accessed by all organisations for sending, and or receiving documents. Providing a single document brokering solution at an economy scale that encompasses health and social care needs. Once the collaboration work stream has standardised document structures, work can commence on the Clinical Document Architecture (CDA) to transmit machines in a machine readable using a Health Level 7 version 3 (HL7v3) Reference and Information Model (RIM) standard that is both machine and human readable. Machine parsing of documentation will allow key information to be transferred between systems for information and action.

### 6.7.3 Patient Identification

There is a need to provide a uniform method of identifying patients throughout the economy. The first requirement is the uniform adoption of NHS number by all organisations. This is practically complete for all partners with the exception of some social care schemes for which this is a piece of ongoing work. Work needs to be done to ensure that patients are positively identified at times of treatment and that this is recorded within the system. System implementations such as EPMA will have this built into the workflow.

In addition, we would like to see the provision of a single method for the individual to digitally identify themselves to all services with the economy. Consideration will be given to the option to use the National Identity Service (NIS) and its potential to allow a patient to securely identify themselves once and have access to appropriate records across the economy, or a local Citizen service potentially based from systems such as the electoral register to allow patients the same benefits. The unique patient identification approach allows an approach to patient consent, directly allowing an individual to provide dynamic consent for organisations to view or use data for both primary and secondary purposes.

#### 6.7.4 Data Informed Decisions and Business Intelligence

Enabled by the capability afforded from building a Shared Care Record across our economy we aim to improve at economy level our ability to collect, analyse and interpret data from a range of connected sources.

This LDP will see the creation of a Big Data project, the outputs of which we will use to drive improvements to promoting health and wellbeing and direct care delivery.

#### 6.7.5 *Point of contact*

We aim to provide cross sector analytics providing improved point of contact support to service professionals and patients. Utilising an abstraction of the care record to provide a reporting function capable of delivering point of contact decision prompts.

It is proposed that the point of contact services could include local prompts, national guidance or validated clinical calculations such as QRisk or INR calculations that can be performed on cross organisational data sets.

#### 6.7.6 *Population and Epidemiological Studies*

Consent from individuals through existing IG models) for data in population level process mining and epidemiological studies, would allow the development of new methods of identifying individual concerns. These could span from identifying an issue with Patient-Carer relationship which might result in a crisis event, through to early identification of life altering conditions such as diabetes or cancer.

The population and process based studies would however allow holistic or whole systems review of process, that would facilitate care commissioning. This would look at how people use the services across Shropshire, Telford & Wrekin to define how existing systems can be altered, commissioned or decommissioned according to need and efficacy.

### 7.0 Our Programme

#### 7.1 Building Capability

This section of the document brings together are planned milestones for the delivery of the National Capabilities and some more local initiatives already identified as necessary to underpin the delivery of the Sustainability and Transformation programme.

#### 7.2 Capability Deployment schedule

##### 7.2.1 Paper Free at point of care

Capability Group	AVERAGE SCORES ACROSS PROVIDERS			
	Baseline score	Target 2016/17	Target 2017/18	Target 2018/19
Records, assessments and plans	37.4	54.4	65.6	79
Transfer of care	31.2	35.8	58.0	70.0
Order and results management	25.5	32.0	77.5	83.8
Medicines Management and Optimisation	6.6	23.0	65.4	73.4
Decision support	28.8	42.4	52.0	58.0
Remote care	42.8	37.2	44.6	54.0
Asset and resource optimisation	39.8	44.8	65.0	76.0

#### 7.3 Universal Capabilities

The table belows summaries our plans for progressing the Universal Capabilities over the next 2 years, further detail can be found in appendix 4.

Universal Capability	Milestones
<p>A. Professionals across care settings can access GP-held information on GP-prescribed medications, patient allergies and adverse reactions</p>	<p>16/17</p> <ul style="list-style-type: none"> <li>• Improve quality of shared data Ensure that General Practice continues to update SCR entries</li> <li>• Ensure that providers utilise the SCR when the local GP record is not available.</li> <li>• Agree uniform method of identifying patients that would benefit from an Enhanced Summary Care record, due to out of economy interactions.</li> </ul>
	<p>17/18</p> <ul style="list-style-type: none"> <li>• Promote and adopt ESCR updates using agreed patient cohort. Frequent A&amp;E attendees and patients with multiple co-morbidities</li> <li>• Primary care data in Graphnet or similar system as part of EPACCS also shared with provider EPRs</li> </ul>
<p><b>B. Clinicians in U&amp;EC settings can access key GP-held information for those patients previously identified by GPs as most likely to present (in U&amp;EC)</b></p>	<p>16/17</p> <ul style="list-style-type: none"> <li>• Improve quality of shared data</li> <li>• Ensure that General Practice continues to update SCR entries</li> <li>• Ensure that providers utilise the SCR when the local GP record is not available.</li> <li>• Agree a methodology to identify patients likely to present at U&amp;EC facilities, including for frail and vulnerable patients</li> </ul>
	<p>17/18</p> <ul style="list-style-type: none"> <li>• Promote and adopt ESCR updates using agreed patient cohort. Frequent A&amp;E attendees and patients with multiple co-morbidities</li> <li>• Primary care data in Graphnet or similar system as part of EPACCS also shared with provider EPRs to cover all U&amp;EC settings – benefit is no new username and password needed by provider clinicians to access fuller primary care record.</li> </ul>
<p><b>C. Patients can access their GP record</b></p>	<p>16/17</p> <ul style="list-style-type: none"> <li>• Enablement of all practices to provide access to GP detailed care record.</li> </ul>
	<p>17/18</p> <ul style="list-style-type: none"> <li>• Promotional and comms activity to increase</li> </ul>

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	usage. Increased access to cover multiple digital platforms, such as mobile application and speech to text. EPACCS procurement will include a patient portal for access by the patient, carers and third sector.
<b>D. GPs can refer electronically to secondary care</b>	16/17 <ul style="list-style-type: none"> <li>Ensure that all specialties are available within e-referrals. Promote referrals within all practices with an 80% aspiration Review of Primary care referral management service Baseline provider slot availability for all services ensuring directly bookable with slot availability</li> </ul>
	17/18 <ul style="list-style-type: none"> <li>Promotion and monitoring of e-referral use, with an aim of all referrals being made electronically. Economy wide adoption of e-referral best practice.</li> <li>Eliminate other forms of referrals so that e-referrals is sole method.</li> </ul>
<b>E. GPs receive timely electronic discharge summaries from secondary care</b>	16/17 <ul style="list-style-type: none"> <li>Establish the clinical reference group to agree formats and standards for electronic communications.</li> <li>Providers to update the group with their journey to get all departments connected to the Docman Hub. Routine reports on performance by Trust by clinical area</li> <li>Ensure all agreed GP sites across Shropshire / Telford have the ability to receive discharges electronically from all providers.</li> <li>Identify GP site's with low usage and work with CCG IT leads to identify methods of supporting them.</li> <li>Submit joint Midlands mega hub business case to merge all versions of docman hubs into one instance.</li> </ul>
	17/18 <ul style="list-style-type: none"> <li>Docman hub consolidation across West Midlands</li> <li>CG's support the GP sites which are on the low usage report to improve the use of Docman in</li> </ul>

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	<p>the region</p> <ul style="list-style-type: none"> <li>• Implement solution to allow Social Care to receive Discharge Notes electronically.</li> <li>• Support the upgrade to fully hosted Docman 10 (due to be released approximately April 2017)</li> <li>• Providers and CCG work with Docman to identify a secondary method or failover process to send to GP's if the GP site has an issue with Docman or Docman hub is offline.</li> </ul>
<p><b>F. Social care receive timely electronic Assessment, Discharge and Withdrawal Notices from acute care</b></p>	<ul style="list-style-type: none"> <li>• Establish the clinical reference</li> <li>• Providers to update the Forum with their journey to get all departments connected to the Docman Hub</li> <li>• Work with wider midlands accord partners (particularly Nottingham who have already enabled messages between providers and Social care and have agreed formats for messages)</li> <li>• Project plan created</li> <li>• Look to adopt these formats locally</li> <li>• Enable discharge letters to Telford and Wrekin</li> </ul>
	<ul style="list-style-type: none"> <li>• Enable discharge letters to Shropshire</li> <li>• Enable assessments and withdrawal notices to both Shropshire area and Telford and Wrekin</li> </ul>
<p><b>G. Clinicians in unscheduled care settings can access child protection information with social care professionals notified accordingly</b></p>	<p>16/17</p> <ul style="list-style-type: none"> <li>• Agree interim process of U&amp;EC clinicians using SCR for any child attendance (or attendance which meets set criteria) Create plan for inclusion of Social care information into wider ICR (broader than child protection)</li> </ul>
	<p>17/18</p> <ul style="list-style-type: none"> <li>• Agree standards of content passing to ICR including flags. Establish data flows between systems (primarily for EPACCS) but with wider use kept in mind, particularly child protection flag Build flow of data into provider EPRs, with role based access and used in U&amp;EC settings</li> </ul>
<p><b>H. Professionals across care settings made aware of end-of-life preference information</b></p>	<p>16/17</p> <ul style="list-style-type: none"> <li>• Agree specification for an EPACCS system Market test for an EPACCS system.</li> </ul>
	<p>17/18</p> <ul style="list-style-type: none"> <li>• Begin deployment of EPACCS, starting with</li> </ul>

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	primary care integration and incorporating provider systems, local authority and third sector hospices. Include patient portal for patients and carers to access information, set preferences and grant access to third sector workers.
<b>I. GPs and community pharmacists can utilise electronic prescriptions</b>	16/17 <ul style="list-style-type: none"> <li>Produce economy wide dashboard to display use of EPS to CCG and member practices.</li> <li>Review utilisation for all practice to identify good practice and promote throughout economy.</li> </ul>
	17/18 <ul style="list-style-type: none"> <li>Actions for increasing utilisation in place.</li> <li>Promote patients ordering repeat prescription using EPS in combination with the patient online.</li> </ul>
<b>J. Patients can book appointments and order repeat prescriptions from their GP practice</b>	16/17 <ul style="list-style-type: none"> <li>All Practices to be enabled for patient online, detailed care records and electronic prescriptions EPS2.</li> </ul>
	17/18 <ul style="list-style-type: none"> <li>Practices to be offered use of mobile applications to replicate all online functionality on another digital platform subject to procurement.</li> </ul>

#### 7.4 Information Sharing

A key component of the ability to share records is a common identifier. The NHS number has been a mandatory field in datasets for many years and is also subject to being included as a mandatory field within the national commissioning contract. Social care can access the number however the uptake across the country is significantly less than NHS.

Organisation	Score
Shropshire Community NHS Trust	99.91%

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Robert Jones & Agnes Hunt Orthopaedic NHS FT	99.90%
South Staffordshire & Shropshire NHS FT	99.80%
Shrewsbury and Telford NHS Hospital Trust	99.00%
Telford & Wrekin Council	
Shropshire Council	

The table below sets out our plans for enabling the sharing of patient information

Project	Milestones
<b>Common Information sharing agreements established.</b>	16/17 Working across LDR footprints as partner in midlands accord, agree a consistent approach to consent to facilitate later joining of integrated care records. Share Data Sharing agreements and localise for use in Shropshire, Telford and Wrekin Sign up by all organisations in LDR footprint
<b>Use of the NHS Number in Health and Care Systems</b>	16/17 Will be decided after a comprehensive review of system used by local authorities and the third sector.
<b>other</b>	17/18 Implementation of an electronic Information Asset Management system across all partners.

## 7.5 Minimising Risks arising from technology

### 7.5.1 Privacy, Governance and Cyber – Security

All NHS organisations have passed the IG toolkit requirement with scores of satisfactory or better for version 13. One local authority also met a satisfactory score whilst Shropshire Local Authority marginally missed the target and is therefore not satisfactory. It should be noted however that local authorities have only recently been asked to undergo IG toolkit returns and they are therefore improving their policies, procedures and processes over time.

Satisfactory > = 66%

Organisation	Score
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Shropshire CCG	91
Telford and Wrekin CCG	91
Shropshire Community NHS Trust	66
Rob Jones & Agnes Hunt Orthopaedic NHS FT	89
South Staffordshire & Shropshire NHS FT	93
Shrewsbury and Telford NHS Hospital Trust	73
Shropshire Doctors	69
Telford & Wrekin Council	85
Shropshire Council	63

The aspirations of creating an integrated care record for our population is a key ambition of this digital roadmap. However, we must remain cognisant of the increased risks to confidentiality and governance that this project raises. We must move forward with sharing records at the same time that we increase the protection offered to patient information and strengthen our governance processes.

#### 7.5.2 Strengthening Security

Security is an area that is seen in two very different ways;

1. A way to secure the patient record
2. A way to prevent clinicians from accessing the record they need to see with yet another set of usernames and passwords.

In order that we ensure our project meets point A) but avoids point B) our roadmap seeks to ensure that the integration of records is done in a way which embeds the record within the overall clinical application being used by the clinician. In Primary care this would be EMIS Web, whilst in a secondary care setting it would be within their EPR portal. In this way we are providing the necessary information at the point of care to influence the treatment of the patient whilst at the same time ensuring that security is consistent and robust.

**Local Digital Roadmap**

A secondary aim of the digital roadmap is to introduce single sign on. Whilst the ICR will be embedded into the core application of the clinician, there are many more applications that clinicians, social workers and admin staff access every day which cause delays. A project in Birmingham to introduce single sign on for GPs found that on average there are 11-14 applications that GPs access on a day to day basis, each with a separate username and password. By removing the need to have separate passwords, the estimated improvement in efficiency is 25 minutes per clinician per day.

### 7.5.3 Strengthening Consent

The economy is working collaboratively with other LDR footprints including Staffordshire and other midlands based teams. This collaboration includes data sharing agreements and approaches to ensuring consent is valid to be used as part of the integrated care record project and population health management big data project.

The proposed data sharing agreement is being provided by Birmingham who are already sharing records as part of their Your Care Connected programme. The DSA has been shared with and had input from the ICO, the Caldicott 3 panel, with solicitors and Barristers no less than 8 times through various revisions and with the BMA. This DSA will be tailored by local IG teams and taken to each participating organisation for approval including LMCs, Health and Well Being Boards, Patient participation groups and the STP group.

The Data Sharing agreement calls for the use of implied consent using opt out for sharing medical records for direct patient care. In order to have valid implied consent, the economy must have made every effort to inform patients of the sharing and provide them with the ability and means to opt out.

## Local Digital Roadmap

The population health big data project will use opt in consent to ensure that the patient is fully assured that they want to be involved in the project.

#### 7.5.4 Strengthening Governance

The CCGs already use a tool called UAssure which is a web based governance tool which provides evidence for the IG toolkit returns, provides assurance to the boards that they are appropriately managing information assets appropriately and that they are compliant with legislation and cabinet office policy. This tool is web based and includes the ability to record assets such as integrated care records, complete privacy impact assessments, equality impact assessments and identify data flows as well as store the relevant data sharing agreements which legitimate the flow of information. Each asset is automatically risk assessed and any high risk assets are then flagged for audit by the IG team. The system includes role based access, alerts and workflow. Audits are completed at random in the system by the IG teams to ensure compliance.

This system could be used across the local economy by all organisations to ensure the following;

- A consistent level of assurance for all Boards with routine reports on risks.
- For shared assets like ICR, the **asset** would be listed once and associated with each participating organisation. The asset would then be shown in each participating organisation with a consistent risk score and put into the workflow of the IG team and SIRO for approval.
- Supplementary **documentation** such as data sharing agreements, privacy impact assessments and so on would be loaded once and appear in all organisations views to ensure consistency. Automated Alerts of expiring documents are sent by the system to all parties to renew the document.
- Audits done by IG on shared assets are visible to all parties who are linked to that asset

The benefits to the economy are therefore;

- Consistent levels of assurance to the relevant Boards
- Reduced risk of Fines by the ICO (Up to £500K per organisation) and consequent loss of public faith by any lost patient or service user's data.
- Efficiency in data entry to the benefit of all those participating organisations
- Efficiency over the previous method of managing information asset management provided by the Dept. of Health. This method remains largely in place throughout the NHS today and is two excel spreadsheets, one for the asset and another for data flows, neither of which provided any real value or assurance to boards that they were compliant with legislation and guidance. Efficiency is estimated at 100 man hours per organisation of circa 2000 staff.

#### 7.5.5 Cyber Security

The internet and digital technologies are transforming our society by driving economic growth, connecting people and providing new ways to communicate and co-operate with one another. The World Wide Web only began in 1991, but today 2 billion people are online – almost a third of the world's population. Billions more are set to join them over the next decade. There are over 5 billion internet-connected devices. \$8 trillion changed hands last year in online commerce. It is therefore no surprise that Cybercrime is a fast-growing area of crime. More and more criminals are exploiting the speed, convenience and anonymity of the Internet to commit a diverse range of criminal activities that know no borders, either physical or virtual, cause serious harm and pose very real threats to victims worldwide.

As we connect digital systems across health and social care organisations, care must be given to the potential threat posed by the weakest point in the system. Use of techniques such as Demilitarized Zones will need to be considered on an economy level.

In computer security, a DMZ or demilitarized zone (sometimes referred to as a perimeter network) is a physical or logical subnetwork that contains and exposes an organization's external-facing services to a larger and untrusted network, usually the Internet. The purpose of a DMZ is to add an additional layer of security to an organization's local area network (LAN); an external network node only has direct access to equipment in the DMZ, rather than any other part of the network.

### 7.5.6 CareCERT

It is the intention of the economy to engage with the HSCIC Computer Emergency Response Team (CareCERT) to gain advice and oversight on cyber security matters. CareCERT consists of three key services, which support stronger cyber security across health and social care:

- A national cyber security incident management function;
- Issuing national level threat advisories, for immediate broadcast to organisations across the health and social care sector;
- Publishing good practice guidance on cyber security for the health and social care system.

### 7.5.7 Protecting Business continuity

Ensuring business continuity become ever more important as we introduce more digitised systems.

Despite the reliability of technologies available today, there is always a risk that systems might fail and data may not be available when needed. A pragmatic view needs to be taken to balance risk and probability with effort needed.

## Local Digital Roadmap

Of primary importance to us is protecting the provision of 'safe care' and so as we embrace on our programme of delivery, we will assess the impact with our services and work with them to ensure that they have considered the business continuity requirements for the most critical areas.

## 7.6 Infrastructure

We identified within our baseline the current position regarding infrastructure. The table below sets out our plans to improve that position and to exploit the 'paper-free at point of care'

Project	Milestones
<b>Consolidation of Various wi-fi networks across the region</b>	16/17 Each organisation broadcast SSID to other partner organisations
<b>Deployment of Virtual Desktop Infrastructure within Primary Care</b>	16/17 Business case produced 17/18 onwards Procurement and deployment
<b>Underlying resilience of data storage and processing facilities on-site to at least tier 3 assurance.</b>	Providers are currently in the process of reviewing cloud based options.

### 8.0 Readiness to Proceed - Leadership, Governance and Programme Management

#### 8.1 Clinical Leadership

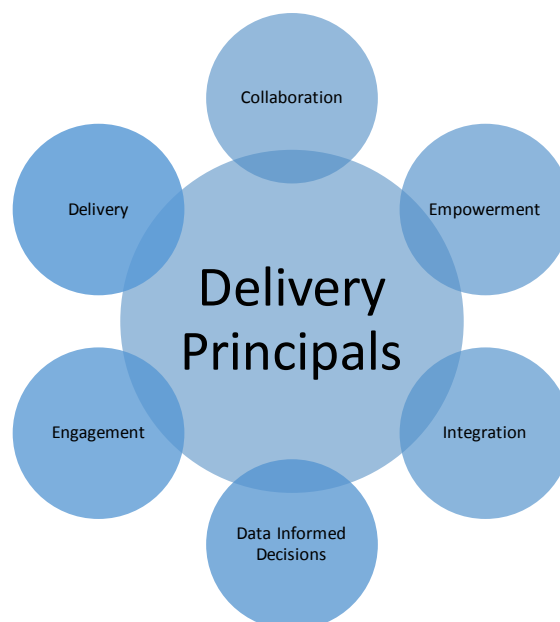
This strategy is supportive of identifying a Chief Clinical Information Officer (CCIO) within each provider organisation to provide clinical leadership and ensure clinical buy-in to developments.

#### 8.2 Programme Governance

Oversight of this Digital Roadmap will be provided by the STP board to ensure there is no ambiguity in terms of what needs to be delivered and when. The governance model is shown within this section. However, we have also agreed across the health economy clear principles that underpin delivery.

##### 8.2.1 Our Delivery Principles

There are 6 core principles that form the foundation of the Local Health Economy Digital Roadmap. These key principles shown in the diagram below will bind together the organisations that form the local health economy delivery team.



### **Collaboration**

We will ensure the continuation and growth of a collaborative and inclusive culture within the local health economy, necessary to ensure we successfully deliver this roadmap.

### **Empowerment**

We will empower patients and clinicians to interact through a variety of appropriate communication channels, including video, social media, email, and telephone, to create a patient owned digital front door that compliments the more traditional face-to-face methods of interaction.

### **Integration**

We will deliver this roadmap by creating a 'Connected Digital Eco-system' ensuring we build on current investment by integrating, as appropriate, local systems to deliver a shared care record for both clinicians and patients that is not limited by organisational boundaries.

### **Data Informed Decision Making**

We will use our digital Eco-system to deliver greater levels of intelligence to our transformation teams to help continuously improve how care is delivered by understanding what is working well, what we might need to change and where we need to focus resources to deliver a healthier population.

### **Engagement**

Engagement with Service Users is key when designing digital solutions to support healthier living. We will do this by working closely with the transformation team and service users to ensure our digital solutions meet expected needs.



### Delivery

Each organisation commits to the collective realisation of this vision, and that the programme is without boundaries. There is a common agreement that in order to deliver this programme of work capabilities and resources will need to be shared in order to deliver timely capability to the transformation team.

#### 8.2.2 Governance Structure



The STP group shown above has overall responsibility for the STP and LDR. Responsibility for oversight of the implementation rests with the STP group. The responsibility for creation of the LDR is delegated to the LDR. This group (previously called the Digital Strategy group which has been in existence for over 2 years) also has responsibility for the implementation of the LDR up to 2020.

The creation of a number of sub groups are necessary to ensure good governance processes are in place.

#### **Information Governance Group**

The information governance group will have responsibility for:

**Local Digital Roadmap**

- Creating the data sharing agreement needed by March 2017 to enable data sharing for integrated care record.
- Completing a comprehensive privacy impact assessment for integrated care records
- Agreeing role based access initiatives to be implemented within integrated care system.
- Oversee any IG related issues with any future procurements and ensuring they meet cyber security standards.
- Update the community wide electronic assurance system which provides assurance to each organisations board of compliance with legislative, common law and government policy requirements.

***Project Management Office***

- The PMO office will coordinate the LDR activities, working across the geography to ensure progress is being made and reported routinely. Where progress is delayed, highlighting this to the LDR steering group and STP group where necessary to redress any delays.

***Clinical Reference Group***

- This groups membership will change depending on the stream of work being undertaken. In the first instance it is likely to contain clinicians involved in end of life care across the county. This group will help to agree the priority of the development of the EPACCS system and the way in which it is configured to fit with current or enhanced ways of working. It may also contain patient or carer representatives on the group. A CCIO or Senior IT leader will also be part of the group to ensure there is IT expertise present.

***Design Authority***

This group will be made up of technologists and CCIOs. Its remit will be:

## Shropshire and Telford & Wrekin Local Digital Roadmap

- **Quality assure** that new systems or standards are fit for purpose, and comply with the standards necessary to maintain a robust, consistent, efficient, effective and integrated technical infrastructure. Standards would include areas such as messaging formats, coding standards, interoperability standards etc. Any organisation wishing to deploy a non-standard solution will need to make a strong case as to why it is necessary.
- **Technical Assurance** - To validate changes to technical standards and where validated, pass the recommendation to progress to the PMO.
- **Communication** - to ensure that the communications between programmes, projects and teams and others are adequate.
- **Alignment of Provider IM&T Strategies** – To facilitate greater understanding across provider organisations of the overall IM&T requirements to achieve the delivery of the LDR. This will assist individual provider IM&T strategy decisions to take account of the requirements of the LDR.

### ***Patient Engagement and Communication***

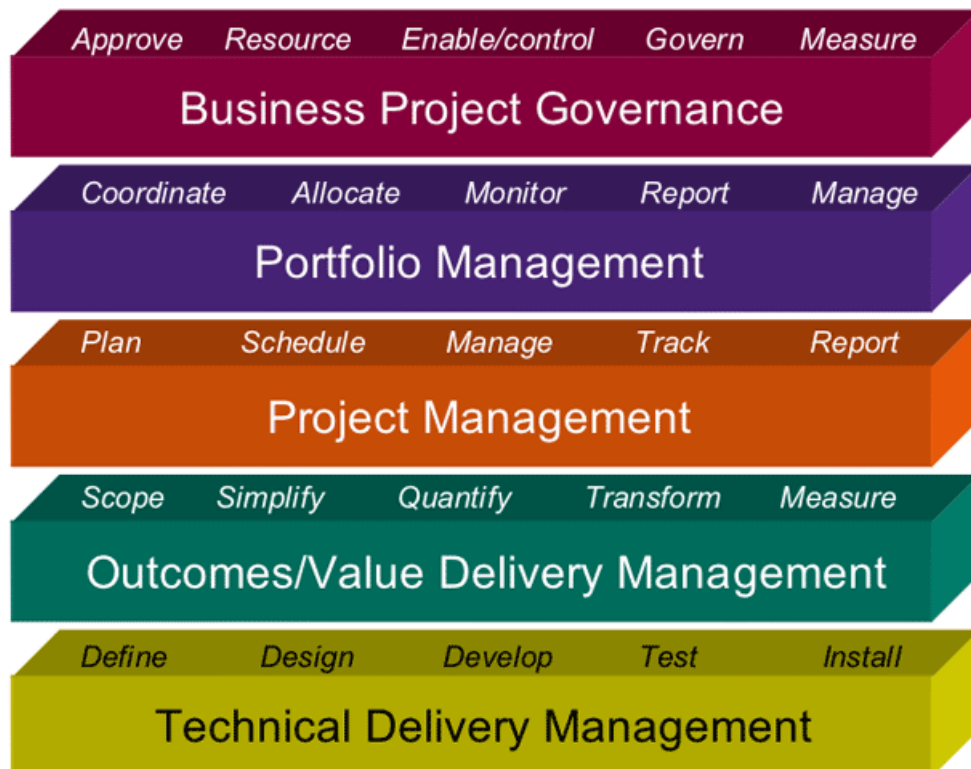
- This group would be made up of Communication and engagement specialists as well as patient or service user representatives. Their purpose will be:
- Engage with patients and service users to ensure their wishes and aspirations are understood
- To create a campaign to inform the local population of the integrated care record, making clear the benefits and rationale for why it is happening.

### Local Digital Roadmap

- Making it clear that patients have the right to opt out of data sharing and how they can do this.
- Attend public meetings and promote the digital programme of Shropshire, Telford and Wrekin
- Encourage patients and service users to opt in to sharing of anonymised data sharing for the population intelligence platform.

### 8.3 Programme and Project Management

The delivery of the digital programme will be based upon a 5 layer, 5 strand top down approach to ensure consistency with the strategic needs and aims of the economy. The governance structure underpinning this programme is shown on page 43.



The delivery of this programme will be managed by the LDP Steering Group and overseen by the 'Sustainability and Transformation' group to which it reports.

## Local Digital Roadmap

To ensure an appropriate level of control is in place and to align the digital roadmap outputs to the transformation programme, we will adopt both project methods such as PRINCE 2 and MSP for the management of business change.

The overall programme will bring together portfolios of work managed at both an organisation level with those managed at Health Economy level.

Programmes managed at Health Economy level will be managed within a number of work streams designed to cover both the National Capability requirements as well as a range of local initiatives designed to underpin the STP. To enable operationalisation of a large and complicated volume of work, with each programme reporting back to the Local Digital Roadmap Strategy Group to ensure a continued oversight and ownership.

### 8.3.1 Benefits Realisation Management

The Sustainability and Transformation Programme will deliver a significant portfolio of benefits, enabled by outputs from this Digital Roadmap.

Benefits Realisation Management process will be used to:

- Identify the investment outcomes
- Define benefit measures for each outcome
- Collect current benefit measure data to have a quantitative basis for decision making
- Agree a tailored BRM approach for this investment
- Plan the new or changed capabilities necessary to realize the benefits
- Plan the investments needed to make the changes necessary to create or change the capabilities

## Shropshire and Telford & Wrekin Local Digital Roadmap

- Optimize the plan to reduce waste and have acceptable levels of resource, risk, cost, quality and time
- Implement the plan
- Review the impact of the plan implementation on the Benefit Measures and use insights to improve
- On completion of the plan, ensure BRM continues to sustain the capabilities and realisation of benefits

The digital Roadmap will be an integral part of the Transformation and Sustainability programme where programme level benefits will be mapped and managed.

At business case stage, we will ensure that all 'project level' benefits are identified and embedded into the benefits map which will be owned by the transformation programme.

The timely delivery of projects, outputs and benefits either direct or indirect, will be the responsibility of the Digital Roadmap Steering group. However, prioritisation of projects will be set by the Transformation and Sustainability group. This will ensure complete alignment of projects to the programme and the timely delivery of enabling capabilities that will help Business Change Managers deliver transformation and ultimately benefit delivery.

It is worth noting that The Shrewsbury and Telford Hospital are working with the Virginia Mason institute to over 5 years to improve change management processes to support the embedding of technology to maximise benefit delivery. Learning from this will be shared across the programme.

### 8.4 Programme Funding

The level of funding necessary to deliver this LDR will be significant and will require careful financial planning.

It is clear that not all projects within this programme have funding identified and that there is an apparent underinvestment across the whole health economy on IM&T.

The table below shows for 2016/17 the proportion of spend against the overall budget from the returns that we have received to date.

Organisation	IM&T Spend 2016/17	Operating Budget 2016/17	% IMT Spend
Shrewsbury and Telford Hospitals Trust	£1,546,000	£350,000,000	0.4
Rob Jones and Agnus Hunt Orthopedic Hospital Trust	£1,674,000	£101,000,000	1.7
Shropdoc	Missing	Missing	Missing
Shropshire Community Health	£3,000,000	£81,000,000	3.7
South Staffordshire and Shropshire Healthcare NHS FT	Missing	Missing	Missing

The required deliver of IT Capability to the Sustainability and Transformation programme will determine IT spend over the duration of the programme. We will work together with the STP group to ensure that the IT projects within the programme have clearly defined and timely delivered funding streams.

Our expectation is that this programme will be funded by combining resources made available from:

1. Current and uplifted IM&T spend
2. Innovation challenge funds.
3. Our local Sustainability and Transformation programme
4. The unlocking of funding from the additional £1.8Billion being made available nationally.
5. Reinvestment of efficiencies delivered through the effective use of technology.

### 8.5 Programme Resourcing

A resource plan is being put together by the STP group to resource both the STP work and the LDR implementation. The resource plan will make use of existing resources where possible, alongside investment from each partner to support the transformation.



### Appendices

#### Appendix 1 – Primary Care Digital Maturity

## Appendix 1

### CCG Digital Maturity Baseline

	Question	Shropshire CCG	T&W CCG
1	All practices have access to SMS (or equivalent messaging system) integrated with the practice principal clinical system to support communications with patients.	Yes	Yes
2	All NHS owned GP IT equipment is recorded in an accurate asset register.	yes	yes
3	All NHS owned GP IT equipment is subjected to an approved IT reuse & disposal policy and procedures - using authorised contractors. This is fully integrated with the asset management system	yes	yes
4	There is a locally agreed WES (Warranted Environment Specification) for GP IT equipment which enables practices to effectively operate concurrently applications necessary to delivery both core and enhanced GP IT	yes	yes
5	All health & care organisations (including GPS) can access their principal record systems from all local commissioned provider locations.	<25	<26
6	The CCG commissioned service provider for GP IT services will have an annually reviewed tested Business Continuity Plan and validated IT Disaster Recovery Plan for services critical to GP service continuity	Yes	Yes
7	A local Electronic Palliative Care Co-ordination System (EPaCCS) supporting the recording and sharing of people's care preferences and key details about their care at the end of life which is integrated with principal primary care clinical systems and meets the requirements of ISB 1580 (End of Life Care Co-ordination: Core Content) is available.	No	No
8	The practices have access to a formal Clinical Safety System (ISB 160) and qualified clinical safety officer	Yes	Yes
9	All local providers of health & social care sharing patient digital information have systems which maintain a full automated audit of read and write access to individual patient records	Yes	Yes
10	The CCG completes a formal review of the IT Services with each Practice at least once a year.	No	No
11	The commissioned GP IT services include formal P3M (Project, Programme and Portfolio Management) methodologies which are recognised and used in the deployment of GP Clinical systems, local implementation of national solutions and major primary care IT infrastructure changes or upgrades.	Yes	Yes
12	Formal governance arrangements are established which ensure the effective mapping and provision of digital enablers that will support delivery of locally identified health and care priorities. Business cases (where necessary) are shared with, and agreed with relevant partners in the local area. Business cases where required for Informatics-enabled programmes with cross-community impact are approved by a relevant cross-community Board.	Yes	Yes
13	13 All local GPs and providers of health & social care sharing patient digital information agree to a consistent information sharing model (including common consent protocols).	No	No
14	All software (including operating systems) used on NHS owned GP IT infrastructure by the practice must be approved and recorded on a software asset & license register which must confirm the software is appropriately and legally licensed for such use.	Yes	Yes
15	The CCG has appointed a Chief Clinical Information Officer (CCIO) or equivalent accountable officer who will provide (clinical) leadership for the development of local IT strategy including the development of primary care IT services	No	No
16	There is a local GP IT strategy and programme with roadmap annually reviewed and aligned with local commissioning priorities	Yes	Yes

Local Digital Roadmap

17a	There is a comprehensive ongoing training and clinical system optimisation service to support GP Principal clinical systems and national clinical services available to all practices.	Yes	Yes
17b	There is support available to all practices for deployment, training, technical issues, tracking database maintenance and supplier liaison and escalation for GPSoC (lot 1) clinical systems.	Yes	Yes
18	GP IT services are commissioned and contracted with robust and clear service specifications.	Yes	Yes
19	All CCG commissioned GP IT support services are supported with KPI reports (at least 4/year) and there are annual service performance and contract review meetings.	Yes	Yes
20	There is a clear agreed local (CCG) budgeted plan for the full funding of all core GP IT requirements for the next 2 years	Yes	Yes
21	The GP IT infrastructure estate supporting core GP IT (includes desktop, mobile, server and network equipment) has a fully documented plan for refresh and replacement. This must include a local WES (Warranted Environment Specification) for such equipment which as a minimum will meet the WES for the principal clinical systems used and any NHS mandated national systems and infrastructure.	Yes	Yes
22	All general practices have secure data storage services available for all electronic data other than that stored in their GPSOC clinical systems and NHS Mail to a standard not less than tier 3 data centre.	No	No
23	CCG Commissioned GP IT support provides consistent support for core GMS contracted hours (0800 - 1830 Mon - Fri excl Bank holidays) (GMS Contract)	Yes	Yes
24	The GP IT support service desk has current formal accreditation through a recognised (industry or NHS) scheme or meets the requirements for GPIT service desk in the GP IT Schedule of Services (GPIT Operating model revised 2016).	Yes	Yes
25	GP IT services available include IT Security advice and oversight, including configuration support, audit, investigation and routine monitoring.	Yes	Yes
26	Where there is a local community network wholly or part funded through GPIT and used in addition to, or in place of, N3 by general practices AND other locations and care settings the costs are shared between these organisations	Yes	Yes
27	CCG Commissioned GP IT support Service supports general practice to provide extended hours (DES) services	Urgent service only	Urgent service only
28	CCG Commissioned GP IT support Service supports general practice to provide 7-day week services to patients where these are offered.	Urgent service only	Urgent service only
29	here is an agreed local strategy and plan for core GP IT infrastructure & software investment to meet the needs of (i) practice organic/incremental growth (ii) practice developments e.g. mergers (iii) significant primary care developments e.g. new builds	Yes	Yes
30	Within primary care locations Wi-Fi access is available to GPs and primary care delivery staff.	No	No
31	Access to Wi-Fi services is available to general practice clinical staff across local commissioned provider locations	No	No
32	There is clearly defined Executive Leadership (CCG) to ensure that digital technology maturity is recognised as a key enabler to achievement of core objectives in the effective commissioning and delivery of quality health and care and future service transformation.	Yes	Yes
33.1	Formal governance and accountability arrangements clearly articulated and embedded, which effectively engage strategic partners, with terms of reference and reporting responsibilities clearly defined, including the following forums/structures:	Yes	Yes
33.2	The commissioner (CCG) owns the strategic digital direction and ensures that this is driven by local commissioning objectives.	Yes	Yes
34.1	Commissioning of clinical services, routinely includes clinical (CCIO) consideration of digital technologies/systems, together with associated benefits.	No	No

Local Digital Roadmap

34.2	Service specifications for commissioning of clinical services, include core digital requirements, including, but not limited to data management and reporting, data security, data sharing, systems access, digital technology requirements.	Yes	Yes
35	Clear standing financial instructions must be established between commissioners and delivery organisations. Clear reporting, monitoring and review arrangements established to ensure CCG oversight of GPIT funding and expenditure, with clear escalation points agreed.	Yes	Yes
36.1	CCG has secured a service that meets or exceeds the 'core' standards outlined in the GPIT Operating model/framework with clearly define local IM&T requirements in the form of a detailed service specification that will ensure local IM&T delivery partners are clear on service needs.	Yes	Yes
36.2	Negotiate and contract for IM&T services ensuring value for money through effective use of national framework contract (e.g. Lead Provider Framework - LPF) and procurement mechanisms in accordance with NHSE procurement rules.	Yes	Yes
37.1	The CCG ensures that appropriate IG and information standards/requirements are clearly specified within any local IM&T service specification and associated service level agreement (SLA) and contractual arrangements with IM&T delivery partners. Able to evidence level 2 compliance for commissioned GPIT delivery partners.	Yes	Yes
37.2	Currently NHS England are responsible for commissioning a local IG support service as described in section 6.4 - GPIT Operating Model. GP Practice IGT compliance is being monitored locally to ensure effective delivery of GP IGT support services.	Yes	Yes
37.3	IGT compliance is assured through the standard contractual routes with wider health economy providers.	Yes	Yes
38.1	The CCG as local commissioner, through formal local governance arrangements, is responsible for ensuring benefit realisation from local investment in digital technology.	Yes	Yes
38.2	Benefits are explicitly defined, tracked and captured within individual projects.	No	No
39	CCGs have appropriate mechanisms in place to effectively manage risks and issues in accordance with system wide procedures to help ensure the safe and successful delivery of outcomes associated with digital investment.	Yes	Yes
40	CCGs actively promote take up and utilisation of national strategic systems, such as SCR, e-Referrals, GP2GP, EPS2, Patient Online, to enable more integrated care across all care settings and achieve operational benefits for patients and clinicians.	Yes	Yes
41.1	There is a comprehensive data quality advice and guidance service is available to all GPs, including training in data quality, clinical coding and information management skills.	No	No
41.2	A formal and structured data quality accreditation programme is commissioned by the CCG and available for GP sites to ensure continuous review and improvement of data quality within General Practice.	No	No
41.3	Calculating Quality Reporting Service (CQRS), General Practice Extraction Service (GPES), A proactive support service is in place locally to support Quality and Outcomes (QOF) data collection and reporting, which includes review, report management and remedial action planning, particularly around exception reporting, to ensure appropriate data quality within GP sites to enable effective QOF reporting.	Yes	Yes

Acronym	Term
<b>5YFV</b>	Five Year Forward View
<b>AoMRC</b>	Academy of Medical Royal Colleges
<b>API</b>	Application Program Interface
<b>BRM</b>	Benefits Realisation Management
<b>CCG</b>	Clinical Commissioning Group
<b>CDA</b>	Clinical Document Application
<b>CERT</b>	Computer Emergency Response Team
<b>COIN</b>	Community of Interest Network
<b>CSP</b>	Cyber Security Programme
<b>CSU</b>	Commissioning Support Unit
<b>DM+D</b>	Dictionary of Medicines and Devices
<b>DMZ</b>	Demilitarized Zone
<b>DNR</b>	Do Not Resuscitate
<b>DPA</b>	Data Protection Act
<b>DSA</b>	Data Sharing Agreement
<b>DXA</b>	Data Exchange Agreement
<b>EDT</b>	Electronic Document Transfer
<b>EHR</b>	Electronic Health Record
<b>EPaCCS</b>	Electronic Palliative Care Communication System
<b>EPS</b>	Electronic Prescription Service
<b>FMD</b>	Falsified Medicines Directive
<b>FPN</b>	Fair Processing Notice
<b>GP</b>	General Practice
<b>GP2GP</b>	Primary Care Medical Record Transfer
<b>HGL</b>	Healthcare Gateway Limited
<b>HL7</b>	Health Level 7
<b>HRG4</b>	Healthcare Resource Groups version 4
<b>HSCN</b>	Health and Social Care Network
<b>IaaS</b>	Infrastructure as a Service
<b>ICD10</b>	International Statistical Classification of Diseases version 10
<b>ICO</b>	Information Commissioners Office
<b>IG</b>	Information Governance
<b>ITIL</b>	Information Technology Infrastructure Library
<b>ITK</b>	Interoperability Toolkit
<b>IGT</b>	Information Governance Toolkit
<b>IOM</b>	Institute of Medicine
<b>LAN</b>	Local Area Network
<b>LDR</b>	Local Digital Roadmap
<b>MESH</b>	Messaging Exchange for Social Care and Health
<b>MIG</b>	Medical Interoperable Gateway
<b>OSI</b>	Open Systems Interconnection
<b>NIS</b>	National Identity Service
<b>PIA</b>	Privacy Impact Assessment
<b>PSN</b>	Public Sector Network
<b>RBAC</b>	Role Based Access Control
<b>RIM</b>	Reference Information Model

<b>SaaS</b>	Software as a Service
<b>SDIP</b>	Service Development Improvement Plan
<b>SOC</b>	Security and Operations Centre
<b>STP</b>	Sustainability and Transformation Planning
<b>TRUD</b>	Technology Reference data Update Distribution
<b>VDI</b>	Virtual Desktop Infrastructure
<b>VOIP</b>	Voice Over Internet Protocol
<b>WAN</b>	Wide Area Network
<b>WMAS</b>	West Midlands Ambulance Service
<b>XML</b>	Extensible Mark-up Language