Integrated Care System

Technology and interoperability supporting the Integrated Care System

Dr Graham Evans

Chief Digital Officer

The general perception from the public is that the NHS is a single entity, with well connected systems and services that enable patients and service users to move seamlessly between point of care.

From "Isolation………
……… to Integration"

The reality is, the NHS and broader Health and Care System, is a complex amalgamation of different organisations, operating in a dynamic and fast moving environment. Often working in "***isolation***", but starting to move towards "***integration***".

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North East and North Cumbria

Drivers for change

National/Political

Technological

"…digitising effectively is not simply about the technology, it is mostly about the people."

Wachter Review 7 Sept 2016

Regional

(STP) ICS/ICP

People

NURSING SHORTAGE

- 3,000 NURSES FROM 46 HOSPITALS
- 43% HOSPITALS 1 NURSE PER 8 PATIENTS
- 18% HOSPITALS 1 NURSE PER 10 PATIENTS

SOURCE: KING'S COLLEGE LONDON

HELP WANTED

Drivers for change….

National/Political

The NHS Long Term Plan

#NHSLongTermPlan
www.longtermplan.nhs.uk
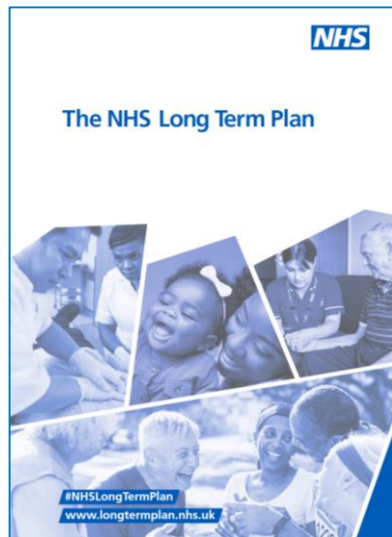
Technological

Milestones for digitally-enabled care
- Introducing controls to ensure new systems procured by the NHS comply with new agreed standards
- By 2020, five geographies (to be confirmed) will deliver a longitudinal health and care record linking NHS and local authority organisations. Three more areas will follow in 2021
- By 2020/21, every patient will have access to their care plan on the NHS app, as well as communications from their carer professionals
- There will be 100% compliance with mandated cyber security standards by 2021.
- In 2021/22, every local NHS organisation will have a chief clinical information officer (CCIO) or chief information officer (CIO) on their board
- By 2024 there will be universal coverage of regional local health and care records.
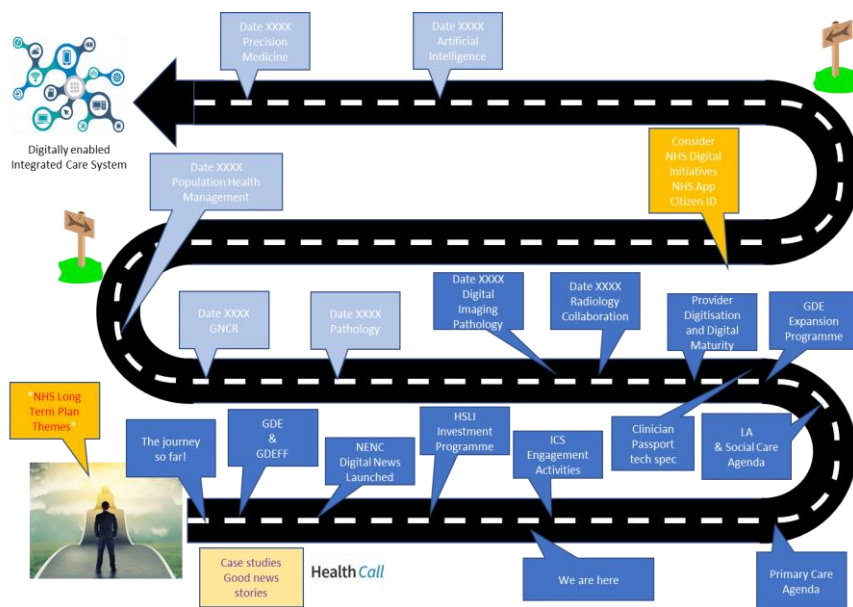
Map and align
digital enabling
milestones/deliverables
to the
NENC Digital Roadmap
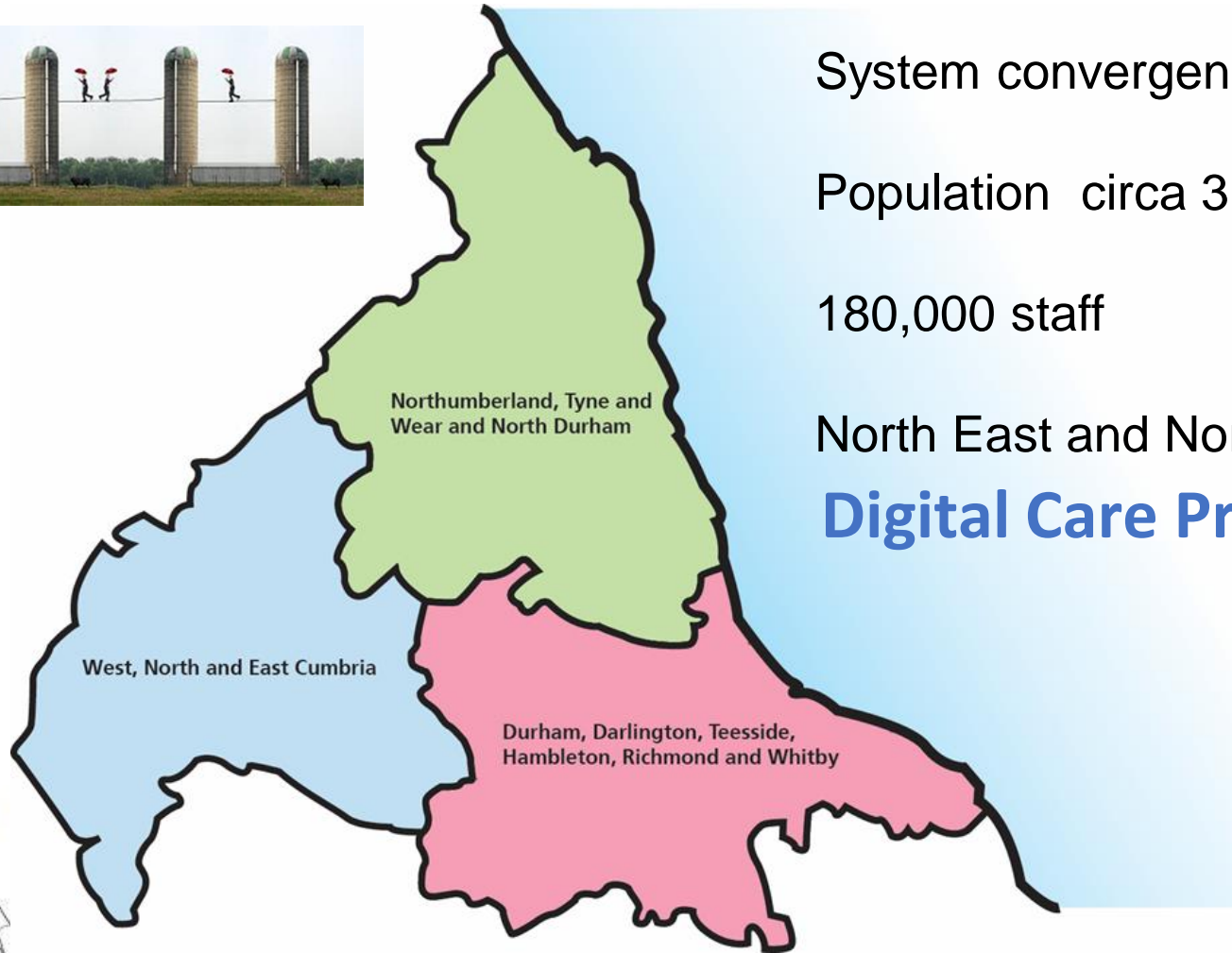
System convergence

Population circa 3.4m

180,000 staff

North East and North Cumbria
Digital Care Programme

Northumberland, Tyne and Wear and North Durham

West, North and East Cumbria

Durham, Darlington, Teesside, Hambleton, Richmond and Whitby

Join our journey...

Developing Integrated Health and Care
North East and North Cumbria
Working for people from North Yorkshire to the Scottish Borders
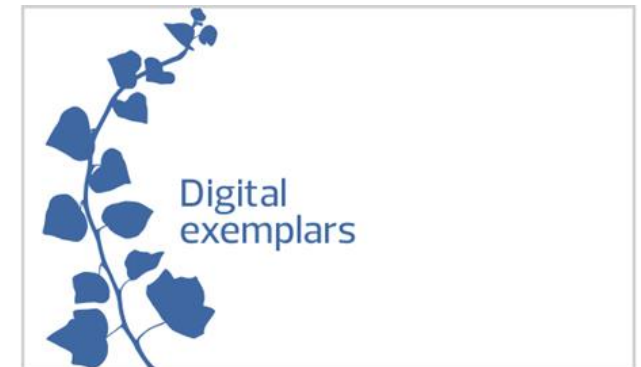
Digital exemplars

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"An integrated <u>system</u> will only be as good as the weakest link"

NHS *in* England Regulatory bodies

Integrated Care System (ICS)
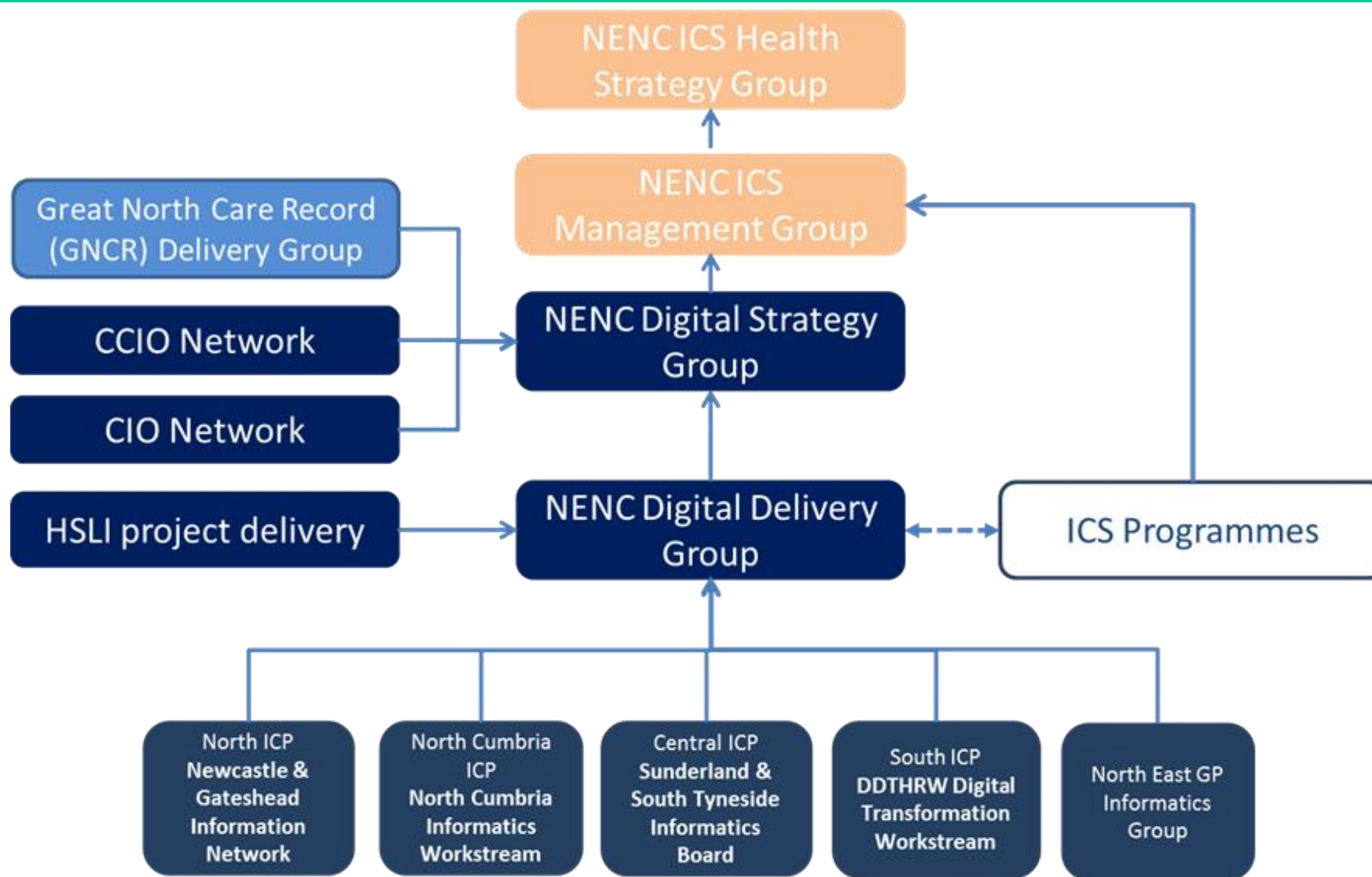
Integrated Care Partnership (ICP)

Organisation (and place)

Need to consider how we ensure autonomous and sovereign provider organisations commit and align to the system-wide agenda and priorities.
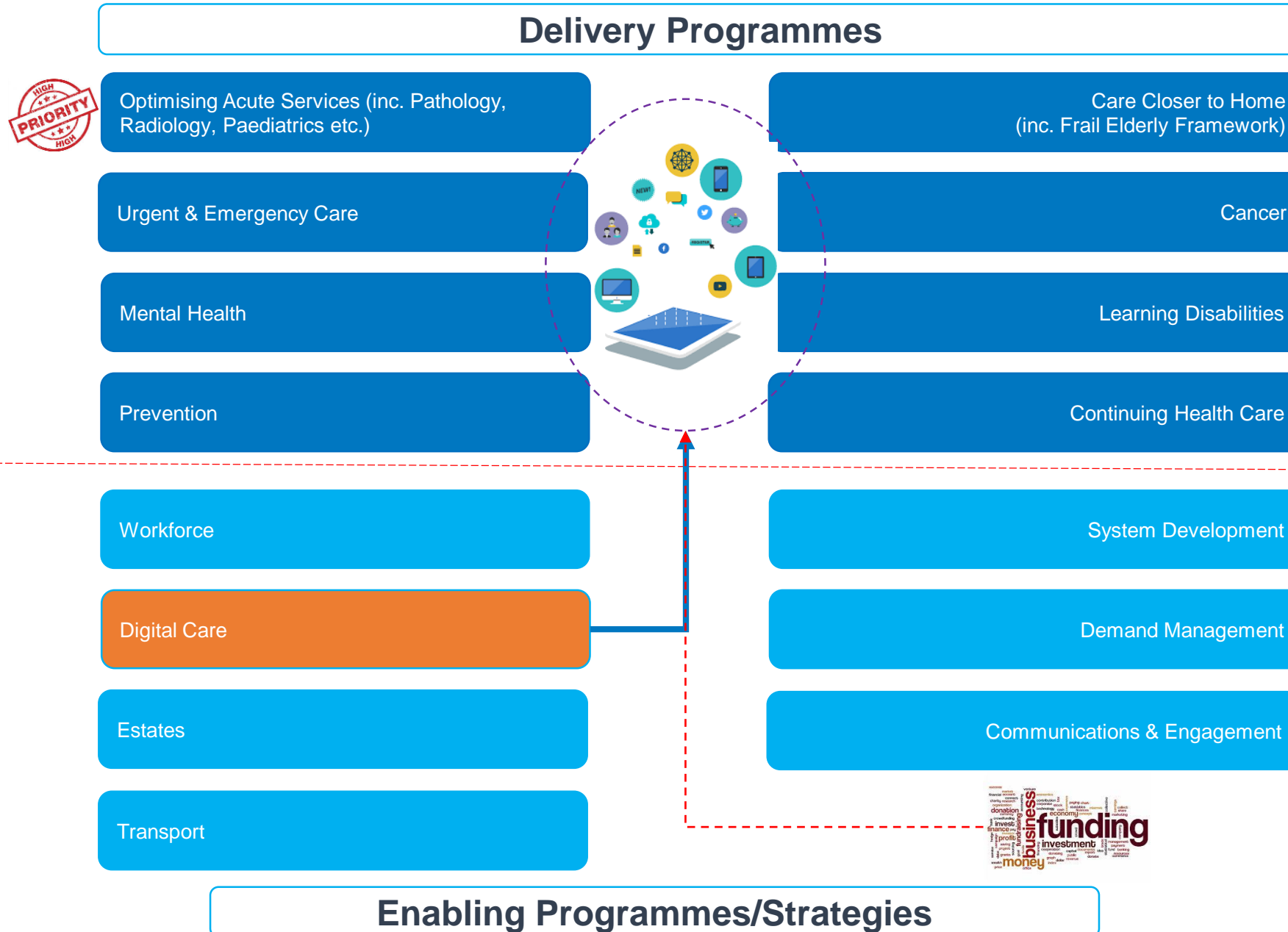
*"We need to start thinking (and acting) '<u>**system**</u>' and not just organisation"*

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NENC – ICS Programmes

Delivery Programmes

PRIORITY HIGH

Optimising Acute Services (inc. Pathology, Radiology, Paediatrics etc.)

Care Closer to Home (inc. Frail Elderly Framework)

Urgent & Emergency Care

Cancer

Mental Health

Learning Disabilities

Prevention

Continuing Health Care

Workforce

System Development

Digital Care

Demand Management

Estates

Communications & Engagement

Transport

Enabling Programmes/Strategies

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Delivery

Enid Blyton
FIVE FAMOUS LESSONS OF DIGITAL TRANSFORMATION

PERSPECTIVES

DONE

Digital transformation at scale: why the strategy is delivery

Andrew Greenway, Ben Terrett, Mike Bracken, Tom Loosemore
Foreword by Francis Maude

But this is pretty close
"*Strategy is delivery*"

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Self Service

PATIENT CHECK-IN KIOSK

Collaboration

Great North Care Record

The Hospital of Things

EPR

Clinical
Clinical
Admin

Infrastructure

Nurse Call Station

Bedside Headwall

RFID Tag & Cisco Access Point

RFID Tag

Cisco 7925G/7926G Wireless Phones

Tandberg EX90

Cisco TelePresence

Guest Wireless

Remote Physician Collaboration

Bedside Ethernet Services

Patient Monitor

Safety, security and Standardisation

Doctor's Home Office

Public Network

Private Network

Cisco HealthPresence

Personal Smart Phone

Card Reader

Guest Wireless Handheld Device

Digital Media System

Cisco Cius

Remote Clinic

FREE WIFI

"*One part of the **bigger** picture*"

Cyber Threats

Data protection impact assessment (DPIA)

Safety, security and standardisation by design

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Digital Maturity Assessment

The Digital Maturity Assessment (DMA) measures the extent to which healthcare services in England are supported by the effective use of digital technology.

The DMA, will help identify key strengths and gaps in healthcare providers' provision of digital services at the point of care and offer an initial view of the current 'baseline' position across the country. The DMA supports the National Information Board's commitment to achieving a fully interoperable health and care system.

The Digital Maturity programme worked with a number of partners including Academic Health Science Networks (AHSNs) and healthcare providers and CCGs to examine effective use of technology, with particular focus on capabilities such as digital care records, transfers of care and medicines management.
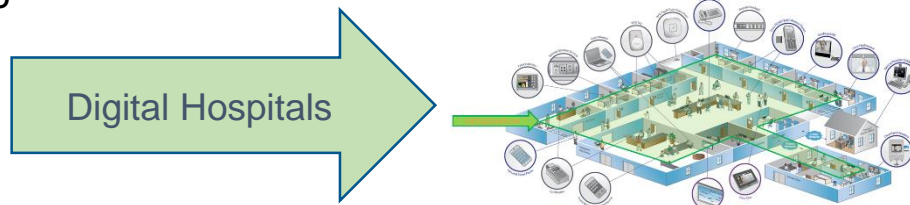
The Healthcare Information and Management Systems Society (HIMSS) standard is likely to become the vehicle for assessment, this is especially important when comparing digital maturity on an international stage.

HIMSS Analytics Continuity of Care Maturity Model

STAGE 7	Knowledge Driven Engagement for a Dynamic, Multi-vendor, Multi-organizational Interconnected Healthcare Delivery Model
STAGE 6	Closed Loop Care Coordination Across Care Team Members
STAGE 5	Community Wide Patient Record using Applied Information with Patient Engagement Focus
STAGE 4	Care Coordination based on Actionable Data using a Semantic Interoperable Patient Record
STAGE 3	Normalized Patient Record using Structural Interoperability
STAGE 2	Patient Centered Clinical Data using Basic System-to-System Exchange
STAGE 1	Basic Peer-to-Peer Data Exchange
STAGE 0	Limited to No E-communication

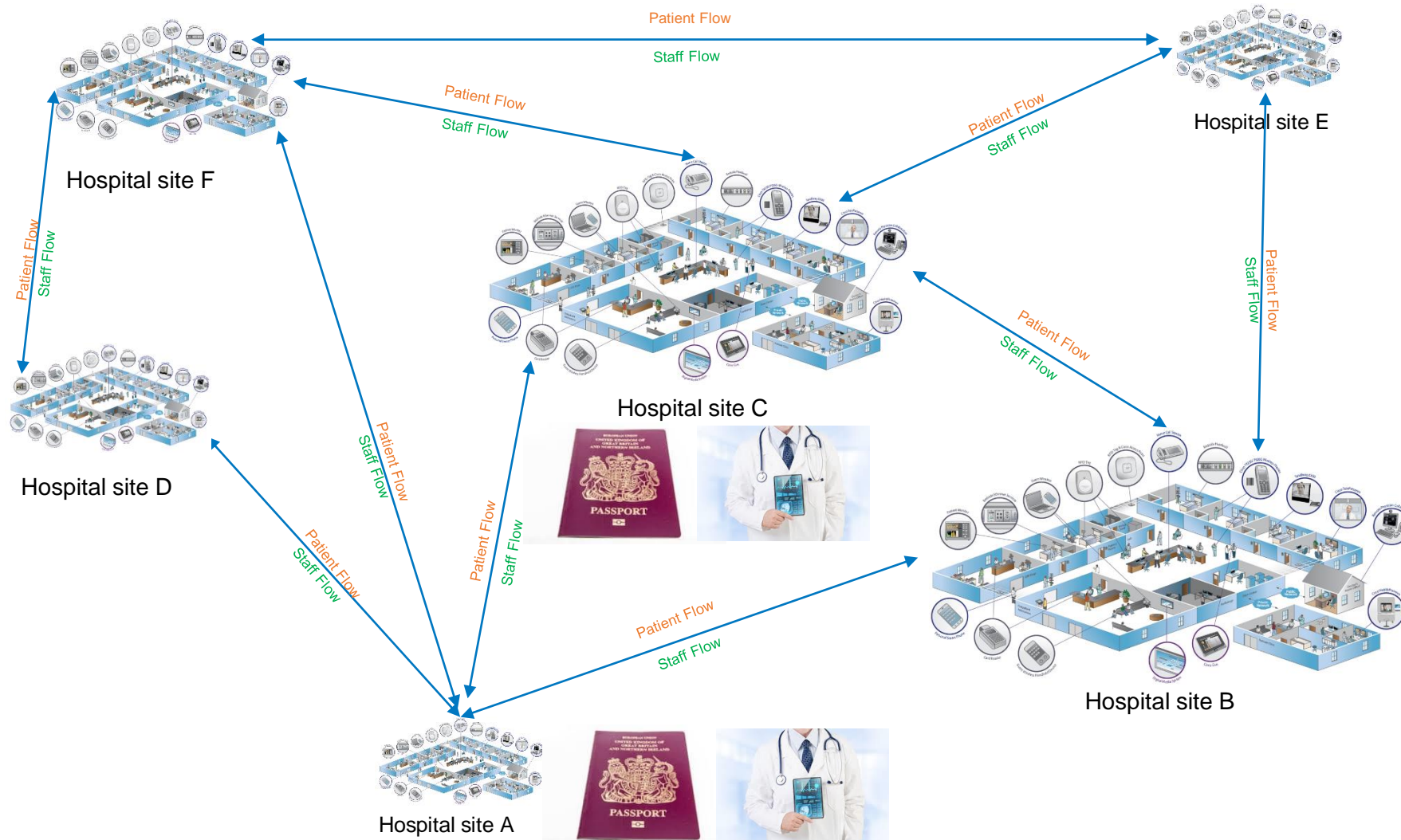**DIGITAL MATURITY SELF-ASSESSMENT** NHS England

Digital Hospitals

Digital Maturity is highly dependent on appropriate "Digital Investments"
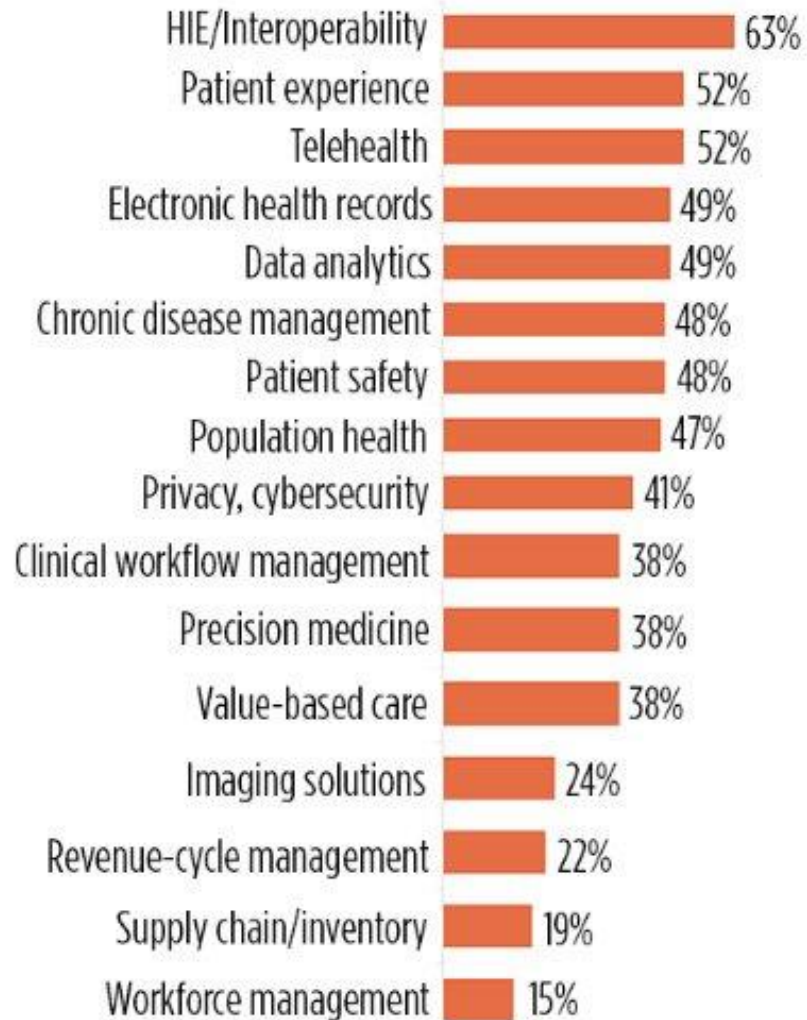
Increased digital maturity enables connected services
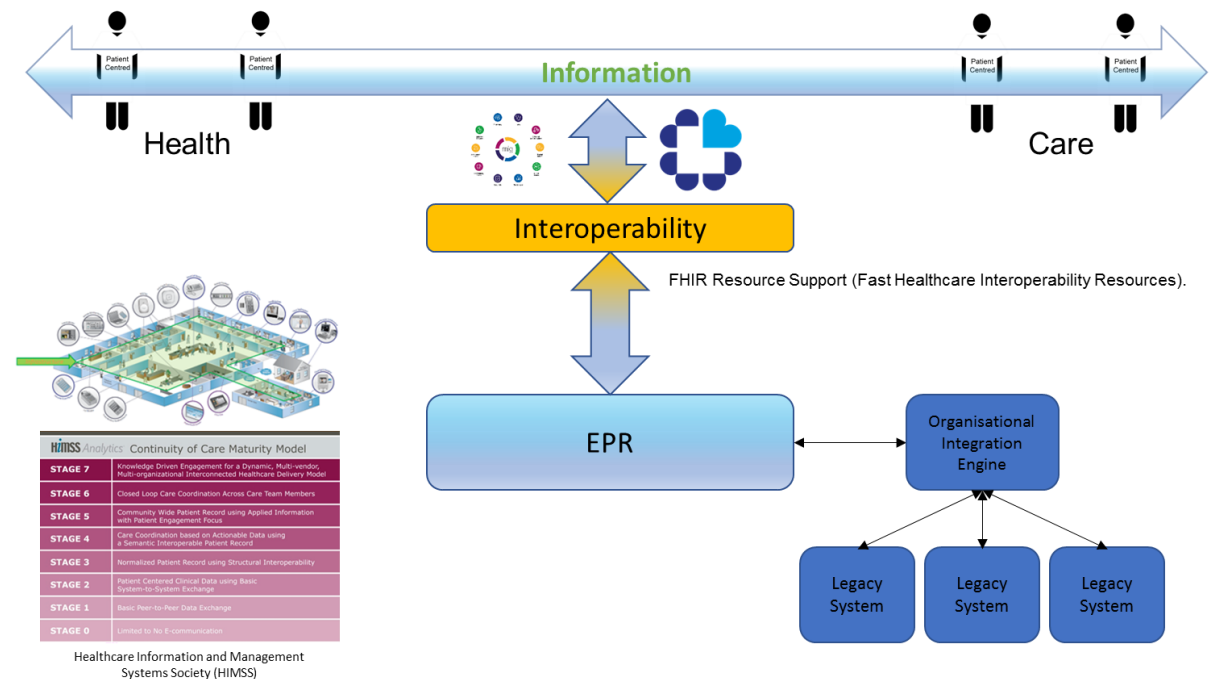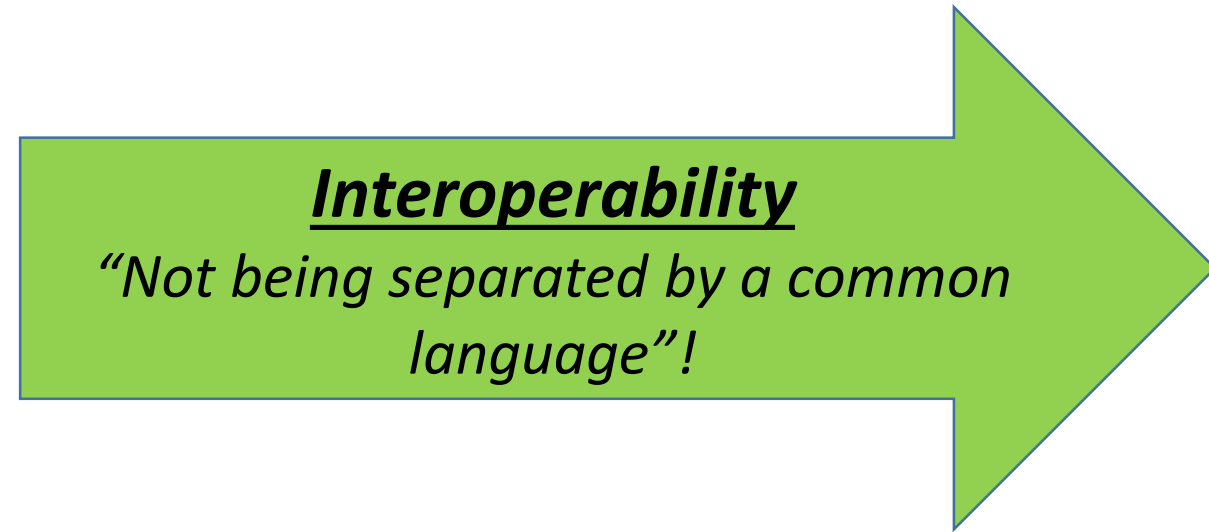

Mobile & agile workforce
"*Clinician passport*"

Patient Flow

Staff Flow

Patient Flow

Staff Flow

Patient Flow

Staff Flow

Hospital site E

Hospital site F

Patient Flow

Staff Flow

Patient Flow

Staff Flow

Patient Flow

Staff Flow

Hospital site C

Hospital site D

Patient Flow

Staff Flow

Patient Flow

Staff Flow

Patient Flow

Staff Flow

For Illustration only

Hospital site B

Hospital site A

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Where is technology innovation most needed in healthcare?

Category	Percentage
HIE/Interoperability	63%
Patient experience	52%
Telehealth	52%
Electronic health records	49%
Data analytics	49%
Chronic disease management	48%
Patient safety	48%
Population health	47%
Privacy, cybersecurity	41%
Clinical workflow management	38%
Precision medicine	38%
Value-based care	38%
Imaging solutions	24%
Revenue-cycle management	22%
Supply chain/inventory	19%
Workforce management	15%

Source: Technology Innovation in Healthcare Survey, HIMSS Media, August 2018

Interoperability
"Not being separated by a common language"!

Health

Information

Care

Interoperability

FHIR Resource Support (Fast Healthcare Interoperability Resources).

EPR

Organisational Integration Engine

Legacy System   Legacy System   Legacy System

HIMSS Analytics Continuity of Care Maturity Model

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Healthcare Information and Management Systems Society (HIMSS)

"Clinicians: You have the power to change or upgrade one piece of technology you use at work every day, what would it be?"

- Faster internet
- Access systems on any device
- User friendly interfaces
- Smarter internal communication tools
- Scrapping obsolete tech — 7%
- Better software — 8.9%
- Easier login — 10.1%
- 6.3%
- 3.8%
- 2.5%
- 7%
- 12% — Digitising paper processes
- 15.8% — Better hardware
- 26.6% — Seamless integration of patient records
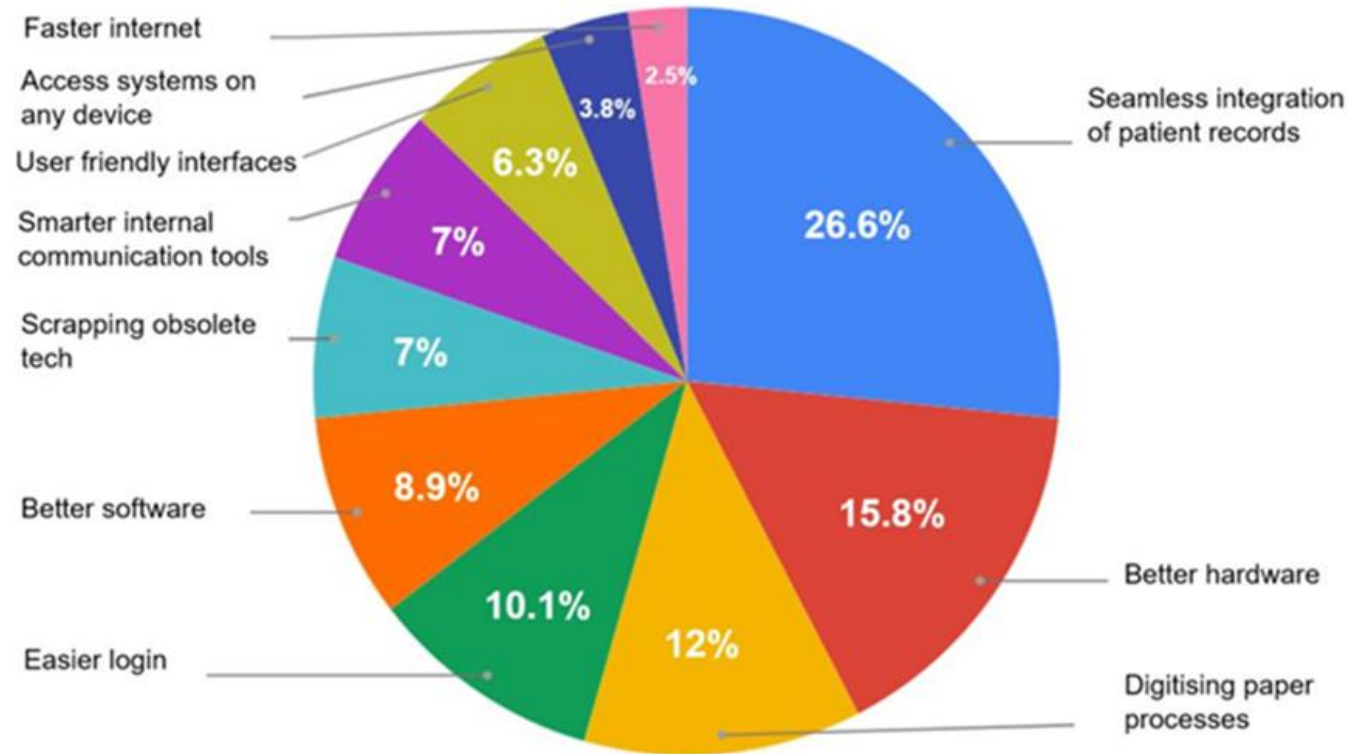
What are the key messages we have heard?

Source :   **NHSX**

HOW CAN TECHNOLOGY HELP?
SYSTEMS STANDARDS

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Transformational change requires:

People
Process
&
Technology

People

Process

Align
&
Transform

Area of weakness generally, process design to be digitally enabled…

Technology

- Engagement – System-wide campaign
- Awareness
- Commitment (CEO, BoD's)
- Clinical **Leadership** (i.e. CCIO, CNIO)
- Adoption
- Utilisation
- Security (*Data and Cyber*)
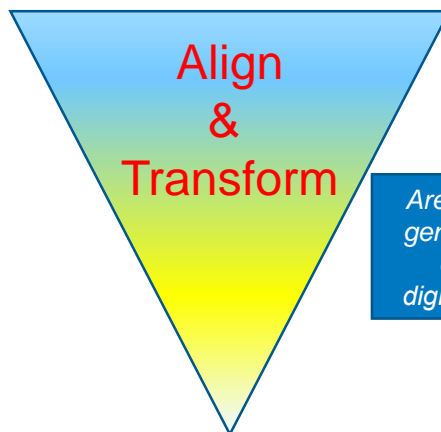
ICS/ICP – priority areas
- Current state "as is"
- Future state "to be"
- Operate
- Optimise
- Transformation
- Security (*Data and Cyber*)
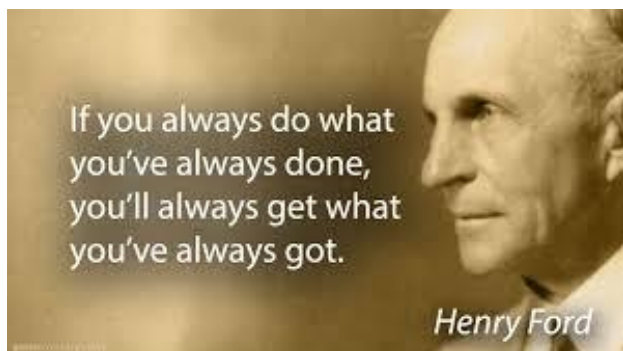
- Infrastructure
- Hardware
- Software
- Devices
- Systems
- Security (*Data and Cyber – built in*)

If you always do what you've always done, you'll always get what you've always got.

Henry Ford

Hygiene factors

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GDE Foundational Infrastructure

"… the simple truth that if we don't make it compelling for clinicians to use IT systems for their day to day work and enable them to capture accurate, timely clinical information within those systems, then most of the other opportunities within the IT strategy will be unfulfilled."

NHS England

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Digital Collaboration

Current areas of digital collaboration

Great North Care Record – Initial steps on our journey

MIG deployment.

Collaboratively delivered across

- **12 Trusts**
- **352 General Practices (100%)**
- **3.2 million citizens**

How will it affect me as a PATIENT?

How will it affect me as a HEALTH CARE PROFESSIONAL?

Your Great North Care Record provides access for health professionals to view your electronic medical records.

Read More

Can I see the health information held about me?

Optimising Acute Services
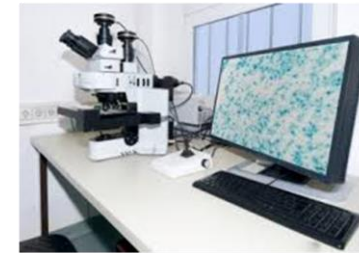
Digital Pathology

The future (near)

Radiology Collaboration & Workflow

DEEP LEARNING · MACHINE LEARNING · ARTIFICIAL INTELLIGENCE

NHS Health Call - Partnership

Community

one Darlington

Technology holds key to independent living

RECYCLE RIGHT

NHS Better Health @NHSBetterHealth

...better use of technology e.g. Skype, more care in community, nothing further than Darlington, understand workforce issues...

09/02/2017, 18:02

Health Call

Inhealthcare Limited, a UK digital health specialist, currently provides the digital infrastructure to Health Call.

Gateshead Health NHS Foundation Trust

County Durham and Darlington NHS Foundation Trust

South Tees Hospitals NHS Foundation Trust

The Newcastle Upon Tyne Hospitals NHS Foundation Trust

North Tees and Hartlepool NHS Foundation Trust

Northumbria Healthcare NHS Foundation Trust

inhealthcare

Global Digital Exemplar Programme

Global Digital Exemplars: Objectives

Global Digital Exemplar Programme

International Partnerships

Create a network of world class organisations which support high quality care with digital technology

Shared learning with other programmes and organisations

Standard system builds, template business change/deployment approaches and common operating processes
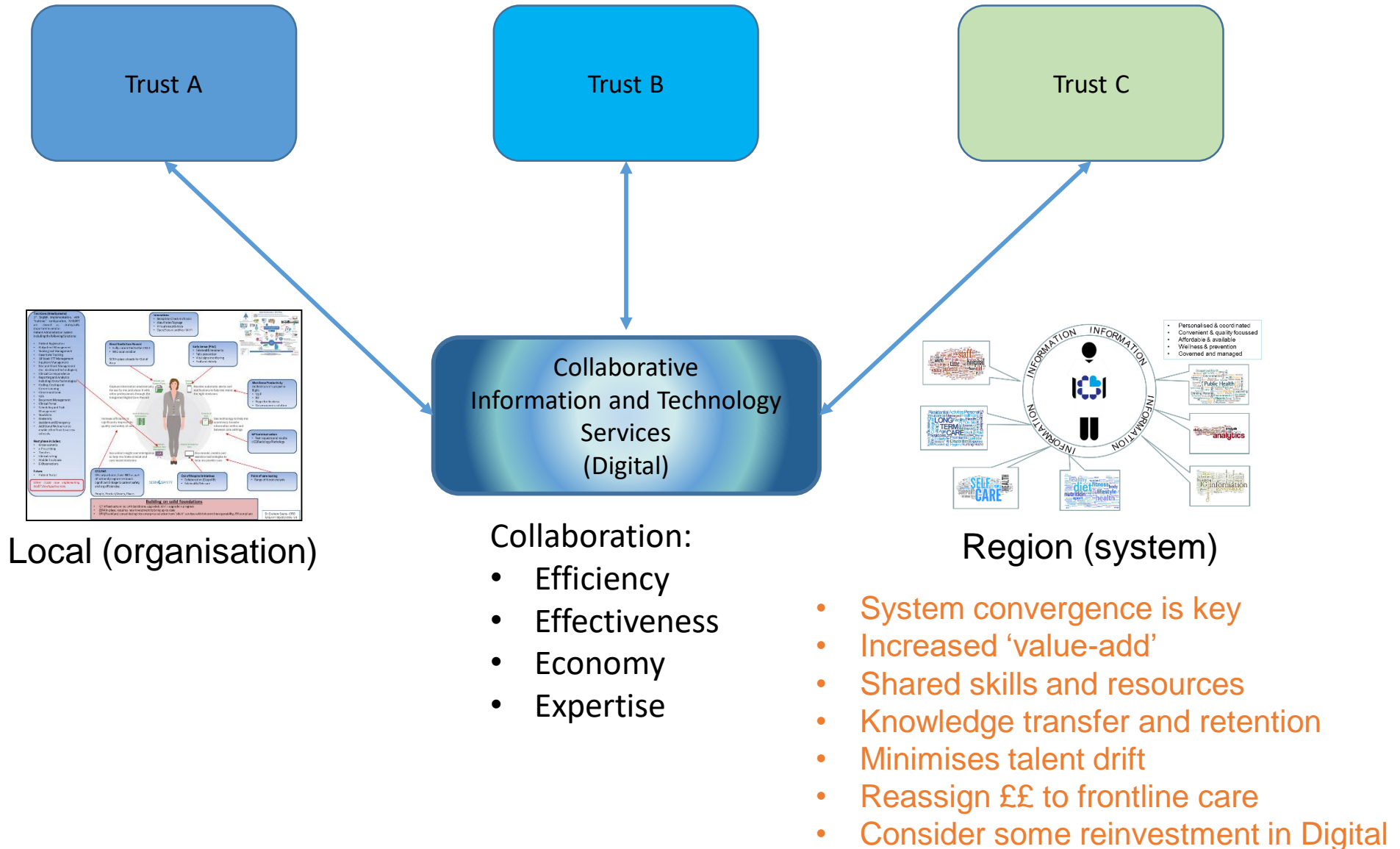
Demonstrate how to transform care with digital technology

Improved efficiency, productivity and quality through optimising working practices

4 X GDEs
4 X GDE Fast Followers
>= £50M into region

Trust A

Trust B

Trust C

Collaborative Information and Technology Services (Digital)

Local (organisation)

Region (system)

Collaboration:
- Efficiency
- Effectiveness
- Economy
- Expertise

- System convergence is key
- Increased 'value-add'
- Shared skills and resources
- Knowledge transfer and retention
- Minimises talent drift
- Reassign ££ to frontline care
- Consider some reinvestment in Digital

The future
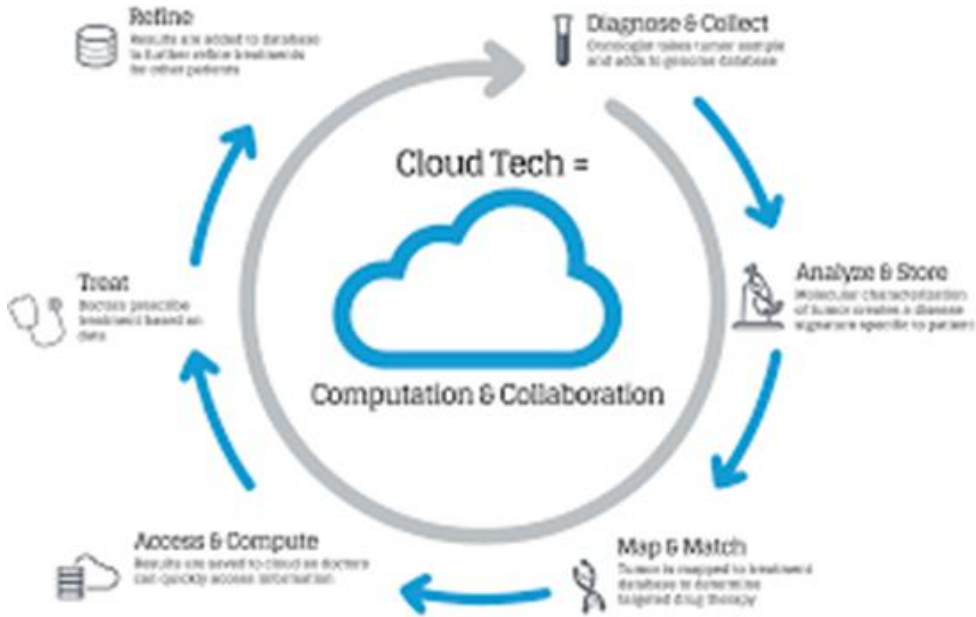
- Population Health
- Genomics
- Artificial Intelligence (AI) Machine Learning
- Robotic Process Automation (RPA)
- Precision Medicine
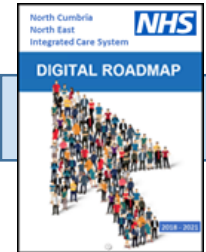- Person centred care
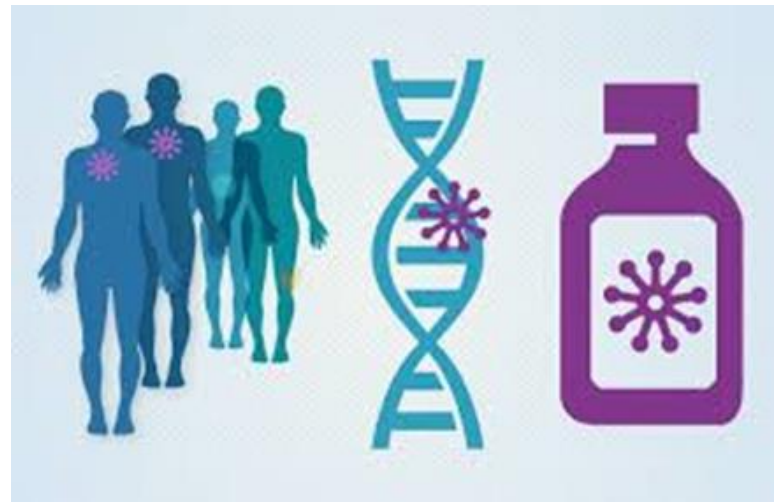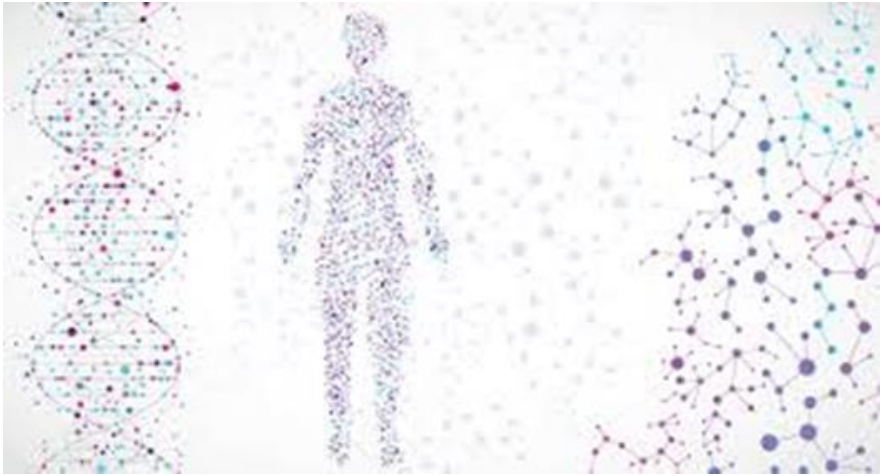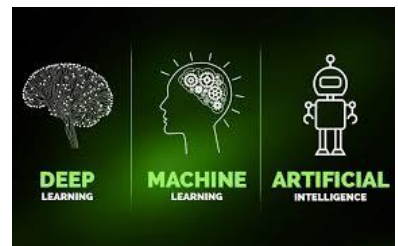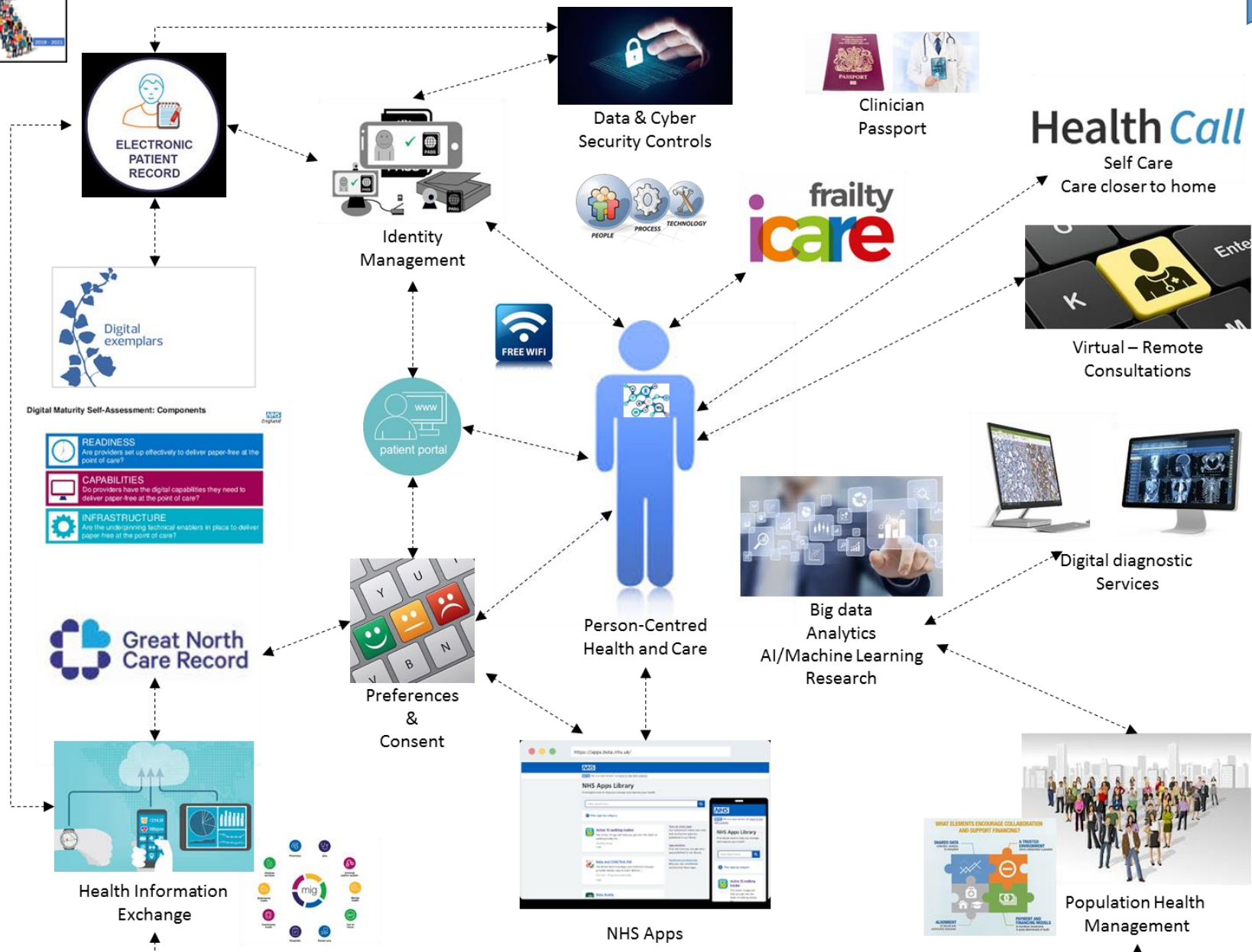

But the basic building blocks need to be in place
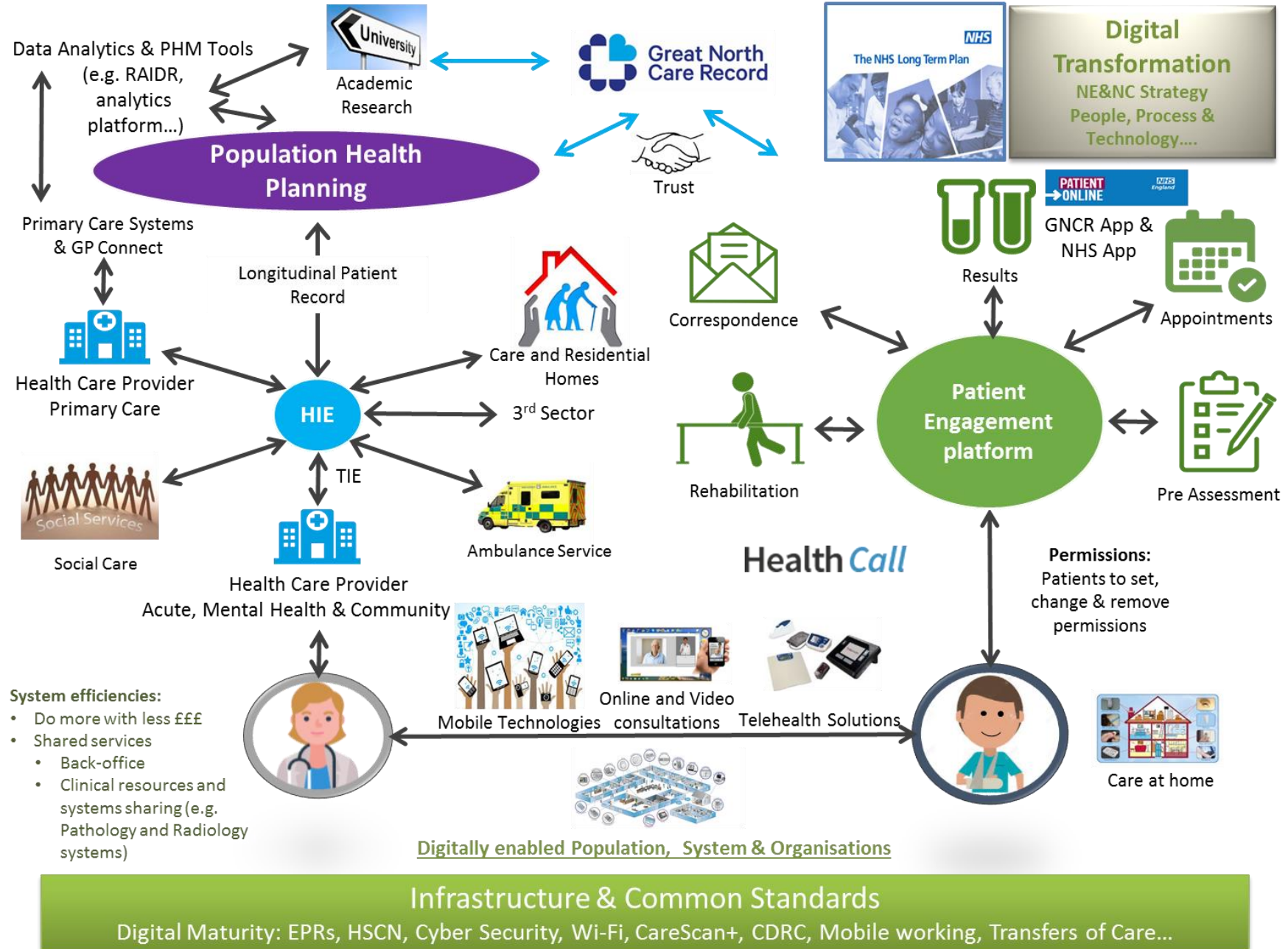
Key themes
- Provider digitisation (Maturity)
- Interoperability/Integration
  - LHCR/GNCR/Consent
- Self-care/Self Sufficiency
  - Health Call
- Big data - Research
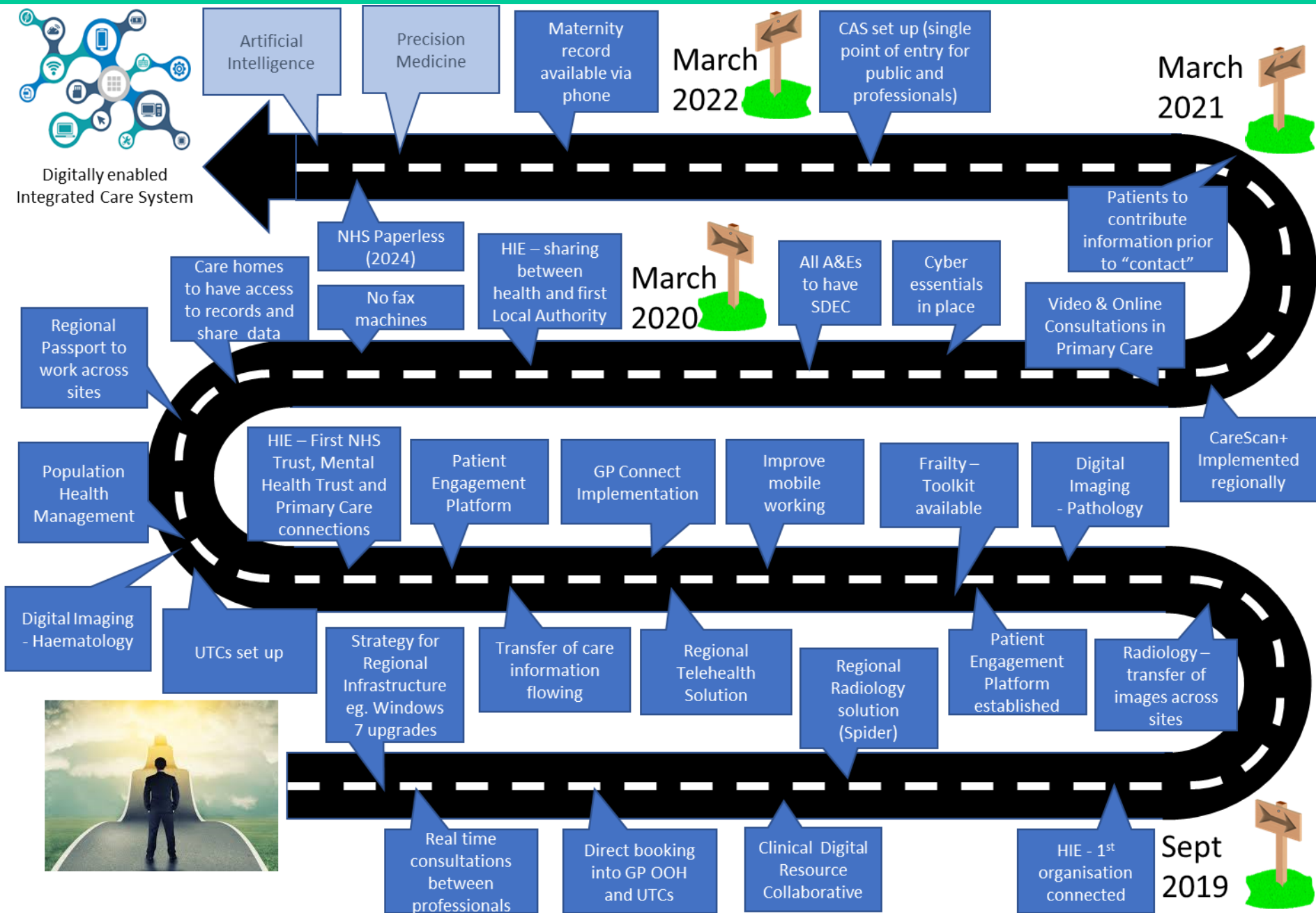- Artificial Intelligence
- Shared services

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North East North Cumbria – Digital Integrated Care

DIGITAL ROADMAP

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ELECTRONIC PATIENT RECORD

Digital exemplars

Digital Maturity Self-Assessment: Components

READINESS
Are providers set up effectively to deliver paper-free at the point of care?

CAPABILITIES
Do providers have the digital capabilities they need to deliver paper-free at the point of care?

INFRASTRUCTURE
Are the underpinning technical enablers in place to deliver paper-free at the point of care?

Identity Management

FREE WIFI

patient portal

Great North Care Record

Data & Cyber Security Controls

Clinician Passport

PEOPLE PROCESS TECHNOLOGY

frailty icare

Preferences & Consent

Person-Centred Health and Care

Big data Analytics AI/Machine Learning Research

NHS Apps Library

NHS Apps

Health Call
Self Care
Care closer to home

Virtual – Remote Consultations

Digital diagnostic Services

Population Health Management

Health Information Exchange

Our rich picture…joining it all up!

NENC – Digital Roadmap

Patient (and service user)

Self-Service
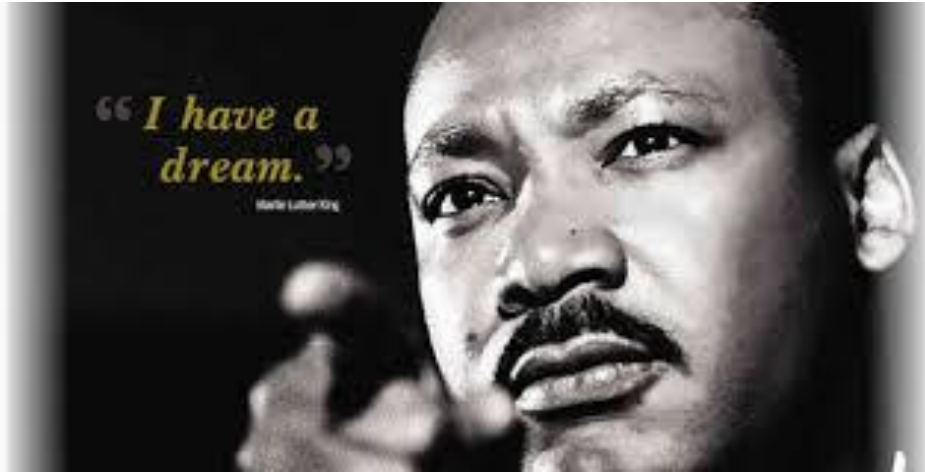**"Digital First" Channel**
Digital Front Door

System

Health Information Exchange

Patient Engagement Portal

Technology Enabled Care
HealthCall

Organisation

Digital Maturity
Infrastructure
EPR
Interoperability
Cyber/Data Security

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North East and North Cumbria

"To enable the delivery of high quality, efficient health and care services, to the people of the North East and North Cumbria through digital solutions"

From

To

With

Join our Journey
North East and North Cumbria

Thank you