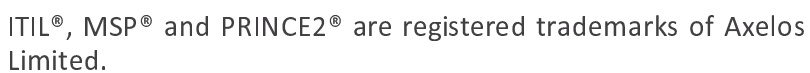




Looking after you locally



Date of Issue: January 2017

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1. Executive Summary

1.1 Trust Vision and the Role of IM&T

The vision of Norfolk Community Health and Care NHS Trust (NCH&C) is to improve the quality of people's lives, in their homes and community, by providing the best in integrated health and social care. This is summed up as *looking after you locally*.

The role of IM&T is to support and enable delivery of the Trust's vision by *connecting community care*. This strategy refresh lays out the current position and the three-year roadmap along with IM&T capabilities required for *connecting community care*. This document contains the tools NCH&C will need to be an *intelligent customer* who is able to use IM&T as a strategic asset to improve health outcomes in *looking after you locally* over the next five years.

1.2 Strategic Drivers – the Need for Change

The strategy was approved in January 2014 and has been in implementation for nearly 3 years. During this period significant progress has been made in delivery of programmes described in the roadmap. Central to this refresh is the recognition of the overarching requirements to put the delivery of care to the patient in the prime place, together with ever improving provision of access for care professionals and carers to high quality data, information and knowledge.

Two of the important national documents driving a refresh of the IM&T strategy perspective have been the Five-Year Forward View¹ and Personalised Health and Care 2020². These provide a clear direction for the delivery of patient centred care through increasingly digital services.

More recently the publication of the Wachter report (Making IT work: Harnessing the Power of Health Information Technology to Improve Care in England)³ has reinforced this requirement and provided more direction. Another national driver has been the increasing focus on data security.

Regionally the creation of 44 footprints as the basis for the development of the Local Digital Roadmaps (LDRs) has provided significant input to revision of strategy. Another element allied to this is the need for NHS Trusts to develop Sustainability and Transformation Plans (STPs).

At a local level, the Trust has developed a new Health and Care Strategy for the years 2015-2020 and this has provided significant input into this refresh.

1.3 Strategic Aims - the Three Steps

The three steps to deliver *connecting community care* remain the same and these will continue to be part of every IM&T project and service improvement. The steps or the three I's as they are known stand for: infrastructure, information and innovation.

- **Infrastructure** – putting into place the fundamental building blocks of health and care, including the IT services and physical assets needed to hold and process information
- **Information** – joining up the IT services to deliver real time, connected information to patients and staff. Ensuring the information held within NCH&C is shared appropriately with local authorities, patients and carers, and others in the local health economy
- **Innovation** – enabling new service models that are agile, aligning the Trust to respond quickly to changing factors. This includes the adoption and diffusion of appropriate technology that has a proven impact on patient health outcomes, transformation enabled by technology

This strategy uses the same steps to refresh the roadmap in order for IM&T to carry out the role of connecting community care.

1 <https://www.england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf> (20/11/2016)

2 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/384650/NIB_Report.pdf (30/11/2016)

3 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/550866/Wachter_Review_Accessible.pdf (30/11/2016)

By continuing to use the three steps of infrastructure, information and innovation the IM&T department can help realise the Trust vision of *looking after you locally*. The three I's are aligned with the 2014 Trust strategic objectives of:

- Improving quality
- Enabling our people
- Securing our future

The role of IM&T as *connecting community care* in turn supports NCH&C's refreshed values of Community, Compassion and Creativity.

1.4 The Current Position

Over the last two years there has been significant investment in IM&T infrastructure and capabilities. Improvements have been delivered across the whole range of quality of service and Trust staff satisfaction, capability, benefits realisation, and cost improvement plans. This foundation has supported NCH&C towards becoming an agile organisation, with a culture of transformation, enabled by technology and innovation.

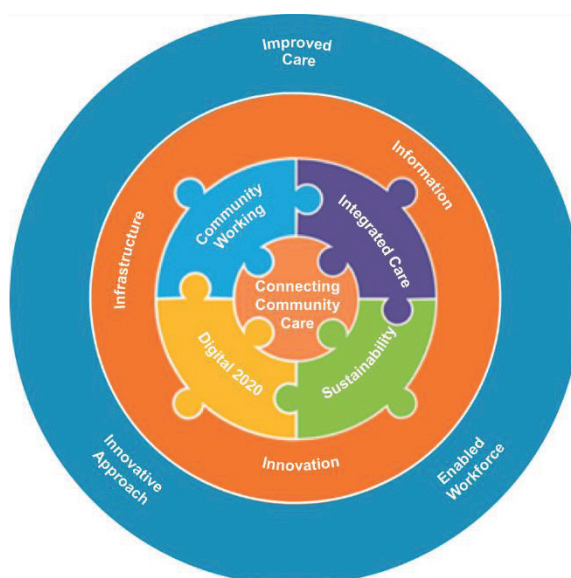
Operational improvements during 2014 to 2016 include the ongoing development and delivery of an improved communications network; risk management has been improved with an embedded risk matrix, and the transfer of the contract for Electronic Patient Record (EPR) from the national programme to a direct relationship between the supplier and the Trust.

1.5 The Future Position

NCH&C has a strong foundation for connecting community care through the IM&T department. The 2014 strategy continues with the 2012 strategic aims, as set out in section 4: the three steps of Infrastructure, Information and Innovation.

The four work streams developed in the 2014-2019 Strategy remain valid and will continue to be delivered using the three I's as summarised in Figure 1 below. The development of the Norfolk and Waveney Local Digital Roadmap has also added the perspectives of an innovative approach, enabled workforce and improved care. The roadmap for the individual projects within these work streams has been reviewed and updated and comprises a suite of some elements.

Figure 1: Connecting community care steps and work-streams



1.6 The Capabilities Needed

NCH&C's staff are the people who will implement *connecting community care*. There is an existing team of qualified and experienced IT staff, recognised for delivering IT services across both clinical and non-clinical IM&T systems. IM&T will continue to build capabilities with patients and staff by supporting them to acquire and develop the informatics skills needed to enable them to partake in IT enabled care delivery – to act as *intelligent customers*. This means supporting individuals through IT Training and more widely in using technology to improve patient wellbeing, health and social care.

There will be ongoing investment in IT Service Management to ensure the continued availability and stability of IT services, which is important to leverage IM&T as a strategic asset and enable the delivery of future healthcare. There remains a need to need to invest in essential infrastructure services based on IT industry best practice.

In the light of new strategic drivers and new capability of data collection, data quality and business intelligence have been added to address the need to transform data into information and thus enhance the ability of the organisation to service all of its stakeholders.

1.7 The Role of Assurance

The IM&T Programme Board is responsible for delivery of this strategy. This is in place to steer both the IM&T capital programme and the IM&T service development programme.

IM&T will know that *connecting community care* is being delivered by demonstrating the benefits realised, and by providing assurance that risks are being adequately managed. The IT Service Desk will continue to carry out an annual survey to report and improve the customer satisfaction of staff using the IM&T Service Desk.

Oversight for Trust Board is delegated to Finance and Performance Committee, and then IM&T Programme Board.

Throughout the lifetime of this strategy there will be an IM&T audit programme providing assurance through the Audit Committee. In addition, throughout the strategy there will be further benchmarking of capability on IT services against other NHS trusts.

2. Trust Vision and the Role of IM&T

The vision of Norfolk Community Health and Care NHS Trust (NCH&C) is to improve the quality of people's lives, in their homes and community, by providing the best in integrated health and social care. This is summed up as looking after you locally.

The role of IM&T is to support and enable delivery of the Trust's vision by connecting community care. This refreshed strategy lays out the current position and reviews the balance of the five-year roadmap along with IM&T capabilities required for connecting community care. This document contains the tools NCH&C will need to be an intelligent customer who is able to use IM&T as a

strategic asset to improve health outcomes in looking after you locally.

This document provides an update of the five-year roadmap and tools for fulfilling the IM&T role and helping NCH&C realising its vision.

This refresh of the IM&T Strategy 2014 to 2019 – Connecting Community Care has been developed in response to the Trust's Health and Care Strategy 2015-2020 and following a gap analysis conducted in May 2016, a summary of which is provided in Appendix A. The end goal for NCH&C's IM&T vision is of a connected community of health and care centred around the patient and aligned to the core values of Community, Compassion and Creativity.



3. Strategic Drivers for Change – National, Regional and Local

3.1 Refreshing the 2014-2019 IM&T Strategy

The strategy was approved in January 2014 and has been in implementation for nearly three years. During this period significant progress has been made in delivery of programmes described in the roadmap. Also during this period there have been substantial changes in the drivers of strategy at the National, Regional and Local levels.

Central to this refresh is the recognition of the overarching requirements to sharply focus on the delivery of care to the patient, together with ever improving provision of access for care professionals and carers to high quality data, information and knowledge.

Nationally, in October 2014, the Government issued its plan for the NHS, the Five Year Forward View, and in November 2014 followed this with the National Information Board document Personalised Health and Care 2020. In 2016 a key government agenda item has been data security

and this was translated to the NHS in a letter from the Care Quality Commission and the National Data Guardian⁴ outlining a number of recommendations.

Regionally a key change has been the introduction of Sustainability and Transformation footprints which have been the basis for the development of Local Digital Roadmaps (LDRs). These will direct the coordinated development of digital services in defined geographic regions. Related to this is the development of Sustainability and Transformation Plans (STPs).

At a local level in 2015 the Trust issued a new Health and Care Strategy extending to 2020 and earlier this year in line with this a gap analysis of the IM&T Strategy was conducted.

These drivers are summarised in Table 1, below.

Table 1: Strategic drivers for change – national, regional, and local

National Drivers	Regional Drivers	Local Drivers
Patient Centred Delivery of Care		
Care Professional and Carer Access to Data, Information and Knowledge		
Sustainability and Transformation Plans (STPs)		NCH&C Our Health and Care Strategy 2015-2020
Five Year Forward View	Commissioning for Quality and Innovation (CQUINs)	
Personalised Health and Care 2020	Local Digital Roadmap (LDR)	IM&T Strategy Gap Analysis
Making IT Work (the Wachter report)		NCH&C Data Quality Strategy (2016)
Data Security (CQC/NDG recommendations)		

⁴ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/534790/CQC-NDG-data-security-letter.pdf (30/11/2016)

3.2 National Drivers for Change

Two of the important National documents driving a refresh of the IM&T strategy perspective have been the Five Year Forward View and Personalised Health and Care 2020. The key elements of the latter that impact the delivery of information technology are:

- ‘**enable me to make the right health and care choices**’, which requires patients to have access to information about their health status and the choices available to them for prevention and treatment.
- ‘**give care professionals and carers access to all the data, information and knowledge they need**’.
- ‘**make the quality of care transparent**’, which requires a high level of visibility of performance and comparison through benchmarking.

More recently the publication of the Wachter report (Making IT work: Harnessing the Power of Health Information Technology to Improve Care in England) has produced a number of recommendations regarding the creation of “a fully digital NHS”. A strong theme is the concept that this programme should be **clinically led** and that there should be a national and local development of the Chief Clinical Information Officer (CCIO) role to ensure that the delivery of clinical services is at the centre of digital capability development. The Chief Clinical Information Office is usually supported by a Clinical Safety Officer who is responsible for signing off significant changes in IM&T ensuring that they are safe for patients. The role can also support the Trust’s Caldicott Guardian.

A second important theme is that of **interoperability**, where development may be locally (not nationally) led, but should be able to operate with other local and national systems.

Following a number of incidents and led by government policy, in July 2016 the Care Quality Commission and the National Data Guardian wrote to the Minister for Health publishing a review of data security in the NHS and a parallel review of healthcare data standards and compliance testing. Some elements of their recommendations which impact IM&T strategy include:

- Leadership of every organisation should demonstrate clear ownership and responsibility for data security.
- Staff should be provided with the right information, tools, training and support ... to meet their responsibilities for handling and sharing data safely.
- A redesigned IG Toolkit should embed the new standards, identify exemplar organisations to enable peer support and cascade lessons learned.
- Organisations should use an appropriate tool to identify vulnerabilities.
- Organisations should provide evidence that they are taking action to improve cyber security.

3.3 Regional Drivers for Change

In order to unite the development of digital services on a region by region basis, the government established 73 footprints and required a collaborative approach from all the providers of health and care to create a Local Digital Roadmap (LDR). The details of the LDR for Norfolk and Waveney are a work in process and will influence the delivery of the IM&T roadmap over the duration of the plan.

Related to the LDR and based on the same geography are the Sustainability and Transformation Plans (STPs) which will incorporate elements of digital services as well as other financial and operationally based initiatives.

Table 2, below illustrates the strategic alignment of the IM&T strategy with the regional drivers for change.

Table 2: Strategic alignment with STP, LDR

- STPs will drive initiatives to achieve sustainable transformation in patient experience and health outcomes over the next five years

Norfolk & Waveney LDR vision of digital technology working for patients and the public	Underpinning areas of IM&T Strategy
<ul style="list-style-type: none"> • An Enabled Workforce • An Innovative Approach • Improved Care 	<ul style="list-style-type: none"> • Community Working • Digital 2020 • Integrated Care / Sustainability

3.4 Local Drivers for Change

The most significant challenge facing the Trust strategically is the delivery of its longer-term Transformation Programme. The NHS has an effective £30 billion gap over the next five years. In Norfolk and Waveney the gap by 2020/21 is £415.6M. Along with its partners in the Norfolk and Waveney STP footprint, the Trust will need to play a key part in closing that gap.

There is also a challenge in the context of tariff reduction for community services without additional investment in community services to meet demographic pressures.

In 2015 the Trust developed a new Health and Care Strategy for the next five years. The strategic approach has at its heart the needs of patients and the requirement to improve the patient's experience of the care delivered. There is also an emphasis on maximising the use of technologies to improve the

access and convenience of patients and carers and to assist in the efficient delivery of care.

In April 2013, the last strategy was reviewed and the recommendations, although overall positive, identified areas to strengthen. Overall the independent review assessed the strategy as strong and of a good standard. Four main areas were identified to develop:

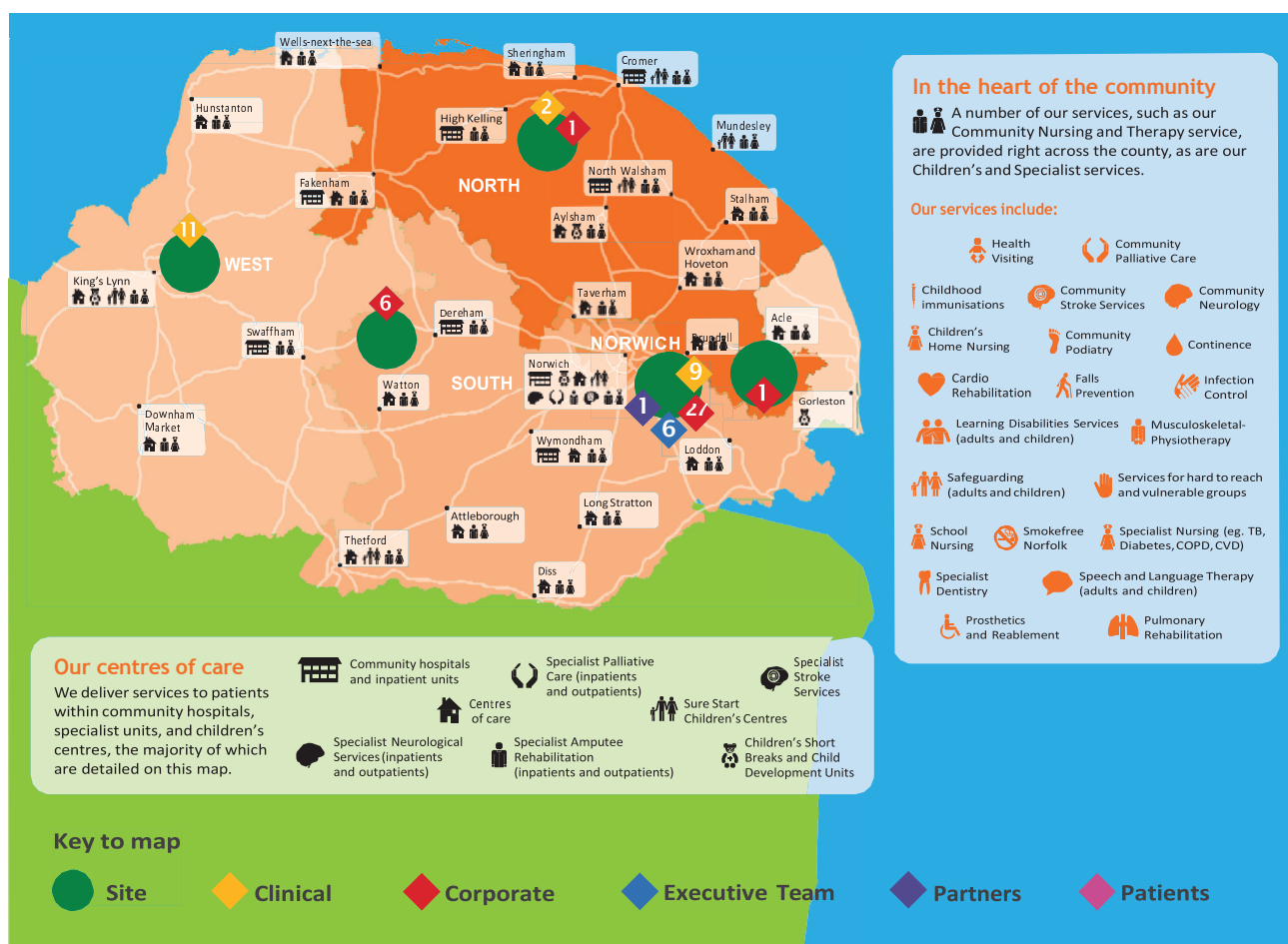
1. Consultation and engagement – views of stakeholders should be made more explicit and linked to programmes
2. Work programme – a more detailed roadmap plan should be included
3. Benefits and risks – further work is needed to identify risks and benefits associated with the programme
4. Quantify the service – a measure of the volumes of activity of the IM&T service is required

Stakeholder views are considered to be local drivers and are addressed here.

In January 2014 in developing this strategy IM&T gathered views from stakeholder staff across localities, to review the current position and inform future requirements.

Almost fifty different stakeholder engagement sessions were held with patients, staff and organisational partners. These are summarised in Figure 2 below.

Figure 2: Local stakeholder interviews across all localities



What our sixty-four different stakeholders said were four common themes which have resulted in the four new work streams of community working, integrated care, sustainability and a paperless NHS.

Figure 3, overleaf, page 13, gives a summary of the key themes which stakeholders said they wanted. These are the key themes resulting from the engagement.



- A programme for the data collection and the development of business intelligence
- The development of an information service
- Improvements in information governance

- Full details of recommendations are provided in Appendix A.

4. Strategic Aims – The Three Steps

NCH&C set out the role of IM&T in 2012 as *creating connected communities*. It had three steps for doing this: infrastructure; information; and, innovation. The steps for enabling and transforming are set out in Figure 4, below. These three steps are known as the 3 'I's and are established within NCH&C.

The 2014 strategy has developed the 2012 role into *connecting community care*. NCH&C has reviewed the 3 'I's and their relevance for delivering *connecting community care*.

The three steps remain in this interim update, as they align to the Trust's strategic priorities. Table 3 overleaf defines these.

Figure 4: Three IM&T priorities for supporting and transforming

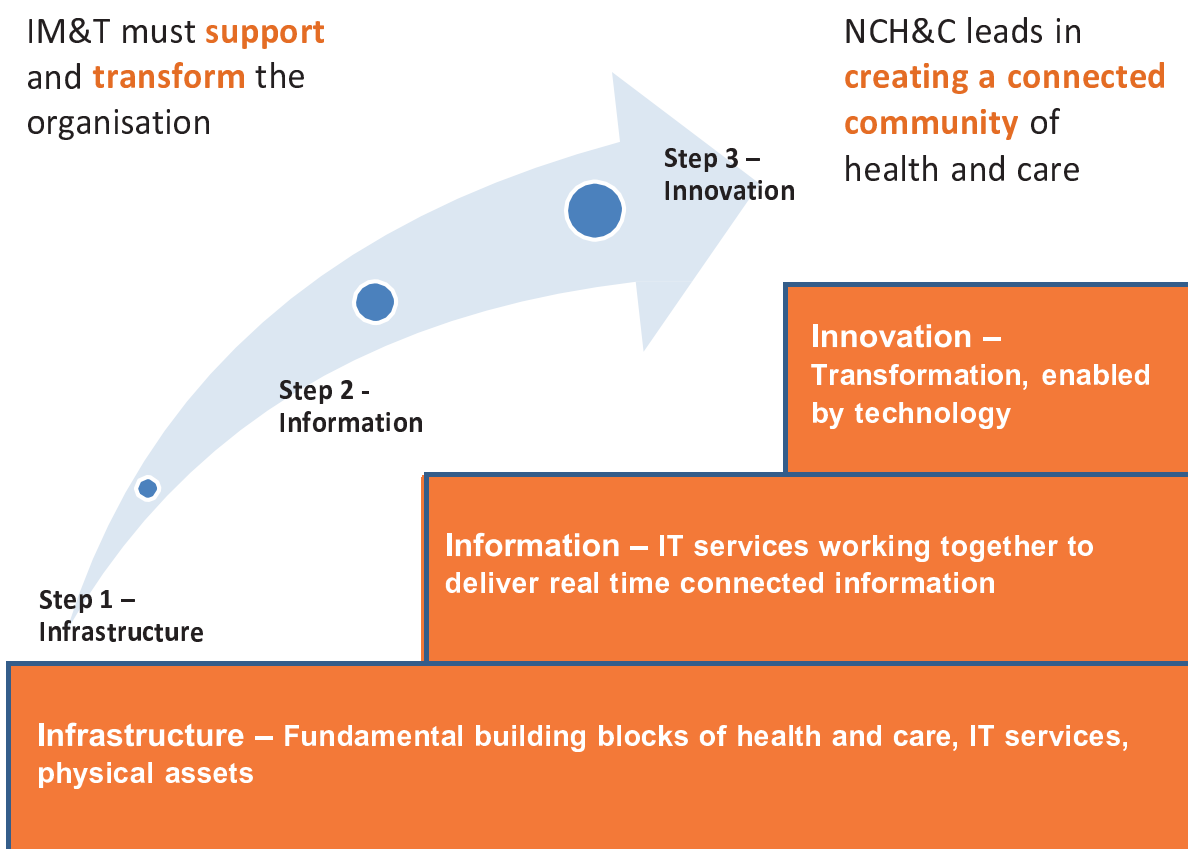


Table 3: The Trust's strategic priorities defined in September 2015

Strategic priorities	Quality indicators	Our Health and Care Strategy
1. Improving quality through:	<ul style="list-style-type: none"> ▪ Delivering harm free, clinically effective and compassionate care. ▪ Involving patients and the public and delivering excellent patient experience. ▪ Integrating delivery with social and primary care and having effective partnerships with other organisations. 	<ul style="list-style-type: none"> ▪ Delivery of quality improvement initiatives and NHS safety thermometer to support harm free care as described in the Quality Improvement Strategy. ▪ Sustain and increase NHS Friends and Family patient survey. ▪ Increased partnerships developed with key providers including third sector. ▪ Seamless patient centred pathways developed and implemented (utilising Levels of Care model)
2. Enabling our people through:	<ul style="list-style-type: none"> ▪ Inspiring staff. ▪ Empowering staff to speak out and put things right. ▪ Ensuring the right staff, with the right skills, are available to deliver compassionate care. ▪ Transforming services. ▪ Demonstrating effective leadership. 	<ul style="list-style-type: none"> ▪ Consistent and improved staff satisfaction across the organisation. ▪ Building and growing staff involvement in how care will be delivered by NCH&C e.g. sustainable models of care. ▪ Continue to deliver the Transformation programme. ▪ Workforce development including 'growing your own' staff and future leaders.
3. Securing our future through:	<ul style="list-style-type: none"> ▪ Delivering what commissioners want. ▪ Delivering a financially sustainable organisation. ▪ Investing in infrastructure. ▪ Growth. 	<ul style="list-style-type: none"> ▪ Exceeding commissioners' expectations. ▪ Demonstrate superior performance in health and social care delivery. ▪ Deliver CIP involving staff. ▪ Our Health & Care Strategy supporting growth opportunities by securing new and sustainable contracts.

The three steps of infrastructure, information and innovation are wholly aligned to NCH&C's refreshed strategic objectives, and critical to certain aspects of the delivery of the Trust's overarching objectives.

By taking the steps of infrastructure, information and innovation the IM&T role can deliver improvements in quality by *connecting community care*. This strategy will achieve this through effective engagement, communication and collaboration.

5. The Current Position

Improvements continue to be made to the service provided by IM&T since 2012 guided by the 2014-2019 IM&T Strategy. Improvements have been delivered across the whole range of quality of service and Trust staff satisfaction, capability, benefits realisation, and cost improvement plans. This foundation has supported NCH&C towards becoming an agile organisation, with a culture of transformation, enabled by technology and innovation.

Operational improvements during 2014 to 2016 included: the ongoing development and delivery of an improved communications network, which has positioned the Trust ahead of many others in its readiness for the transition from N3 to HSCN. Risk management has been improved with an embedded risk matrix, with all risks tracked and reported to IM&T Programme Board. Transfer of the contract for the Trust's EPR from the national programme to a direct relationship between the supplier and the Trust.

Ongoing staff feedback from surveys show that satisfaction with the overall IT service continues to be high and that levels of engagement in the survey from Trust staff was extremely high in 2015. The graph in figure 5 below shows the annual staff satisfaction survey results. At the time of writing the 2016 results were being collated. The rating of Excellent, Very Good and Good combined exceeds 75% in each year, reaching 80% in 2015.

Figure 5: How stakeholders measure value



Robust delivery against the strategy has delivered the benefits as detailed below.

Things in place include:

1. Process and Governance. Well-established IM&T Programme Board, clear accountability to Finance and Performance Group.
2. Service Desk. Progress as reflected by service users, with further improvements planned. Best practice now being established with training well established. Accreditation by the Service Development Institute is in process and foundation level ITIL practice has been implemented.
3. Network. Solid commercial engagement with a commercial partner to support strategic network infrastructure development. A contract is in place to support and innovative and flexible infrastructure which uses the network as a platform.
4. Mobile working. The majority of clinicians have received mobile devices enabling increased connectivity, increased productivity and improving quality of care.

In 2015/16 the current IM&T strategy delivered £71K in direct CIP and has enabled indirect savings of greater than half a million pounds across the Trust.

In 2012 NCH&C identified fifteen projects across six work streams. NCH&C has delivered the fifteen projects on time and to budget. Delivery has been brought forward through national awards and additional capital investment. These projects have been received well by its staff. Since 2012, there has been a strong focus on building the foundations of the core IM&T services and the underlying infrastructure.

A summary of the major projects being undertaken during the period is presented in Table 4 (see overleaf, page 18). This demonstrates how the delivery of IM&T's work streams realises benefits and supports the delivery of the Trust's strategic objectives.

The IM&T Programme Board has a focus on learning from projects and it is planned there will be more to come in this area going forward. Some examples of project learning include:

- A successful proof of concept took place for 1:1 video conferencing, instant messaging and presence. This will be rolled out Trust-wide in the new financial year.
- From the IT network procurement, it was learnt that organisation wide IT capabilities are needed to be a truly leading organisation. The network design and configuration has been upgraded to meet this need.

NCH&C IM&T is shortly to commission formal reviews of its Service Management function. This has included an external review commissioned by the Audit Committee; a self-administered tool; and certification by the Service Desk Institute. See Section 7.2 for more details of this.

Table 4: Projects realising benefits and supporting strategic objectives

Project(s)	NCH&C Strategic Objective	Benefit(s)	Progress
<u>Information sharing to support integration</u> <ul style="list-style-type: none"> Working groups with County Council on Information Sharing Health & Social Care Information sharing priorities identified, some changes begun, e.g., a secure link (secure VPN) between NCH&C/NCC, NCH&C/NCC, shared printing at partner sites, shared calendars, secure access to partner applications. 	Improving quality	Support integration 'ways of working'	In progress
<u>Unified Communications and Infrastructure</u> <ul style="list-style-type: none"> Telephony upgrade Telephony rollout – VOIP across 31 sites, representing up to 70% of the Estate by the end of March IT Network upgrade at 45 sites completed during 2014 Unification of fixed line and mobile services under the Vodafone One (VF1) contract – complete in 2015 Patient telephony across all in-patient units 	Securing our future	Improve communications Trust wide	In progress as plan
<u>Agile Community Working</u> <ul style="list-style-type: none"> Optimizing the mobile working solution; <ul style="list-style-type: none"> Pilot of TPP mobile working app 4G connectivity testing Hardware replacement trial including hybrids and tablets Provision of Wi-Fi; <ul style="list-style-type: none"> Expansion to corporate Wi-Fi Self-registration of patient Wi-Fi Trial of staff and guest Wi-Fi Video conferencing; <ul style="list-style-type: none"> Trust wide rollout of 1:1 video conferencing for staff 	Enabling people	Support real time data entry and optimise mobile working into community working	In progress as plan

Table 4 (continued): Projects realising benefits and supporting strategic objectives

Project(s)	NCH&C Strategic Objective	Benefit(s)	Progress
<u>Desktop Strategy</u> <ul style="list-style-type: none"> • Implementation of virtual desktop solutions across shared service sites, for shared device or those with high usage • Replacement of end of life laptops and desktops in line with 5-year Desktop Strategy • Offering of Bring Your Own Tablet service • Registration of Trust owned tablets on Mobile Device Manager • Evaluation of Trust data management requirements • Office 365 proof of concept 	Enabling people	Robust infrastructure development to support effective and efficient operational working	In progress as plan
<u>Cyber Security</u> <ul style="list-style-type: none"> • Legacy domain decommission • Migration to new domain <ul style="list-style-type: none"> • Staff and devices • Applications and infrastructure • Failover between NCH and North Walsham for file and email services 	Securing our future - sustainability	IT that is safe, secure and underpins change effectively	In progress as plan

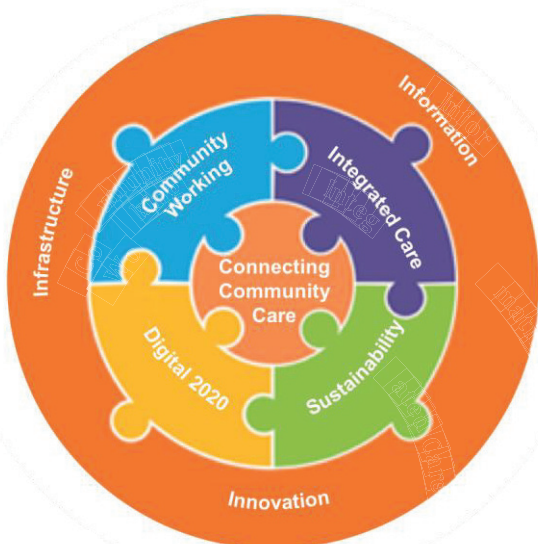
6. The Future Position

6.1 NCH&C's IM&T Work Streams

NCH&C has a strong foundation for *connecting community care* through the IM&T department. The 2014 strategy continues with the 2012 strategic aims, as set out in section 4: the three steps of infrastructure, information and innovation.

The Trust has taken the six 2012 work streams and consolidated these into a set of four work streams – Digital 2020, Community Working, Sustainability and Integrated Care – which will deliver its 2014 to 2019 strategic aims of infrastructure, information and innovation, and fulfil its role for *connecting community care*. See Figure 6, below.

Figure 6: Four work streams connecting community care



In considering the design of the work streams and content of the projects within them, Trust has taken account of the broader developments in the technology environment. This includes the advent of big data where organisations must be positioned to be able to understand and utilize information from disparate sources. The trajectory of the work streams envisaged in this strategy directs the Trust to a future state where it has the requisite connectivity and intelligence to exploit information for the benefit of our patients.

Each of the four work streams within NCH&C's IM&T programme includes a number of projects, to be delivered through to 2019. The work streams and enabling projects will deliver a set of outcomes over the coming three years.

The four IM&T work streams are set out in Table 5, overleaf, pages 21 & 22, with an explanation of the meaning of each, the objective for NCH&C, and what the Trust expects to have achieved over the five years of this strategy.

The Trust will pursue a range of funding options which will deliver early on or increase NCH&C's IM&T capability, including: NHS England regional funding; Department of Health research grants; Partnership opportunities; Commercial opportunities; joint ventures; and NHS Framework offers.



Table 5: Work streams - meaning, objective and three year 'to be'

Work Stream Area	What does this mean	Key Objective	The three year 'to be'
Digital 2020	<p>All patient and care records will be digital, real-time and interoperable by 2020.</p> <p>NHS Trusts need to demonstrate meaningful progress in the delivery of an EPR, with full implementation commencing in 2015.</p> <p>The NHS will be fully 'paperless', with digital information available across all NHS and social care services.</p>	<p>Information and communications technology will support the achievement of Digital 2020.</p> <p>Ensure that digital information can be fully available across NHS and social care services</p>	<ul style="list-style-type: none"> Improve flow and integrity of digital information, which will reduce paper reliance and support the delivery of care across the traditional professional and organisational boundaries Document management technology replaces traditional file servers and 'file and print' architecture facilitating flexible and well-governed document publishing and document sharing both to internal and external customers
Community Working	<p>Building on the mobile working and taking this to the next level, introducing a fundamentally different way of working using collaboration technology</p>	<p>Information and communications technology will support the health community to provide services which are safe, effective and efficient</p>	<ul style="list-style-type: none"> Extending and enhancing mobile working Improve clinical services by providing front-line clinicians with the communication and collaboration tools needed to help them provide the highest quality of care and improve the experience of patients and staff Facilitate cross organisational and profession working, including the support of student workforce



Table 5: Work streams - meaning, objective and three year 'to be'

Work Stream Area	What does this mean	Key Objective	The three year 'to be'
Sustainability	<p>Enabling delivery of safe, high quality, effective care by delivering an agile IM&T function which is financially sustainable and provides the right management information across estates & geographies.</p> <p>Supporting the environmental 'green' agenda and the local community providing employment locally.</p>	<p>Information and communications technology will support professionals to deliver safe, effective and high quality care at the right time and in the right place.</p>	<ul style="list-style-type: none"> Enabling patient care to be delivered and supported safely in community healthcare settings and in patient's homes Supporting the delivery of exceptional patient experience with improved clinical outcomes Improving the capture of patient, friends and family experiences of care to drive service improvement Supporting patients and carers to make informed choices Developing innovative responses to the changing requirements, stakeholder expectations and ability to redesign services to manage care more effectively with healthcare partners Embedding the '6 Cs', acting on learning from the Francis Report to develop and promote clinical effectiveness Training staff to be IT literate and use clinical systems is essential to the delivery of front-line services
Integrated Care	<p>Integration: To promote integrated care that uses technology to empower people and enable management of their healthcare and wellbeing⁵</p> <p>Working with partners in the local health economy to support and leverage their integration programmes.</p>	<p>Information and communications technology will support a person centred and coordinated approach. Working with partners in the local health economy to deliver packages of care which will be tailored to the needs and preferences of patients, their carers and family.</p>	<ul style="list-style-type: none"> Capturing and sharing information to support integrated care delivery Enabling capture of real time information to support development of leading edge services Care will follow the patient or service user across all sectors – not just health – putting the needs and experience of people at the centre of how services are organised and delivered

⁵ <http://www.2020health.org/2020health/Publications/Publications-2013/Yorkshire-Telehealth.html> (17/01/2017)

6.2 The Three-Year Project Roadmap

The projects included within the current year capital programme have progressed in line with their budgets, as shown in Appendix E. As delivery progress is made against the strategy, regular assessments will be made to identify opportunities to bring faster organisational agility.

During the course of delivery of this strategy so far, a new driver has strengthened: the requirement for ever higher levels of data security. The steps to this are contained in the CQC/NDG recommendations discussed in Section 3. The Trust has incorporated the requirements within the refreshed strategy and updated the roadmap accordingly. Key elements are raising staff awareness of the increasing number and

varied nature of attempts to penetrate security systems, and continually review levels of risk of security systems effectiveness.

A second strategic driver is the requirement to advance the state of digital maturity of organisations within the health and care environment. This is partly to enable compliance with the paperless NHS vision, but also to enable effective and efficient delivery of services where the patients and carers need them to be delivered. The Trust has assessed its internal position on this and while a number of areas are above the national average it also highlights areas for development. A chart of this is shown in Table 6 below.

Table 6: Assessment of the Trust's position relative to the National NHS ambition to be paper-free at the point of care

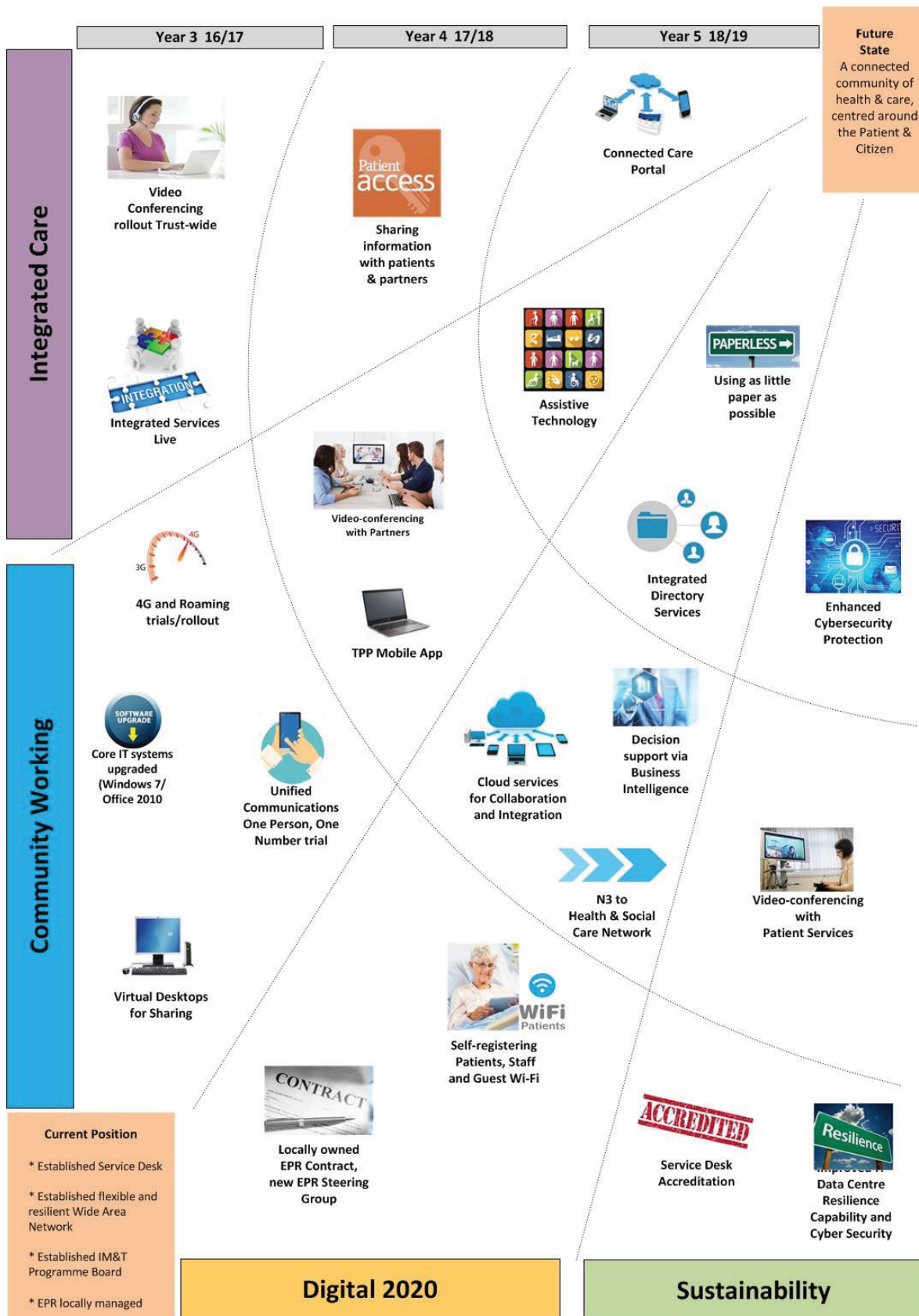
Capabilities	National Average	Footprint Average	NCHC Score	Target (end 16/17)	Target (end 17/18)	Target (end 18/19)	NCHC EPR Roadmap
Records, Assessments & Plans	44%	33%	61%	71%	81%	91%	SystemOne Inpatients
Transfers Of Care	49%	42%	58%	58%	68%	78%	Summary Care Record
Orders & Results Management	52%	33%	53%	53%	63%	73%	Pathology and Web
Medicines Management & Optimisation	29%	20%	21%	21%	31%	41%	Summary Care Record
Decision Support	36%	20%	53%	53%	63%	73%	Summary Care Record
Remote & Assistive Care	33%	20%	17%	17%	27%	37%	SystemOnline
							TPP Mobile Working App
Asset & Resource Optimisation	42%	29%	20%	20%	30%	40%	SystemOne Inpatients

	above national average
	below national average but above footprint average
	below national average and footprint average

The direction of travel of the three year plan is to enable the Trust's staff to work more efficiently and effectively in the delivery of an enhanced patient experience at the patients point of care, wherever that may be. The elements of the plan are shown graphically in Figure 7, overleaf page 24 which illustrates the four main work streams

converging on the goal of a connected community of health and care, centred on the patient and citizen.

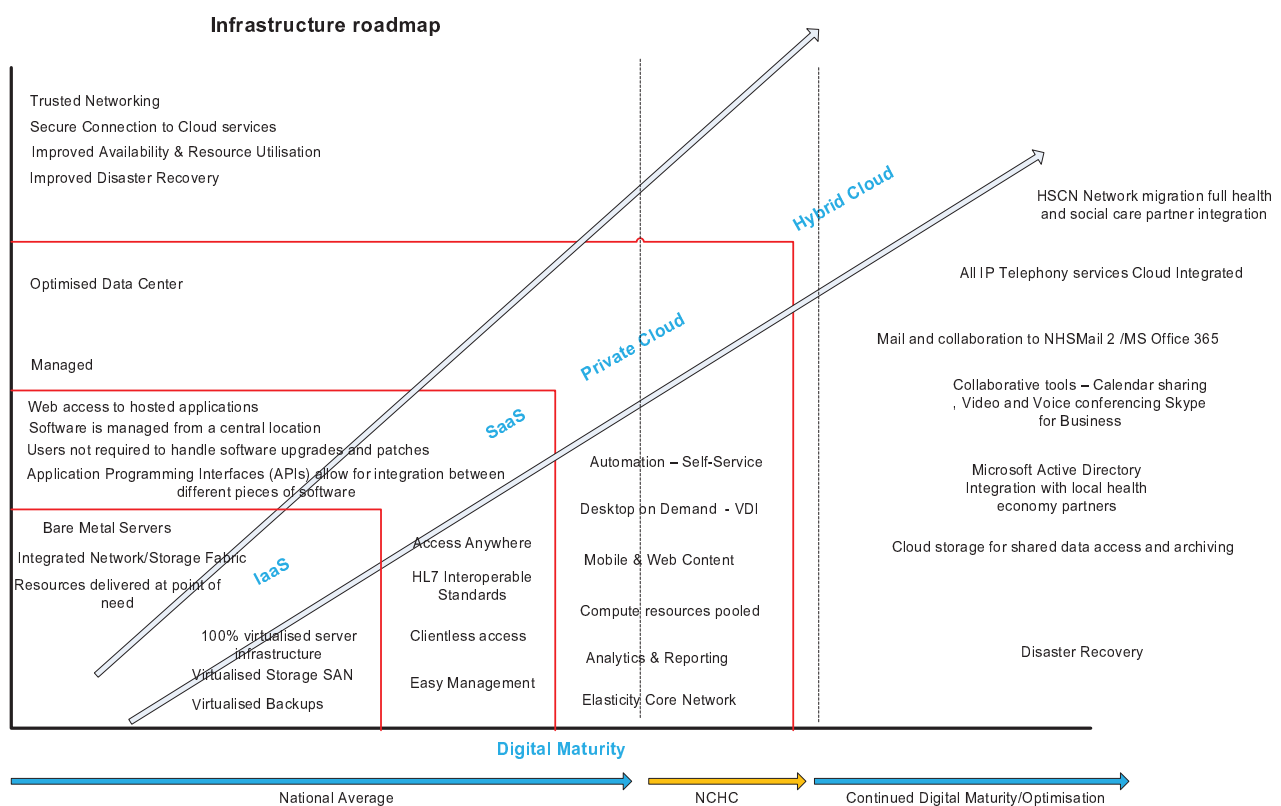
Figure 7: The three-year roadmap



It is worth noting that in terms of digital maturity, the Trust has embarked on a journey to take it from a largely premise-based to a hybrid cloud architecture. This puts it in advance of the national average and will serve as platform for the ongoing delivery of digital services.

A representation of this is shown in Figure 8 below. The ongoing development of this aspect is captured within the current three year plan.

Figure 8: The roadmap for advancing digital maturity



A detailed presentation of all projects is presented in Table 7, (on page 26). NCH&C has planned capital investment for all the supporting projects that are scheduled.

Table 7: The three-year project road

Workstream	Supporting	2016/17				2017/18				2018/19			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Outreach 2	Community Working												
Readiness for Patient Access Online	Digital 2020												
EPR Replacement	Digital 2020												
Mobile Device Management (Bring Your Own Tablet)	Integrated Care												
Network failover capability	Sustainability												
Desktop Strategy including VDI	Community Working												
IM&T Risk Audit	Sustainability												
Cloud-based Telephony Services	Community Working												
Service Desk Accreditation	Sustainability												
Decommissioning of legacy infrastructure	Sustainability												
Consolidated service catalogue	Digital 2020												
Video-conferencing Rollout	Integrated Care												
Windows 10 automated deployment capability	Sustainability												
SystmOne Mobile App Rollout	Community Working												
Health & Social Care Network (N3 replacement)	Digital 2020												
Wi-Fi Expansion including Self-Registration Patient/Guest	Integrated Care												
Mobile Working Asset Refresh	Community Working												
4G/Roaming Rollout	Community Working												
NHS Approved Secure Email and Collaboration	Digital 2020												
Data Centre Refresh	Sustainability												
Remote Access Consolidation	Sustainability												
Storage Area Network Uplift	Community Working												
Cybersecurity Enhanced Protection	Sustainability												
Agile organisation		2016/17				2017/18				2018/19			
Fixed and Agile Asset Refresh (Non-Mobile workers)	Supporting	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Business Intelligence	Sustainability												
Document Storage	Digital 2020												
Integration	Integrated Care												
Connected Care Portal	Integrated Care												
Assistive Technology	Community Working												
SystmOne Inpatients	Digital 2020												
EDMS / Paper Light	Digital 2020												
Data Centre and Disaster Recovery	Sustainability												
IT Service Management Tool for Corporate Services	Sustainability												
Integrated Directory Services with Local Health Economy Partners	Digital 2020												

7. The Capabilities Needed

7.1 Training and Organisational Development

NCH&C's staff are central to the implementation and success of *connecting community care*. The training of staff to use clinical systems and IM&T related systems is essential to the delivery of NCH&C's front-line services. The need to train an IM&T confident workforce and culture will become increasingly crucial as NCH&C moves towards implementing a paperless environment.

NCH&C has an existing team of experienced award winning training staff, recognised for delivering quality IM&T Training, across both clinical and non-clinical IM&T systems. The service provides IM&T training to staff on all aspects of their clinical or corporate business systems via a blended approach of one-to-one sessions, group or classroom based training. The service includes the production of training guides and documentation, as well as training needs analysis to support all training delivered. It will continue to equip the patients and staff with the informatics skills needed to enable them to act as *intelligent customers*, supporting individuals in using technology to improve patient wellbeing, health and social care.

The IM&T training team will make certain that a comprehensive training service is provided that ensures all staff have the appropriate knowledge and skills to use technology to retrieve, capture and analyse data from all current and future NCH&C systems securely and effectively, regardless of geographic location. The team works closely with the Trust's Organisational Development team, to align training and continuous learning programmes to those of the Quality, Innovation, Productivity and Prevention (QIPP) programme. As well as providing traditional classroom or on-site training, the IM&T training team will offer a more innovative learning experience with the use of customised eLearning tools, tailored to meet the learning needs of the patients, staff and partner organisations.

7.2 Service Management

NCH&C continues to develop its Service Management capabilities, with existing service improvement initiatives underway, including the introduction of a service catalogue, Service Level Agreements and the training of staff in the ITIL framework.

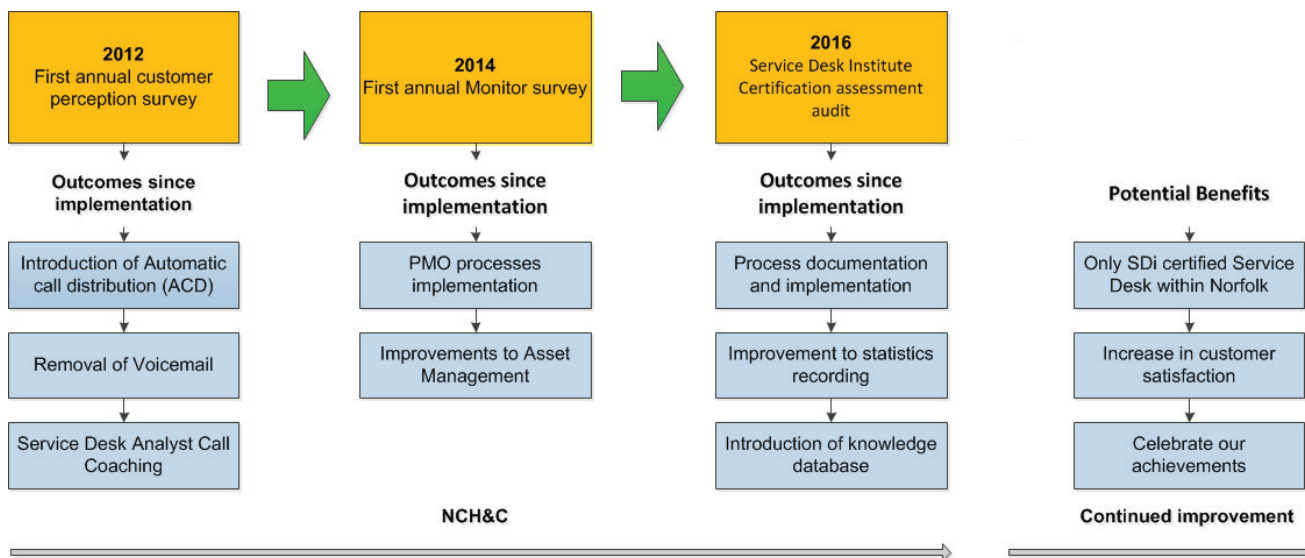
Service Management refers to the implementation and management of quality IT services focusing on the relationship with the business and customers using people, process and information technology. The goal of Service Management is to deliver safe and sustainable IT services - the essential layer - in order that the IM&T team, both managers and engineers, have the wider headroom to explore innovation, to solve problems, to add value and to look for ways to accelerate the IM&T Roadmap. It forms the wrap around the range of functions in the Programme Management Office (PMO), contributing directly and indirectly to all of the IM&T strategic work streams. A service management ethos drives efficiencies in processes and significantly helps to drive efficiencies.

NCH&C IM&T has agreed service levels to which it operates. The priority of calls is determined by impact and urgency levels. The call priority determines the response and resolution times. Current service levels are set out in Appendix B, page 47.

Over the period of the strategy implementation to date, Service Management has undergone evaluation and benchmarking from a number of sources, most recently via the Service Desk Institute (SDI). The aim to achieve SDI certification at level 2.

Figure 9 on page 28 illustrates the evaluation and benchmarking activities that have been undertaken, which reinforce the increased focus on this area (see Section 8.6).

Figure 9 Benchmarking our digital maturity and IM&T service



7.3 Technical Architecture and Service Based Delivery

This IM&T strategy outlines the adoption of a logical technology architecture and framework aligned to Service Based Delivery, based on industry best practice standards. The approach to service based delivery can be broken down into a number of service layers with supporting processes. These are set out in Appendix C.

Building on the network procurement completed in December 2013, and subsequently implemented, NCH&C will use the network as a platform for all NCH&C's services. This will provide an agile, secure infrastructure to meet Trust requirements for the next duration of the strategic plan. NCH&C will be moving from private cloud to a more hybrid cloud for IT Services.

7.4 Communications and Engagement

Clinical leadership is the key to successful IM&T projects and without it, the identified benefits cannot be realised. Each strategic programme will have an identified clinical lead. A communications and engagement plan has been developed in support of this strategy. The PMO will oversee the delivery of the communications and engagement plan.

NCH&C will consult patients on the detailed delivery of the 2014 strategy and implementation plan. NCH&C is consulting partner organisations on integrated health and social care, and the impact on integrated IM&T, during the development of this strategy.

7.5 Programme and Project Management

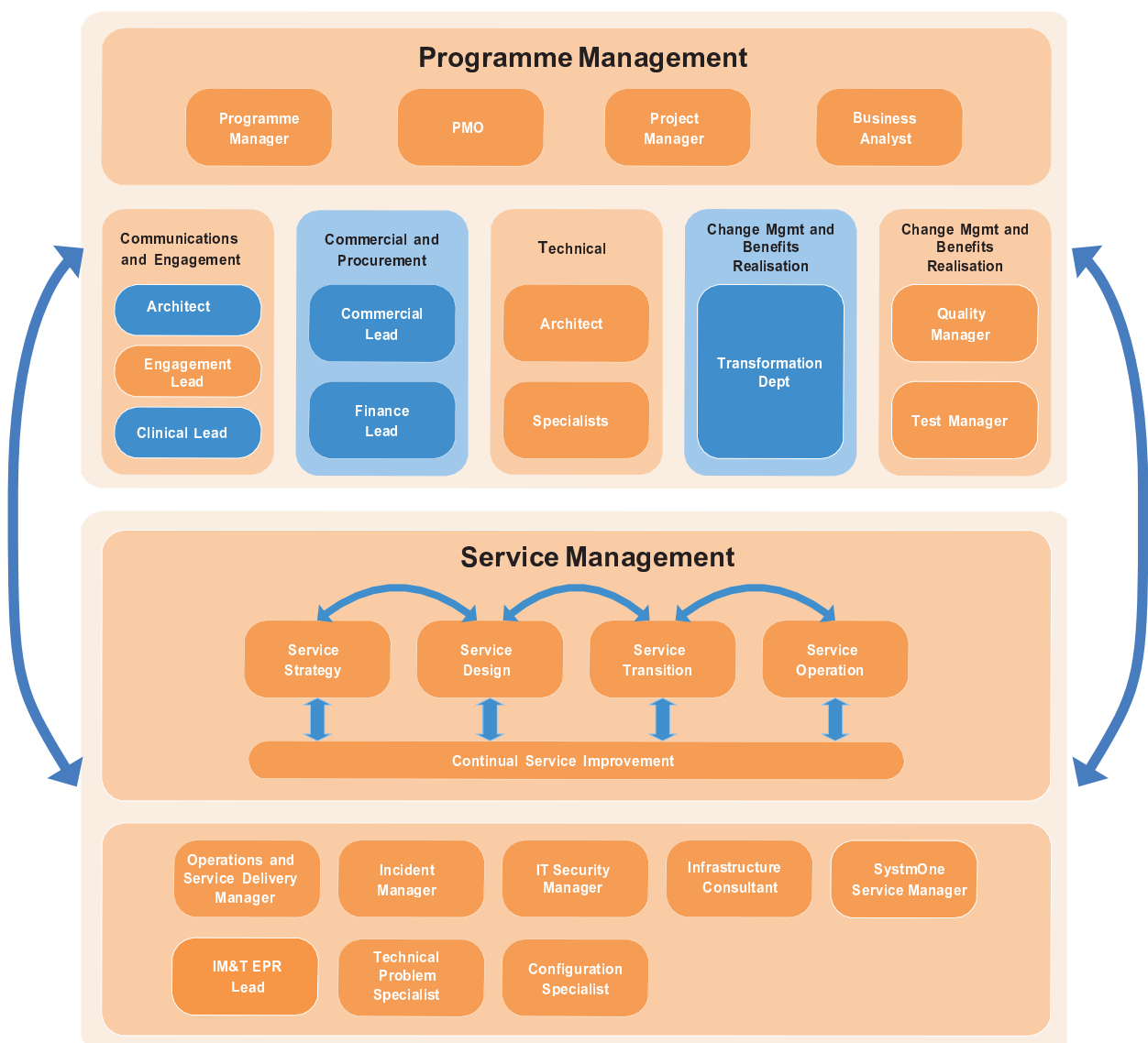
NCH&C's programme management capability (PMO) is enabling the successful delivery of the 2014-2019 IM&T Strategy *connecting community care*. The IM&T programme of work required to deliver this strategy is large, complex, resource reliant with many interdependencies.

The programme is being delivered using the Office of Government Commerce's Managing Successful Programmes (MSP) methodology and associated PRINCE2 project management methodology. MSP and PRINCE2 are used extensively within the public sector, and are

regarded as the programme and projects management standards.

Figure 10 below outlines the current Programme Functions. The diagram represents functional areas and does not equate to individual team members. More than one function may be performed by a single individual. Functions highlighted in blue are those to be performed by staff outside the IM&T Department, with those in orange performed by staff within IM&T.

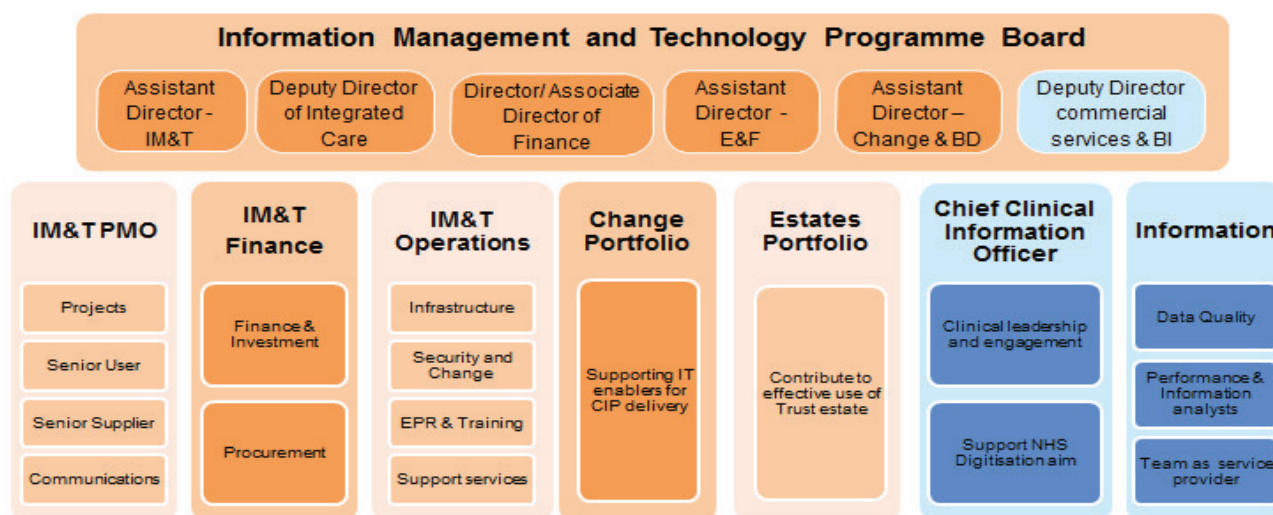
Figure 10: Programme Management and Service Management functions



The Project Management Office (PMO) manages and maintains standards for programme and project management. It is the source of documentation, guidance and metrics on the practice of programme and project management and execution. Programme Management fits into the wider governance structure, being directed by the IM&T Programme Board.

Following the recommendations of the Wachter report, the role of Chief Clinical Information Officer has been added to the overall governance structure. The revised structure is shown in Figure 11 below.

Figure 11: Delivering on time and to budget enabled by governance



7.6 Technical Expertise

The IM&T operations team includes a Technical Architect function, which works in unison with the PMO, to provide an overview of the programme from a technical perspective and to ensure that the component parts integrate to deliver the required outcomes. Many areas of technology within the programme will require niche expertise to be incorporated within the technical function. This may take the form of short term external assistance, in which case NCH&C will need to ensure a technical assurance capability is present to facilitate supplier and partner management.

7.7 Benefits Identification and Lessons Captured

Each project will identify the anticipated benefits at the project initiation stage. The project manager will engage with the project clinical lead as the benefits' owner. Benefits realised will be measured throughout the lifecycle of the project and after project closure.

At the close of the project the PMO will ensure that project lessons are captured and that learning informs projects and service management. At the close of the project the operational benefits realisation plan would commence.

7.8 Commercial and Procurement

To continue to deliver the IM&T work programme it will be necessary to renew or revise existing contracts, and also to undertake procurement activities and/or enter into commercial partnerships. NCH&C will therefore need both expert procurement and commercial management capability in order to drive best value from commercial ventures and to develop further as an *intelligent customer*.

The IM&T function will increasingly seek to procure IT services in delivery of the 2014 to 2019 strategy, and to assist has reviewed the Information and Technology Standards that are set out by NHS England for NHS interoperability. This review is based on NHS England's published Information and Technology standards. The standards represent a toolbox for the commissioning and procurement of IM&T Services, and assist NCH&C in acting as an *intelligent customer*, leveraging IM&T skills as a strategic asset, rather than as an operational resource. NCH&C's IM&T function will ensure that all new services will operate in appropriate compliance with these standards. The standards are set out in Appendix D, page 51.

7.9 An Agile and Leading Edge Organisation

IM&T is of significant and increasing importance for NCH&C. Good quality, efficient and effective patient care is increasingly dependent on having network and IM&T facilities which work. Given this, it is essential that investment into IM&T services ensures that the advantages for patients of using emerging and enabled technology are delivered using an appropriate infrastructure.

The ongoing development of the Trust's Electronic Patient Record (EPR) programme will remain one of NCH&C's major IM&T priorities over the remainder of the strategic plan. It is important to recognise that other aspects of the IM&T agenda will need to be given sufficient resources in order to move them forward, so that patients and staff can realise the full benefits of new and emerging technology.

NCH&C is setting aside resources to invest in the essential renewal of infrastructure. It will secure funding from various sources, for the accelerated delivery of capability, based on IT industry best practice. This may involve forming partnerships within the local healthcare economy to improve purchasing leverage. Funding sources include:

1. A variety of funding opportunities exist at regional level, such as grants from local universities and NHS England regional funding, including Local Education and Training Board (LETB) funding.
2. Department of Health (DH) research grants. The DH spends approximately £30 million per annum through ad-hoc research budgets (held by Departmental policy branches) and through research undertaken by arm's length bodies including Public Health England (previously known as the Health Protection Agency).
3. Charitable grants. There are many charities, which fund research and IM&T Programmes where they can make a demonstrable difference to the care of patients with specific diseases or conditions. Research Programmes and supportive enabling technology programmes attract a considerable amount of funding.
4. Partnership opportunities. Partnership opportunities will require NCH&C to engage with the market in a focused manner to ensure that appropriate partners are sought. NCH&C intends developing Strategic Supplier management capability.
5. Commercial opportunities. Commercial companies fund a great deal of research, either directly by the projects they set up to evaluate their own products, or by providing funding for investigator-led studies. The Technology Strategy Board offers funding to help businesses develop new products and services. Working with businesses, researchers, policymakers and the public sector, the Board brings together organisations to share ideas, tackle challenges and make significant technological advances.
6. Joint ventures. These are opportunities to develop Joint Commercial Ventures with industry partners.
7. NHS framework offers. There are opportunities to procure innovative and leading edge solutions and services from industry and commercial partners and then to offer these solutions through approved frameworks to the wider NHS.
8. National Funds. Opportunity to attract funding as part of the drive forward of digital maturity in the NHS. Driving Digital Maturity Fund (£4.2 billion nationally) and a Estates and Technology Transformation Fund (£1 billion nationally).

7.10 Data collection, data quality and business intelligence

As the quantity of data collected and retained grows, the processes for improving the quality of the retained data grow, a greater focus will be required. Data Quality is seen as core, non-negotiable function for the Trust. To this end the Trust will retain dedicated resource providing training, problem analysis and day to day support.

We will establish a collaborative agreement with Commissioners about data quality priorities and risk profiling, and create a relationship with NHS Digital to guarantee supportive dialogue when technical issues arise. Data Quality Maturity Index monitoring will be high on the Trust's agenda.

Ultimately data should be transformed into information and thus enable the growth of knowledge, with the aim of making better decisions and providing optimal care for our patients. Performance figures must always be supported by narrative, never reported in isolation and narrative collection centralised within the Trust. Analysts within the Trust should share and review data, information and

narratives getting the 'story straight and unambiguous'. IM&T are supporting this model by ensuring service names map seamlessly across all Corporate Teams.

To facilitate the transparency and easy communication of data and information, the development of a comprehensive business intelligence capability is required. This marries the data collection and information generation to the means of communicating it in ways that suit a wide variety of audiences who have different needs for presentation and analysis of the information. By improving the business intelligence function, NCH&C will join the top 30% of NHS Trusts using informatics to support patient care. These outcomes are shown in Table 8, below.

The full Data Quality Strategy is shown in Appendix F.

Table 8: Business intelligence outcomes¹

At least, daily data refresh	Visual dashboard summary	Potential for user data discovery
<ul style="list-style-type: none"> Near real time where possible Minimum daily refresh 	<ul style="list-style-type: none"> Clear visual summary of your needs Drill down to patient detail 	<ul style="list-style-type: none"> Tools for investigation Easy to design and run new queries

¹ NHS IT Leadership Survey 2016, Digital Health Intelligence

8. The Role of Assurance

The Trust will know that progress is being made towards *connecting community care* if the benefits are being realised, and risk is being managed and addressed. IM&T will continue to survey and report on the satisfaction of our staff. There will be a benchmark of capability and performance against other NHS Trusts and there will be an ongoing IM&T audit programme.

8.1 Patient, Staff and Partner Organisation Satisfaction

The role of the 2014-2019 IM&T Strategy is to deliver *connecting community care* for the benefit of patients, staff and partner organisations. The satisfaction of these stakeholders is a major assurance for the delivery of the strategy. Progress is being made in this (see Figure 5, page 16)

NCH&C's IM&T will continue to facilitate, report on an Annual Staff Survey for internal feedback from the wider Trust on the services provided, in order to receive a balanced view of staff's perception of the department's effectiveness.

NCH&C has undertaken one-to-one stakeholder reviews, attended clinical meetings and arranged for drop-in sessions across all localities, in the development of this strategy. It will undertake a further programme of reviews etc. during the delivery of the programme, to give ongoing assurance that the programme is delivering against NCH&C strategic objectives.

8.2 IM&T Programme Board

IM&T will be responsible for the continuing delivery of this strategy, and the delivery of *connecting community care*, on behalf of the Board. The Programme Board will ensure that the Information required by the Trust is delivered efficiently and effectively. It will continue to review benefits realised, identify cost improvement plans delivered, manage risks and risk mitigation, give quality assurance, commission benchmarking and programme audit, as part of its routine oversight for the delivery of the IM&T programme.

The IM&T Programme Board is a sub-committee of the Finance and Performance Committee. The capital component of investments are scrutinized by the Investment Group.

Throughout the lifetime of this strategy there will be an IM&T audit programme providing assurance through the Audit Committee. In addition, throughout the strategy there will be ongoing benchmarking of capability on IT services against other NHS trusts.

The Programme Board provides the overall Governance of the delivery of the strategic plan and is responsible for ensuring the Trust's compliance with Information Governance in line with the recommendations of the SIRO and the National Data Guardian.

8.3 Benefits Realisation

Project Success Criteria (PSC) are used to show that the PMO has delivered the project successfully. PSCs are measured at the end of the project and used to gauge the projects overall success. The criteria must be concise and measurable.

They must be agreed and stated by the sponsor early in the project. The Project is a success when it delivers tangible benefits into the Trust, which are closely aligned with the overall Trust strategy. The Project Manager will work with the clinical lead and/or customer, to understand the business need and ensure that the project will add tangible benefit to the business need defined by the sponsor. A project which completes the defined PSCs, but does not deliver tangible business benefit, should be challenged at the outset.

Benefits realisation is essential for the success of the Programme. NCH&C acknowledges that organisational and operational change will not occur by itself and requires a proactive, structured and comprehensive approach.

NCH&C has an existing change management and benefits realisation function through the Change Team. The responsibility for driving organisational change and benefits realisation will be shared between the IM&T Programme Board and the Transformation Programme Board.

8.4 Risk Management

The proposed IM&T work programme is large and highly complex and there is therefore a risk of delay. Delay or a reduction in planned investment which would constitute a threat to the delivery of benefits and achievement of the Trust's objectives. There are three strategic risks at the target rating:

1. Infrastructure – if the core IM&T infrastructure is not in place then transformational change cannot be delivered and core clinical informatics may be at risk.
2. Information – If the information services are not working together to deliver real time connected and high quality information with the appropriate data quality and in ways that are easy to use, then transformational change may not be delivered effectively and the quality of service may be compromised.
3. Innovation – If innovative ways of working are not implemented with appropriate controls, there is a risk innovation will not support the development of the Trust, and the Trust will not operate as an intelligent customer.

Table 9, overleaf, page 36, provides a grouping of how the strategic risks are made up, which Figure 13, page 37, illustrates the relative scoring of the individual risks by category.

8.5 Quality Assurance and Strategic Alignment

The role of the IM&T strategy is *connecting community care* in order to support the Trust in realising its vision for improving quality. The Programme Board will give assurance that the programme projects, and the programme as a whole, are delivered to an acceptable quality standard.

Quality Assurance of the IM&T programme is essential to ensure that the programme continues to be aligned with, and deliver against, the Trust's strategic business objectives via Investment Group and Finance and Performance committee. The Trust Board remains responsible for ensuring that quality is promoted and improved for patients.

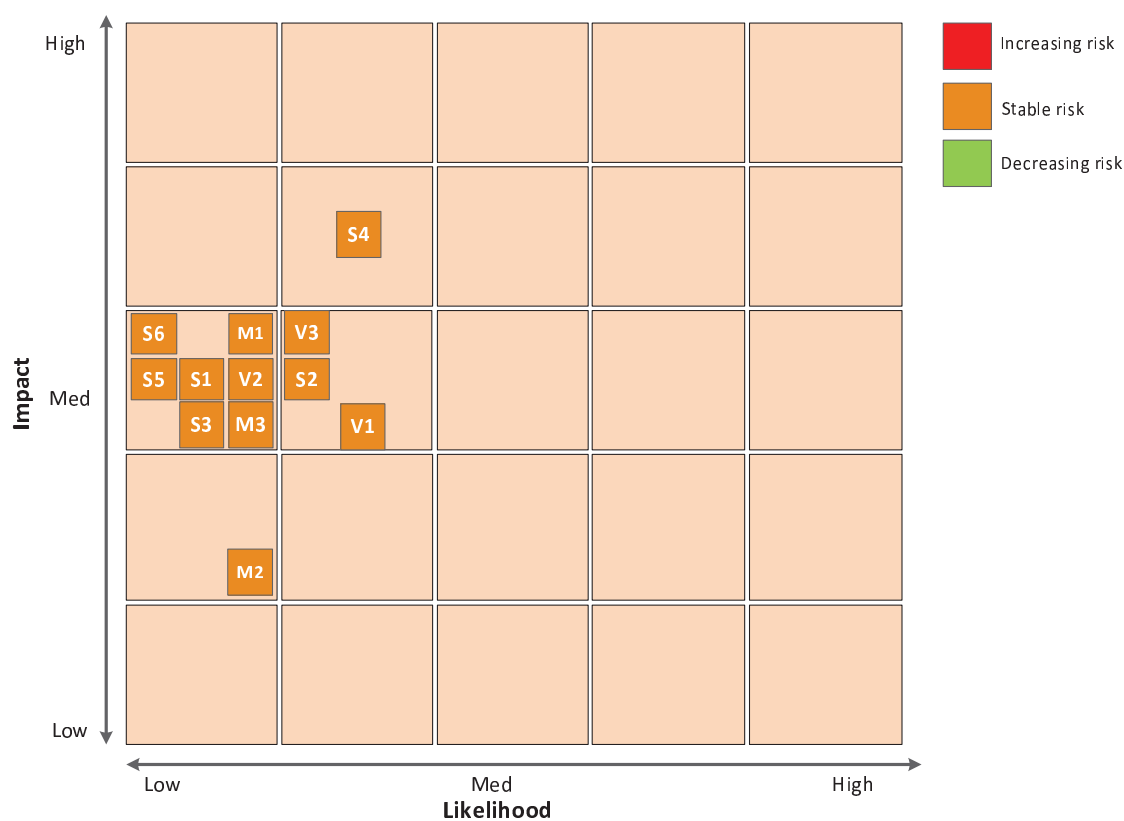
Quality Assurance will be a routine activity for the PMO. The Programme Quality Manager will take overall responsibility for quality assurance and project quality testing activities.

Each programme work stream will be reviewed against quarterly programme checkpoints. The checkpoint gateways will review each work stream as to its continued strategic, financial and operational viability.

Table 9: IM&T strategy risk register

Infrastructure	S1	Information governance breach	If adequate controls are not in place or controls are not followed then users may have the ability to access data inappropriately
	S2	Data loss	If the formal data backup or archive service is in place across only partial services, then there is a risk electronic data may be lost or unavailable when it is needed
	S3	Strategic benefit not delivered	If there is not investment in supporting infrastructure services, the strategic benefits delivered from this may not be able to be realised
	S4	Systems outage across all services	If IT assets are not protected by being up to date and having their security vulnerabilities managed, then these assets could cause an IT service outage to a clinical area or across all services
	S5	Inability to recover IT systems from disaster	If there is no testing of the current NCH&C DR Plan, then there can be no guarantee that the plan will be successful following a DR incident
	S6	Clinical services disrupted in locality	If there is a failure with the IT network links, then one or more sites may have a total loss to all IT systems/services
Information	M1	End of national contracts	If the end of the national programme for IT contracts occurs, then NCH&C could have costs for licences around the use of an Electronic Patient Record
	M2	Commercial contracts	If all IT 3rd party contracts are not reviewed, then a risk exists that 3rd parties are not complying with all NCH&C governance and confidentiality conditions
	M3	Unable to support key systems	If there is no complete list of accurate and up to date documentation for all key systems within the IT Dept., then a risk to support exists
Innovation	V1	Benefits not realised by clinical operational areas	If clinical leadership is missing from IM&T projects, then not all benefits will be delivered
	V2	IM&T strategy partially delivered	If innovative ways of winning new investment are not found and exploited, then many of the deliverables within the strategy will not be delivered and benefits will not be realised
	V3	Disparate innovation occurs	If other trust departments follow their own strategy for IT applications, those applications may not be compatible and work with new systems introduced via the IT strategy/roadmap

Figure 13: IM&T strategy risk matrix



8.6 Benchmarking

NCH&C's current IT revenue investment represents a circa 2% spend of turnover, which compares with 5% of turnover identified as typical of high performing trusts by 2002. This would indicate that the Trust would benefit from benchmarking itself against other similar NHS Trusts to discover areas of improvement.

Benchmarking is the process of comparing business processes and performance metrics to industry bests and/or best practices from other industries.

Dimensions typically measured are quality, time, and cost. Learning through benchmarking can provide assurance as to the effectiveness of existing arrangements as well as identifying improvement points. Improvements mean doing things better, faster, and cheaper in future, leading to efficiency in delivering services to the patient.

The NHS Benchmarking Network uses the following definition as a simple and accessible statement of what benchmarking is:

Benchmarking is the use of structured comparisons to help define and implement best practice.

The aims of the NHS benchmarking network are described in Table 11 overleaf page 38 and will be central to the Trust's programme.

Elements of this are already in place, such as the work completed in our Service Management capability. (see Section 7.2)

IM&T benchmarking will be further enabled using NHS England's Clinical Digital Maturity Index. This is a benchmarking tool that enables NHS Trusts to better understand how investing and effectively using, information technology can achieve better patient outcomes, reduce bureaucracy, improve patient safety and deliver efficiencies.

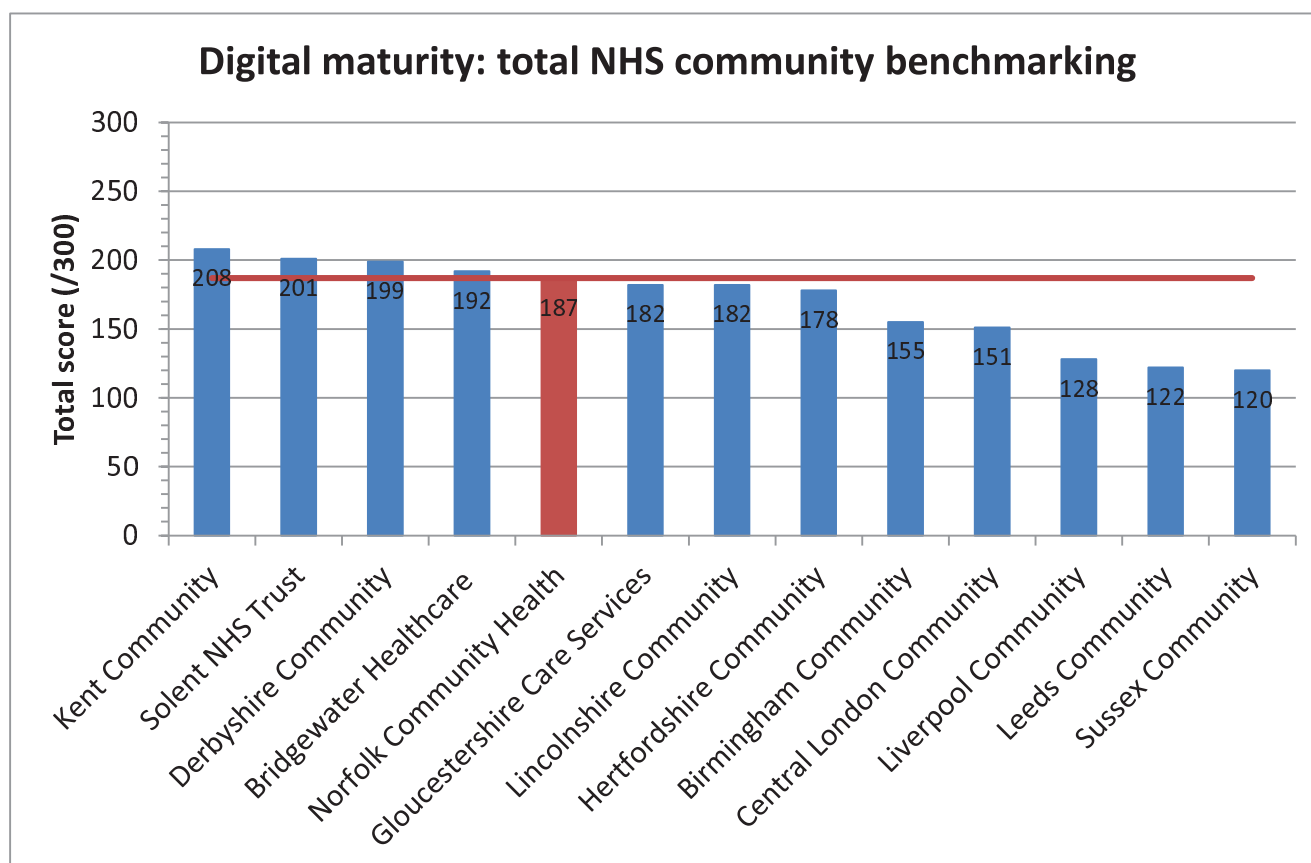
Table 11: NHS benchmarking network⁶

Data quality maturity report	Benchmark with 80% of community services	Data quality improving patient care
<ul style="list-style-type: none"> Range of Performance measures Assurance on range of measures 	<ul style="list-style-type: none"> 14 NHS trusts Developing community indications with a collective voice 	<ul style="list-style-type: none"> Implement digital 2020 Excellence in community indicators

When comparing the Trust with its peers in the Community Health arena, the digital maturity status is in the top half of the range. A comparison is shown in Figure 14 below. It

should be noted that there is a national fund of £1.3 billion to drive digital maturity in the NHS forward and the Trust has identified this funding in Section 7.9.

Figure 14: Digital maturity: total NHS community benchmarking



⁶ <http://www.nhsbenchmarking.nhs.uk/about-us.php> (17/01/2017)

8.7 IM&T Strategy Audit Programme

This refresh of the IM&T 2014-2019 strategy has been informed by an external review and gap analysis. (Appendix A)

An external review of the IM&T Service Management is planned. The IM&T Programme Board will commission a programme of external reviews, to give assurance that its IM&T strategy 2014 to 2019 is being delivered on time and to budget while meeting appropriate quality expectations.

The Audit Committee external report in November 2016 was based on self-assessment via workshops. It concluded close alignment between the desired and current risk areas, placing IM&T in the top or second quartile in all instances.

Recommendations for improvement over six months included:

- Engage with clinical staff to understand their IT needs and reporting requirements.
- Discuss changes with clinicians as they are proposed and made.
- Document and communicate DR and BCP plans across the Trust and get teams to conduct feasibility checks on them.

Over the following year included:

- Seek to reduce the reporting burden

currently placed on the Data Quality team.

- Introduce supporting governance controls over the Service Catalogue to ensure it is complete and accurate.

And over the long term included:

- Use the themes and observations from this report to inform Assurance activities to confirm and validate the points raised.
- Introduce performance reviews to consider how IT is delivering for the business.

The IM&T Programme Board via the Finance and Performance Committee will be responsible for delivery of these items as part of the strategy delivery.

9. Summary

Looking after you locally means delivering care in and near patients' homes which is customised to them. *Connecting community care* means enabling patients, carers and staff to use information to make informed decisions together.

This strategy focuses on the need to provide the means for the Trust's staff to have the environment and facilities that enable efficient working to deliver an enhanced patient experience.

The roadmap and the tools for NCH&C's IM&T function to fulfil its role of *connecting community care*. The end goal for NCH&C's IM&T vision is of a connected community of health and care centred around the patient.

This refresh of the strategy identifies the national, regional and local drivers for change. It sets out: 'The current position'; 'The future roadmap'; 'The capabilities required'; and, 'The role of assurance.

It acknowledges the achievements delivered to date by this IM&T Strategy 2014-2019 and the learning for further improvement.

It reaffirms the strategic aims for building infrastructure, information and innovation. It sets out the work streams and projects which will deliver NCH&C's IM&T programme. It identifies what is required for the strategy to be delivered, and to give internal and external assurance of delivery.

In so doing, NCH&C's IM&T strategy and programme will help NCH&C realise its vision, for improving the quality of people's lives, in their homes and community, by providing the best in integrated health and social care: *looking after you locally*.



10. Annex: List of Abbreviations

Table 12: List of abbreviations and their definitions

Abbreviation	Definition
6 Cs	Care, Compassion, Competence, Communication, Courage, Commitment
BAU	Business as usual
BS	British Standards
CEN	European Standards
CCG(s)	Clinical Commissioning Group(s)
CIP	Cost Improvement Plan
COIN	Community of Interest Network
COPD	Chronic Obstructive Pulmonary Disease
COSPD	Cabinet Office Security Policy Division
CQUIN	Commissioning for Quality and Innovation
CRS	Clinical Records Service
DaaS	Desktop as a Service
DH	Department of Health
DICOM	Digital Imaging and Communications in Medicine
DR	Disaster Recovery
EDM	Electronic Document Management
EDMS	Electronic Document Management System
EPR	Electronic Patient Record
EPS	Electronic Prescriptions Service
ESR	Electronic Staff Record
EU	European Union
GP	General Practitioner
HCP	Healthcare Professional

Table 12 (continued): List of abbreviations and their definitions

Abbreviation	Definition
HL7	Health Level 7
IaaS	Infrastructure as a Service
IBP	Integrated Business Plan
ICO	Information Commissioner's Office
ICT	Information & Communication Technology
ILM	Information Life Cycle
IL2 (Security)	Information Level 2 – Government Security Standards
IM&T	Information Management & Technology
ISB	Information Standards Board
ISMS	Information Security Management Systems
ISN	Information Standards Notice
ISO	International Standards Organisation
IT	Information Technology
ITIL	IT Infrastructure Library
ITSM	IT Service Management
LA	Local Authority
LAN	Local Area Network
LDR	Local Digital Roadmap
LETB	Local Education and Training Board
MDM	Mobile Device Management
MDOP	Microsoft Desktop Optimisation (sic) Pack
MPLS	Multiprotocol Label Switching
N3	NHS National Network
NCC	Norfolk County Council

Table 12 (continued): List of abbreviations and their definitions

Abbreviation	Definition
NCH&C	Norfolk Community Health & Care NHS Trust
NHS	National Health Service
PaaS	Platform as a Service
PC	Personal Computer
PCT	Primary Care Trust
PMO	Programme Management Office
PRINCE2	Projects in a Controlled Environment
PSC	Project Success Criteria
PSN	Public Service Network
QIPP	Quality, Innovation, Productivity, Prevention
QoS	Quality of Service
RFID	Radio Frequency Identification
SaaS	Software as a Service
SMS	Short Message Service
SQuaRE	Software product quality requirements and evaluation
STP	Sustainability and Transformation Plans
SSCM	Systems Configuration Control Manager
SSO	Single Sign-On
VOIP	Voice Over Internet Protocol
VPN	Virtual Private Network
WAN	Wide Area Network
WCAG	W3C Accessibility Guidelines

11. Appendix A: Strategy Recommendations from the Gap Analysis, May 2016

Table 13 below presents the headline recommendations of the Gap Analysis of the 2014-2019 IM&T Strategy which was conducted by High Resolution Consulting in 2016. It identifies where issues have are currently addressed or need to be addressed in the strategy.

Table 13: Strategy recommendations from the gap analysis, May 2016

Recommendation	Area
Recommendation 1: The strategy document should be updated to make more explicit the existing references for local plans for patient access to records, and any investments required in providing citizen access to care records	Section 6
Recommendation 2: The strategy should be updated to create a section focussing on the provision of paperless working and the EMR, including the existing technical and change roadmap, in which the strategy for managing local configuration can be described	Section 6
Recommendation 2: The strategy should be updated to create a section focussing on the provision of paperless working and the EMR, including the existing technical and change roadmap, in which the strategy for managing local configuration can be described	Section 7
Recommendation 3: When considering the longer term replacement of SystmOne or the extension of the current contract (after the initial term currently being contracted for), the potential for other shared record mechanisms to be used across Norfolk would need to be considered, perhaps as part of the Digital Roadmap process currently underway. The options for technical architecture are outlined in the Interoperability Handbook issued by NHS England in September 2015.	Section 7
Recommendation 4: The Trust should develop its strategy around real time data collection, clinical data collection, and the use of business intelligence tools such as data warehousing and visualisation to provide information for internal improvement initiatives and clinical quality analysis. This should be presented in a separate section to raise the profile of these aspects of data management and usage which are essential to the sustainability of the organisation.	Section 7
Recommendation 4: The Trust should develop its strategy around real time data collection, clinical data collection, and the use of business intelligence tools such as data warehousing and visualisation to provide information for internal improvement initiatives and clinical quality analysis. This should be presented in a separate section to raise the profile of these aspects of data management and usage which are essential to the sustainability of the organisation.	Section 7

Table 13 (continued): Strategy recommendations from the gap analysis, May 2016

Recommendation	Area
Recommendation 5: There should be a new section of the strategy which documents the aims and objectives of the Information service, including a vision statement addressing the organisations aspiration to improve business intelligence for internal use, developing self-service capability, and to improve communications with the CCGs. The strategy should also outline the Trust's approach to data quality, perhaps by incorporating an updated version of the Data Quality Strategy last published in May 2012, and meeting national data standards for central data submissions.	Section 7
Recommendation 6: A section of the strategy should address the work done and governance structures in place to support compliance with Information Governance guidance which will enable the Trust to sustain public trust, this should reference the national roles of SIRO and Caldicott Guardian.	Section 7
Recommendation 7: With the shift in language towards data and technology, and having moved forward significantly with infrastructure, should the strategy be updated to remove the '3Is' focus, it would be important to retain a section which outlines any strategic support for IT and Information usage innovation across the organisation, for instance route for ideas to be presented, and commitment to consider and appraise	Section 7
Recommendation 8: Section 7.1 Capabilities needed should be updated to reflect the need to deliver training and support drawing down national HSCIC best practice. Skills development across NCH&C will enable good benefits realisation from the e introduction of business intelligence functionality and publication of a wider range of standard reports.	Section 7
Recommendation 9: The Digital Nursing Strategy for nursing, midwifery and care staff will support the move to paperless working. Along with NCH&C Our Health and Care Strategy, this should be used as a key input to the updated IM&T strategy.	Pending strategy release
Recommendation 10: The section '1.7 Role of assurance' could be extended to describe any external governance put in place around the digital roadmap planning, and ongoing oversight by the CCGs	Existing theme
Recommendation 11: The IM&T department should review and update their standard project processes to incorporate the necessary activities to provide benefits capture, monitoring and realisation post implementation, in line with the business case suggested benefits	Section 7
Recommendation 12: Recommendation: The strategy should be updated to reflect any planned projects which address the deficit areas, or any actions which could be taken to improve the Trust's performance	Section 6 and 7

12. Appendix B: Service Levels

Service levels are the baseline that NCH&C can expect for delivery of all It functions covered by the Service Catalogue. All customer contacts are recorded, categorized, prioritised and managed in line with the Incident Management and Request for Service processes. The priority of a call is determined by impact and urgency.

Table 14: Impact Levels

Category	Description
Patient Care Critical	<ul style="list-style-type: none"> • 30 or more users are affected and/or not able to do their job • A 'Hub' site is down • Staff are not able to deliver services to patients
Business Critical	<ul style="list-style-type: none"> • 10-29 users are affected and/or not able to do their job • A 'Spoke' site is down • Staff member's ability to deliver services to patients is impacted
Standard	<ul style="list-style-type: none"> • Less than 10 users are affected and/or not able to do their job • Staff are able to deliver services to patients

Table 15: Urgency Levels

Category	Description
High (H)	<ul style="list-style-type: none"> • The risk to patients is high and increases rapidly over time • Staff cannot complete duties that are highly time sensitive • Several users with VIP status are affected
Medium (M)	<ul style="list-style-type: none"> • The risk to patients is moderate and increases considerably as time passes • Staff cannot complete duties that are fairly time sensitive • A single user with VIP status is affected.
Low (L)	<ul style="list-style-type: none"> • There is no or minimal risk to patients and this only increases slightly as time passes • Staff cannot complete duties but these are not time sensitive. • No VIP users are affected

Table 16: Priority Levels

		Impact		
		Patient Care Critical	Business Critical	Standard
Urgency	High	P1	P2	P3
	Medium	P2	P3	P4
	Low	P3	P4	P4

Table 17: Response and resolution times

Priority Code	Target Response Time	Target Resolution Time*
P1	30 seconds	4 hours
P2	1 hour	7.5 hours
P3	2 hours	3 working days
P4	4 hours	5 working days
Service request	1 working day	10 working days

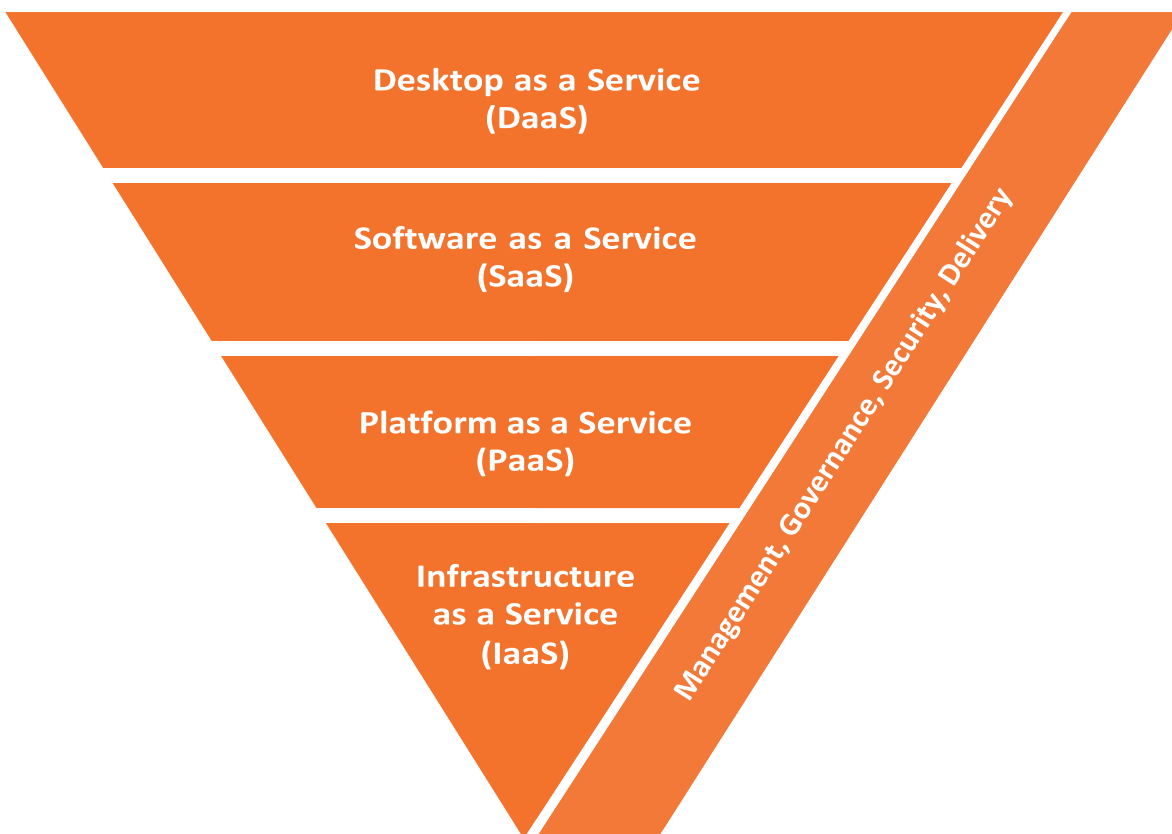
For any Priority 1 incident an IT on-call service is available. This is provided by the IM&T Infrastructure Services Team.

Tier 2/3 Management are responsible for triaging calls from NCH&C staff to assess if the incident is a Priority 1. Where an incident is deemed a Priority 1, this person should contact IT out of hours support. In the event of a Priority 1 incident, departments should consider activating their service continuity plans where appropriate.

13. Appendix C: Service Based Delivery

This IM&T strategy outlines the adoption of a logical technology architecture and framework aligned to Service Based Delivery. The approach can be broken down into a number of service layers at a high level with supporting processes as depicted below:

Figure 15: End to End IT as a service

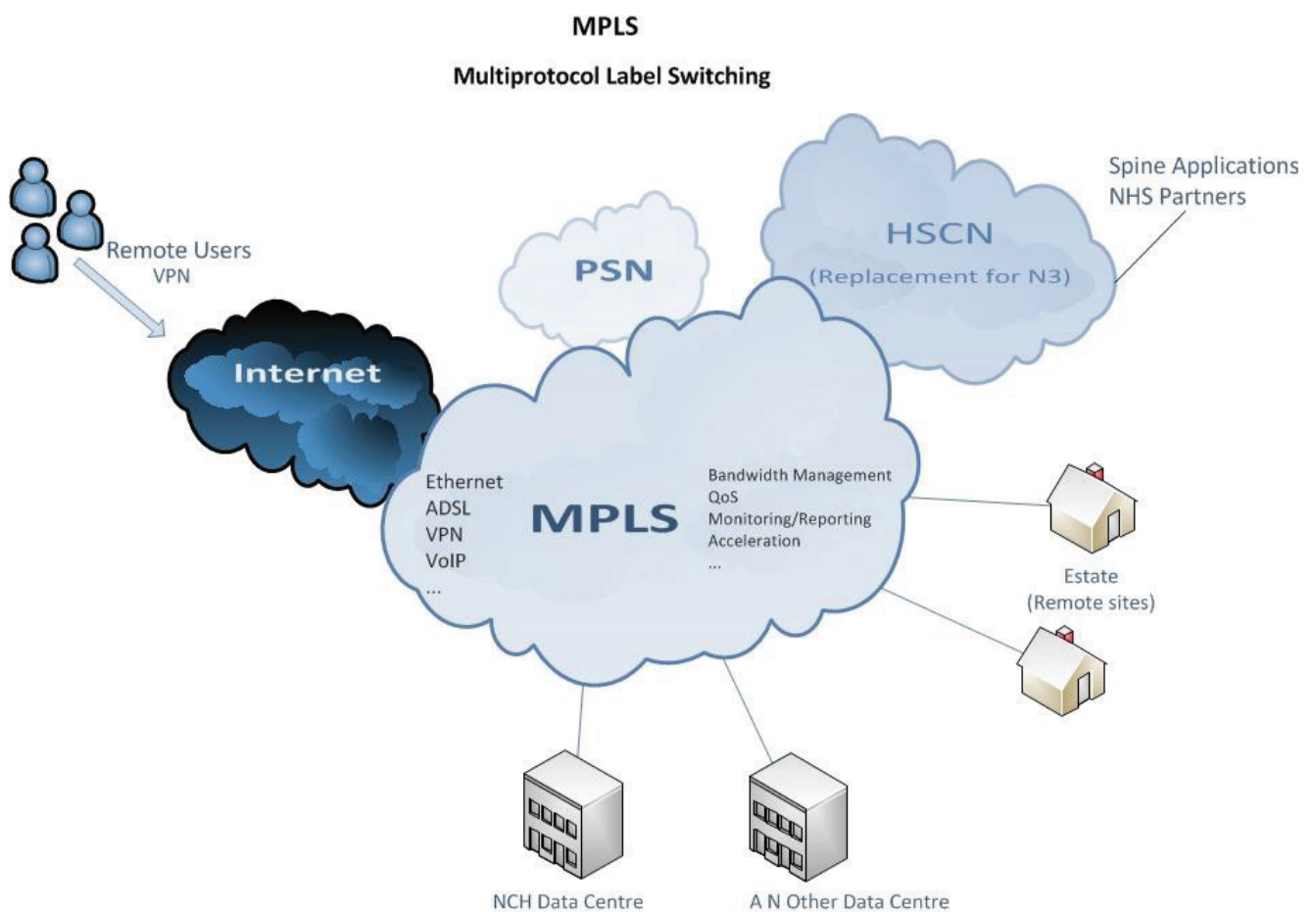


These layers represent discrete elements of the Service Based Delivery model, each enabling a fundamental component of the overarching logical architecture:

- Infrastructure as a Service (IaaS) – the physical networks, servers, storage, etc.
- Platform as a Service (PaaS) – the operating systems, database engines and common services supporting the applications
- Applications and Integration - business facing systems and interoperability between them (SaaS)
- Desktop as a Service (DaaS) – end user technology devices such as PCs, laptops, tablets, etc. and associated services through which business systems are accessed
- Management, Governance, etc. – the operational aspects that ensure the smooth running of all technology services

The Desktop technology layer will enable a wider variety of access devices to be made available to meet the needs of the staff using them. It will include the ability to connect and manage existing and future devices securely, and support innovation in working practices including management of smartphones.

Figure 16: End to end infrastructure as a service



14. Appendix D: Technical Information and Standards

Overview

The IM&T function will increasingly seek to procure IT services in delivery of the 2014 to 2019 strategy, and to assist has reviewed the Information and Technology Standards that are set out by NHS England for NHS interoperability.

Any supplier of IT systems to NCH&C will be asked to complete the IM&T Third Party Services Questionnaire. This will enable NCH&C to be assured of compatibility with current infrastructure and systems as well as ensuring compliance with standards defined for guidance here. The information this questionnaire collects will determine the technical standards defined by NHS England and NHS Digital that are needed to be complied with.

Business

To the extent that the Services operate from a branded platform, it must conform to English and Welsh NHS branding and identity requirements.

English branding and identity requirements are published at <http://www.nhsidentity.nhs.uk>

Security

Any supplier of IT systems to NCH&C should ensure that security is maintained to the level required and acknowledges that the Trust places great emphasis on the confidentiality, integrity and availability of information and consequently on the security and that suppliers adhere to the Information Security Management Systems (ISMS) plans as appropriate.

The suppliers of IT systems should be responsible for the effective performance of the ISMS and shall at all times provide a level of security which:

- is in accordance with Good Industry Practice, Law and Agreements;

- complies with the Security Policy;
- complies with at least the minimum set of security measures and standards as determined by the Security Policy Framework (Tiers 1-4) available from the Cabinet Office Security Policy Division (COSPD));
- meets any specific security threats to the ISMS; and
- complies with ISO/IEC27001 and ISO/IEC27002;
- complies with the Trust's security requirements.

Environment

The supplier of IT systems warrants that it will comply with relevant obligations of ISO 14000/14001 certification for its environmental management.

The Supplier of IT systems shall comply with relevant obligations under the Waste Electrical and Electronic Equipment Regulations 2002/96/EC.

Project Management

The Supplier of IT systems and the Trust should generally make use of PRINCE2 methodology, supplemented where appropriate by the tools and methods of the Supplier of IT system's own project management methodologies. Further details can be found at ISO 21500:2012, Guidance on Project Management.

Data Standards

The Supplier of IT systems along with NCH&C should develop, document, operate and maintain standards and procedures for ensuring the quality and integrity of all key data. These standards and procedures must be agreed with the Trust and the Supplier of IT systems shall ensure that these adhere to applicable NHS Data Standards.

Further details can be found on
<https://groups.ic.nhs.uk/SCCIDsupport/dashboard/Lists/ISCEportfolio/current.aspx>

Information Standards

- The Supplier of IT systems shall observe and keep track of NHS and industry standards as such standards evolve and emerge and are issued by the Trust. The Supplier of IT systems will endeavour to use these standards in the development of future releases of the Services.
- The Supplier of IT systems acknowledge that the definitive source for NHS and social care standards and amendments to them is the Standardisation Committee for Care Information (SCCI) (<https://groups.ic.nhs.uk/SCCIDsupport/dashboard/default.aspx>). The definitive source for British (BS), European (CEN) or International (ISO) standards and amendments to them is the British Standards Institution (www.bsigroup.co.uk).
- Unless otherwise agreed by the Trust, the Supplier of IT systems shall endeavour to comply with the latest approved versions of the standards in this Section without further charge to the Trust.
- If NCH&C requires the Supplier of IT systems to implement additional standards, then this shall be requested using the Change Control Procedure.
- The supplier must be registered with the Information Commissioners Office (ICO) with a current and up to date registration under the Data Protection Act.
- The Supplier of IT systems shall assess new and amended Trust standards as part of the requirements definition for a new release. The release definition shall detail the standards the new release will comply with and indicate where it will not.
- The Supplier of IT systems shall state the compliance of the new release with the Compliance Requirements given below.
- Should the Supplier of IT systems reasonably believe that adoption of any standard conflicts with any other obligation under this Agreement, then the Supplier of IT systems shall request direction from NCH&C.
- Any other variation from the standards must be agreed by the Trust as part of the design and development of an update to the Services. The variation must be explicitly stated and agreed by NCH&C.
- The Supplier of IT systems shall on reasonable request provide the Trust with documents showing how standards have been implemented in the provision of the Services.
- If the Trust finds that the Services do not comply with a standard where compliance has been agreed as part of the release, then this should be raised as a defect. The Supplier of IT systems shall resolve the service issue in accordance with the procedures set down in Service levels with the suppliers, however, such defects shall not form part of any calculations for service deductions or other remedies available to the Trust.
- The Supplier of IT systems should also comply with the standards stated below for the provision of the Services.
- The Supplier of IT systems should comply with Technical Standards defined by NHS England & NHS Digital including those set out by the SCCI whilst also ensuring compliance with national legislation. Further details can be found at <http://www.isb.nhs.uk/library/all>.

Table 18: NHS Connected Standards – Part 1

	Number	Title
	ISO/IEC 20000-1:2011	IT service management specification
	ISO/IEC 27001:2013	IT security management systems - requirements
	ISO/IEC 19770-1:2012	Software asset management processes
	ISO/IEC 16085:2006	Systems and software engineering. Life cycle processes
	ISO/IEC 25051:2014	Software product quality requirements and evaluation (SQuaRE)
	ISO/IEC 38500:2015	Corporate governance of information technology
Information Governance	SCCI0086	Information Governance Toolkit V13
	ISO/IEC 27001:2013	Information Security Management Systems
	ISO/IEC 27002:2013	Code of practice for information security management
	BS-ISO 15489-1:2016	Information and documentation: Records Management
NHS Number	ISB 1555	Birth Notifications
	ISB 0149-01	NHS Number for General Practice
	ISB 0149-02	NHS Number for Secondary Care
Management Systems	SCCI 0160	Clinical Risk Management: its Application in the Deployment and Use of Health IT Systems
	SCCI 0129	Clinical Risk Management: its Application in the Manufacture of Health IT Systems
	ISO 9001: 2015	Quality Management System

The Supplier of IT systems should acknowledge that the following standards are in development and the Supplier of IT systems shall endeavour to comply with the standards below where practicable once they are approved by the Information Standards Board for Health and Social Care.

Table 19: NHS Connected Standards – Part 2

	Number	Title
	ISB 0090	NHS Postcode Directory
	BS7666:2006	Address
	ISO 3166-1:2006	Codes for the representation of names of countries and their subdivisions. Country codes
	ISO 19115:2005	Geographic information. Metadata
	ISO 6709:2009	Standard Representation for Geographic Point Location by Coordinates
Information Governance	ISB 1500	Common User Interface - Address Input and Display
	ISB 1502	Common User Interface - Date and Time Input
	ISB 1503	Common User Interface - Date Display
	ISB 1504	Common User Interface - NHS Number Input and Display
	ISB 1505	Common User Interface - Patient Banner
	ISB 1506	Common User Interface - Patient Name Input and Display
	ISB 1507	Common User Interface - Sex and Current Gender Input and Display
	ISB 1508	Common User Interface - Telephone Number Input and Display
	ISB 1501	Common User Interface - Time Display
	ISB 1500	Common User Interface - Address Input and Display
	ISB 1502	Common User Interface - Date and Time Input
	ISB 1503	Common User Interface - Date Display
	ISB 1504	Common User Interface - NHS Number Input and Display
Other Terminologies	ISB 0153	Critical Care Minimum Data Set – Version 8
	ISB 1552	Read Clinical Terms Version 3
	ISB 1556	Digital Imaging and Communications in Medicine (DICOM) V3
	ISB 1557	EDIFACT Pathology Message
	ISB 1558	Health Authority/GP Links

The Supplier of IT systems should provide:

- An annual IG Toolkit submission (or evidence of compliance with appropriate IG Toolkit standards)
- A signed IG Statement of Compliance

Further details for the IG Toolkit can be found on <https://www.igt.hscic.gov.uk>

The Supplier of IT systems should ensure that the Services (where applicable) conform to the double-A standard defined in the Web Accessibility Initiative Web Content Accessibility Guidelines 1.0

The Supplier of IT systems should warrant that at the Effective Date the Services accessible via a web browsers that are http 1.1 compliant. The Supplier of IT systems should ensure that each new release of the Services complies with the most up to date published version of http 1.1 compliant browsers at the design stage for the release.

Other UK Government Standards

The W3C Accessibility Guidelines (WCAG) v1.0 and standards published by the World Wide Web Consortium in relation to the development and deployment of all elements of the Service using web-based or other similar technologies. The Supplier of IT systems should ensure that the Services are compliant to a minimum of Double-A level as defined within the WCAG 1.0.

Where new standards are forthcoming, such as WCAG 2.0, the Supplier of IT systems shall maintain an equivalent level of compliance to these guidelines.

Information Standards Notice [ISN] (previously known as Data Set Change Notices)

The Supplier of IT systems should ensure that the Services adhere to applicable NHS ISN Notices. Adherence to new or changed ISNs that are applicable to the Services will be mandatory with any associated costs for implementation agreed via the change control process. Further details can be found on <https://groups.ic.nhs.uk/SCCIDsupport/dashb>

[oard/Lists/ISCEportfolio/current.aspx](https://groups.ic.nhs.uk/SCCIDsupport/dashb)

NHS Number Standards

The Supplier of IT systems should ensure that the Services support the NHS Number standards. Further details can be found on <https://groups.ic.nhs.uk/SCCIDsupport/dashb>
[oard/Lists/ISCEportfolio/current.aspx](https://groups.ic.nhs.uk/SCCIDsupport/dashb)

Records Management

The Supplier of IT systems should ensure that the Services comply with the Trust's Records Management policy as detailed in the Department of Health document 'Records management: NHS code of practice'.

Further details can be found on <https://www.gov.uk/government/publications/records-management-nhs-code-of-practice>

Sustainable IT and ICT Carbon Reduction

The Supplier of IT systems should support the Trust's strategies and endeavours to reduce the effect of IT on the environment by ensuring that the Services, for which the Supplier of IT systems is responsible, are fully compliant with such strategies, endeavours and standards.

Further details can be found at:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/61175/ICT_20_20overview_20final.pdf

Standards Migration

- The Supplier of IT systems should ensure that the Service upgrades are implemented to meet all new and existing standards within a reasonable timeframe
- Standards should be agreed through the NHS Information Standards Boards. New standards, once approved by the SCCI, shall form part of this Agreement.

Further details can be found on <https://groups.ic.nhs.uk/SCCIDsupport/dashb>
[oard/Lists/ISCEportfolio/current.aspx](https://groups.ic.nhs.uk/SCCIDsupport/dashb)

16. Appendix F: Data Quality Strategy

Norfolk Community Health and Care 
NHS Trust

DATA QUALITY STRATEGY

1 December 2016



Document Control

Status: Version 9
Date: 2 December 2016
Manager: Mary Doggett, Head of Performance & Information
Change Control:

Version ID	Date of Issue	Change Description	Author
Version 1	26-1-12	New document	A Barber
Version 2	3-2-12	Amendments following comments received on draft version 1	A Barber
Version 3	14-3-12	Updated with comments from M Colmer	A Barber
Version 4	19-4-12	Updated with comments from M Colmer and March IGC	A Barber
Version 5	14-5-12	Updated with comments from EDT (8-5-12) and Alex Robinson	A Barber
Version 6	12-8-13	Updated	A Barber
Version 9	2.12.16	Document rewrite: Updated national guidance including Francis Report, changes in scope, specific links to IG Toolkit measures, revised data quality initiatives, DQ Team, DQMI.	M Doggett

Approval Process:

Version ID	Date of submission	Submitted to	Approval/ comments received
Version 3	14-3-12	March 2012 Information Governance Committee	Amendments made
Version 4	24-4-12	Information Governance Committee	Approved
Version 4	8-5-12	EDT	Amendments made
Version 5	30-5-12	Trust Board	
Version 6	19-08-13	Data Quality Forum	Amendments made
Version 7	13-10-14	Information Governance Committee	Reviewed
Version 8	4-12-15	Information Governance Committee	Reviewed
Version 9	2.12.16	Information Governance Committee	

Introduction

1. In the 'Data Quality : Guidance for providers and commissioners' document published by Data Services for Commissioners, NHS England in March 2016, data is defined as being of high quality if "*...it is fit for its intended uses in operations, decision making and planning*".

The guidance further explains that data quality is important because:-

- Acceptable data quality is crucial to operational and transactional processes and to the reliability of business analytics / business intelligence reporting;
- High quality information leads to improved decision making which in turn results in better patient care, wellbeing and safety. There are potentially serious consequences if information is not correct, secure and up to date;
- Management information produced from patient data is essential for the efficient running of the trust, and to maximise utilisation of resources for the benefit of patients and staff;
- Poor data quality puts organisations at significant risk of: damaging stakeholder trust; weakening frontline service delivery; incurring financial loss; and poor value for money.

2. The Francis Report (2013) also included the following summary recommendations with regards to data quality:-

- **“Use of information for effective regulation**
A coordinated collection of accurate information about the performance of organisations must be available to providers, commissioners, regulators and the public, as near real time as possible, and should be capable of use by regulators in assessing the risk of non-compliance.
- **Monitoring tools**
Commissioners must have the capacity to monitor the performance of every commissioning contract on a continuing basis during the contract period:....
 - i. The possession of accurate, relevant and useable information from which the safety and quality of a service can be ascertained, is the vital key to effective commissioning, as it is to effective regulation.
- **Clear metrics on quality**
Metrics need to be established which are relevant to the quality of care and patient safety across the service, to allow norms to be established so that outliers or progression to poor performance can be identified and accepted as needing to be fixed.
- **Enhancing the use, analysis and dissemination of healthcare information**
...It must be recognised to be the professional duty of all healthcare professionals to collaborate in the provision of information required for statistics on the efficacy of treatment in specialties.
- **Improving and assuring accuracy**
The only practical way of ensuring accuracy is vigilant auditing at local level of the data put into the system. This is important work, which must be continued, and where possible, improved. “

3. In line with these recommendations, Norfolk Community Health and Care NHS Trust (the “Trust”) needs to deliver and maintain a standard of excellence for data quality and the organisation requires a robust Data Quality Strategy to support this.

Scope

4. The principles applied in this strategy are applicable to all data held on electronic systems in use by the Trust, including but not exclusively:-
- Core clinical systems:-
 - The Trust's Electronic Patient Record (EPR) – all modules including Community, GP (City Reach), Palliative Care and Child Health unit types;
 - Patient Administration System (PAS) hosted by the Norfolk and Norwich University Hospital Foundation Trust;
 - ICARUS (Inpatient Bed Data, delays);
 - The Trust's Community Dental System (Dental Service);
 - NEPAL (Community Liaison Team);
 - The Trust's Community Equipment System (Wheelchair Repair Service)
 - Specialist Neurology Systems;
 - ESR - Human Resources system;
 - The Trust's Incident Reporting and Risk Management system;
 - Finance and procurement systems;
 - Estates Management Systems
 - Patient Experience software systems;
 - The Trust's Structured Query Language (SQL) Data Warehouse;
 - Benchmarking data collections and report submissions;
 - Manual data collections held to support contractual KPI provision e.g. Homeward Service data;
 - Databases and spreadsheets supporting capacity and demand analyses modelling (specifically IMAS), demand and activity forecasting, service development;
 - Data held in all reports provided by the Trust, predominantly Performance Management reports, contractual information reports, Key Performance Indicator reports, indicative activity reports against plan (IAP), waiting times reports, Locality reports, Board (IPR) reports.
 - Data held in narrative style reports such as the Commissioner Performance Narrative reports received by CCGs monthly;
 - Data used to support the Safety Thermometer and other quality submissions;
 - Communication and organisational tools, including service directories and websites;

- Data being migrated between healthcare systems, held temporarily in spreadsheets and databases and used in the transfer of services into and out of the Trust; and
- Data used in clinical, and other audits.

Information Governance Toolkit

5. The Data Quality Strategy must also support compliance with the Information Governance Toolkit and include the same principles of responsibility, authority and control. The specific requirements that directly focus on standards relating to data quality assurance within version 14 of the Toolkit (2017) are:-

- 14-401** There is consistent and comprehensive use of the NHS Number in line with National Safety Agency Requirements;
- 14-402** Procedures are in place to ensure the accuracy of service user information on all systems and/or records that support the provision of care;
- 14-501** National data definitions, standards, values and data quality checks are incorporated within key systems and local document is updated as standards develop;
- 14-502** External data quality reports are used for monitoring and improving data quality.

The Information Governance Toolkit guidance should be used in conjunction with this strategy to ensure the Trust works against nationally defined standards, guided by the resources suggested in the tool.

Data Quality Domains and Characteristics

6. The Audit Commission provided a useful framework for defining and then managing data quality in their 'Figures you can Trust' report published in 2009. In this document, six dimensions of data quality are identified which, when suitably addressed, will support an organisation to achieve good levels of data quality. They are detailed below:-

Accurate

Data must be sufficiently accurate for its intended purposes, representing clearly and in sufficient detail the interaction provided at the point of activity. Data should be captured once only, although it may have many uses. Accuracy is most likely to be secured if data is captured as close to the point of activity as possible. Reported information that is based on accurate data provides a fair picture of performance and should enable informed clinical, operational and managerial decision-making.

Complete

Data requirements must be clearly specified based on the information needs of the organisation and data collection processes matched to these requirements. Monitoring missing, incomplete, or invalid records can provide an indication of data quality and can also point to problems in the recording of certain data items.

Relevant

Data captured must be relevant to the purposes for which it is used. This will entail periodic review of requirements to reflect changing needs.

Reliable

Data must reflect stable and consistent data collection processes across collection points and over time, whether using manual or computer-based systems, or a combination. The Trust Board, as well as staff, managers and stakeholders should be confident that progress toward performance targets reflects real changes rather than variations in data collection approaches or methods.

Timely

Data must be captured as quickly as possible after the event or activity and must be available for the intended use within a reasonable time period. Data must be available quickly and frequently enough to support information needs and to influence the appropriate level of service or management decisions. Unnecessary delays such as the batching of information prior to data entry, is not acceptable.

Valid

Data must be recorded and used in compliance with relevant requirements, including the correct application of any rules or definitions. This will ensure consistency between periods and with similar organisations, for example for the purposes of benchmarking.

The '*Data Quality : Guidance for providers and commissioners*' document suggests an alternative set of 'Data Quality Characteristics', which although specifically applying to secondary use datasets, could also be applied to the Trust's data. Three of these map to the above set of domains suggested by the Audit Commission- **Completeness**, **Validity** and **Timeliness**, but introduces three additional new 'characteristics'. The Trust should also consider these indicators of data quality when monitoring its own data:-

Coverage

Coverage is the degree to which data has been received from all expected data suppliers. For a community provider (as opposed to a local DSCRO), this characteristic could be applied to 'service'.

Default

Default is the degree to which the default values specified in applicable standards and business rules have been used in the data collected. For the purposes of this strategy, the example applied could be the use of 'Other' when collecting items such as 'Referral Source' where either the required option is not available, or the data inputter has failed to select the appropriate option.

Integrity

Integrity is the degree to which data satisfies the set of business rules that govern the relationship between fields, records and data assets. This is especially important for the Trust where the chosen clinical system does not support embedded data integrity rules e.g. a specific service can only have a specific set of 'Reason for Referral', or 'Referral Urgency'. This significantly increases the workload of the data quality function and should always be highlighted as a core requirement when the Trust is working on development ideas with suppliers of clinical systems.

Implementing and Monitoring the Strategy

7. Entering or recording information into the Trust's systems that is 'Right First Time' is clearly more effective and efficient than addressing errors at a time after they are reported. Systems and processes will contain as much appropriate validation and self-checking as possible. It is clear that high levels of data quality is the responsibility of any member of staff working for the Trust and that they know how the data they capture will be used. This must be made clear in every job description.
8. A strong emphasis must be made on user ownership for getting the right data into the right system at the right time, and any relevant process improvement steps. Training and education will play a key role in underpinning this strategy.
9. Training in the use of clinical systems for new starters and refresher training will be provided by the Trust's Information Management and Technology (IM&T) training function.
10. Clinical systems training or re-training for service development changes and new service implementations will be co-ordinated by the Change Team, using a combination of IT training resources from IM&T and Change Team. Guidance will be provided as a core requirement to the delivery of the change. The Performance & Information Team will work closely with the Change Team to ensure key data quality messages crucial to accurate reporting of the services' Key Performance Indicators (KPIs), are embedded into the training at the outset.
11. In line with the Francis Report recommendation '**Improving and assuring accuracy**' as detailed above, the Data Quality Team (forming part of the Performance & Information Team), will provide the dedicated resource needed to focus exclusively on data quality priorities for the Trust.

The Team will provide workshops, data quality guidance, one-to-one training and support to clinical and admin staff. The Team will also provide a data quality dashboard for inclusion in Board (IPR) Reports. It will supply service and user level data quality monitoring reports to service leads, highlighting particular areas of concern down to individual staff name level. This will ensure all staff, including clinicians and administrators to be offered appropriate support to improve their own data quality.

Where focussed data quality training is deemed necessary, the service lead will support the Data Quality Team in helping to facilitate the training by supporting the release of the member of staff for training. The Data Quality Team will endeavour to condense training down to an optimum time to ensure the training is beneficial but simultaneously ensuring the loss of clinical time is minimised. The Data Quality Team will visit the member of staff at their place of work where possible. Data Quality training will be optimised by running groups.

The scope of the work carried out by the Data Quality Team will initially focus on the Trust's clinical systems but should extend to work with analysts from other Corporate functions across the Trust – HR, Finance, Estates, Patient Experience, IM&T to ensure the Trust applies the same data quality standards across all electronic systems.

12. Service leads will be able to review the level of data quality for their own individual services via the 'Service Information Document' (SID). The service level SID will be refreshed weekly and accessed via a central drive.

For example, incorporating one of the 6 Data Quality domains – **Completeness**, service leads will be able to review activity by clinician on a monthly rolling 12 months and most recent 4 weeks' basis. The SID discussion between the Performance Manager and the service lead will regularly discuss data quality and where poor data quality is having an impact to performance figures. The discussion log in the SID will capture the details of the discussion and ensure that actions generated from the discussions will be enacted and followed up.

13. System customisation must be strictly controlled through agreed arrangements including the IM&T EPR Change Control process and EPR Steering Group to maintain data quality standards throughout the Trust, whilst simultaneously exploiting the opportunity for data to be enriched by capturing e.g. new outcome measures, crucial to evidencing the efficacy of a service.
14. All service 'pilot' initiatives carried out by the Trust should be treated in the same way as new service implementations. Trust managers should be aware of the impact of using core clinical systems to capture data temporarily and understand the possible adverse data quality consequences. E.g. using an existing 'Service Offered' on EPR for a pilot, may lead to an artificial increase in activity levels which is reported on the Trust's contracted Indicative Activity Plan (IAP) reports.
15. In line with the Francis Report recommendation '**Enhancing the use, analysis and dissemination of healthcare information**', the requirement for all staff to contribute to the 'provision of information required for statistics', will be regularly communicated. All training will emphasize the important message that clinical systems used in the Trust, whilst being the method of capture of the complete patient record, are equally as important as being the tool by which the Trust can evidence compliance against its service contracts. The importance of data quality will be highlighted in staff appraisals, and where appropriate, individual's specific data quality performance may be referred to.
16. **Accountability:** Data Quality initiatives will be monitored by the Trust's Audit Committee on a quarterly basis. The Information Governance Committee will have oversight of those Information Governance Toolkit standards relating to data quality. Data Quality will be reported monthly to the Trust Board through the Integrated Performance Report (IPR).
17. **Risk Management.** All data quality risks should be added to the Trust's risk management system on the most appropriate Risk Register. All staff should understand that lack of care with regards to data quality could ultimately lead to the Trust making inaccurate and/or costly decisions and as well as risking the reputation of the Trust.
18. **External Relationships:** The Trust should develop close working relationships with NHS Digital and other external key stakeholders to be in a position to influence national developments linked to data quality.

Data Quality Maturity Index

19. The Trust will closely monitor its performance in the monthly Data Quality Maturity Index (DQMI) published by NHS Digital. The DQMI is intended to raise the profile and significance of data quality in the NHS by providing data providers with timely and transparent information about their data quality. The DQMI assesses both the completeness and validity of a core set of data fields across 6 national datasets:-

- Admitted Patient Care (via SUS)
- Outpatient (via SUS)
- Accident & Emergency
- Mental Health Services
- Improving Access to Psychological Therapies
- Diagnostic Imaging

At the time of this review, the Trust contributes to the calculation of its score by the Inpatient CDS data supplied for its admitted patient care.

The Trust will ensure that data quality initiatives and resources are appropriately focussed to achieve a good DQMI score, primarily as one facet of the overall data quality initiative, but also to encourage confidence of external stakeholders in the Trust's data.

Related Trust strategies and policies

20. The following strategies and policies are relevant and should be considered in conjunction with this strategy:

- Data Quality Policy
- Disciplinary Policy and Procedures document
- Health and Corporate Records Management Policy
- Internal procedural document for the Destruction/Retention of records
- Information Governance policies, including Confidentiality policy
- Data Protection and Access to Health Records policy
- Information Governance Toolkit
- Information Technology Security policy
- Freedom of Information policy
- Records Management: NHS Code of Practice, Department of Health (2006)



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