We have been working together to consider what the requirements set out in the NHS Long Term Plan mean for our residents, staff and health and care partner organisations across north central London (NCL). We have a collective commitment to deliver changes that will improve the health and wellbeing of residents and have listened to what residents told us is important to them.

We have developed a draft NCL delivery plan for digital transformation and are now seeking the engagement and involvement of all local partners, stakeholder and residents to refine and finesse these plans. Over the next two months, we will cross-reference, financially cost and finalise our plan for submission in November.

*If you have any comments, queries or think we have missed important points relating to any of the sections please get in touch with Stoil Stoilov (*stoil.stoilov@nhs.net).

Digital Transformation Across North Central London

Fully digitising North Central London is a key priority for our region in the next five years. We have undertaken a number of approaches, including provider digitisation programmes, an STP-wide health and care record-sharing programme that covers primary care, secondary care and social care.

NCL STP has procured and is in the process of implementing two STP-wide platforms to enable system-wide integration across health and social care in NCL - a Health Information Exchange for real-time viewing of patient data from multiple disparate sources, and Cerner's HealtheIntent for population health management and analytics. Implementing these two systems makes up the core of the STP's efforts in the digital space since 2018/2019. We have focussed on integrating primary, secondary and social care using these systems to facilitate better care, reduce duplication and inefficiencies, and improve patient experience.

Since the last digital maturity assessment of the STP, we have made significant strides. In 2017, we were below the national average in terms of digital maturity, but since the last assessment was undertaken in late 2017, our four acute trusts have received Global Digital Exemplar (GDE) or Fast Follower (FF) funding - Royal Free has implemented Cerner Millennium fully at Barnet and Chase Farm, UCLH has implemented Epic across all sites, NMUH and Whittington have implemented new functionality in their System C electronic health record. GOSH has also implemented Epic. We anticipate that as the electronic health records are developed, especially in the acute sector, this will be reflected in the overall digital maturity of NCL when a new assessment is undertaken.

In terms of provider digital maturity, our four main acute providers - RFL, UCLH, Whittington and NMUH are all part of the GDEs/FF programme which should deliver a minimum of HIMSS EMRAM[1] stage 5 by 2022, with many sites targeting a HIMSS EMRAM stage 7 within the next 10 years. For example, Chase Farm Hospital is HIMMS EMRAM level 6 and we plan to achieve level 7 in 2020. We plan to achieve HIMSS EMRAM level 6 at Barnet Hospital in 2020 and Royal Free in 2021, and achieve level 7 in 2021 and 2022 respectively.

We also have a number of provider-specific digitisation programmes underway for Electronic Prescribing and Medicines Administration (EPMA) and Electronic Health Record (EHR) enhancements, and we have earmarked the rest of our Health System Led Investment (HSLI) funding not used for Health Information Exchange (HIE)/HealtheIntent for this.

NCL is well versed in the GDE programme. Our GDE participants are committed to providing GDE Blueprints to help deliver IT capabilities more quickly and cost effectively, and other trusts are also keen to have access

[1] Health Information and Management Systems Society Electronic Medical Record Adoption Model

to the Blueprint library to learn from other trusts. For example, our Royal Free GDE is committed to providing 5 Blueprints for:

1. Reducing unwarranted clinical variation using digitised standard care pathways
2. Implementation of Cerner Millennium Model Content EPR to achieve HIMSS EMRAM 6
3. Go-live of the new Chase Farm Digital Hospital
4. Implementation of Cerner HealtheIntent Population Health Management
5. Improving patient care, outcomes and experience for deteriorating patients with Acute Kidney Injury (AKI) using DeepMind Streams App

In addition, providers in NCL have been employing machine learning and Artificial Intelligent technology to enable more efficient delivery of, for example, diagnostic services or outreach services.

In procuring technology platforms, we already require suppliers to comply with national standards and frameworks. For example, RFL uses the NCL Procurement Shared Service so they already use compliant frameworks for digital procurements including NHS T&Cs to ensure compliance with regulatory, legal and NHS standards on data capture, storage and sharing. These requirements form part of the contract entered with the suppliers which ensures that these standards are implemented.

Security of Data in North Central London

We aim to keep abreast of the latest cyber security developments and requirements.

Our providers are well on their way to rollout Windows 10 and Microsoft Advanced Thread Protection, and all of our GP sites already meet these requirements. Our Trusts are well engaged and keen to be on the front foot in this regard, but progress is threatened by national capital spending reviews.

Furthermore, we use the Cyber Security Support Model to raise our level of cyber protection. We are briefing our trust boards on cyber security awareness, we implement cyber security tools, and we have significant progress towards achieving the Cyber Essentials Plus certification with providers and primary care practitioners.

Our organisations are already making use of the Cyber Risk and Operations support package to improve our cyber resilience.

Digital Leadership in North Central London

Chief Clinical Information Officer (CCIO) roles in partner organisations within NCL have evolved a lot over the past couple of years, and we plan to continue this trend.

- The STP now has a dedicated Chief Information Officer (CIO) and two CCIO posts (provider and CCG)
- The STP population health digital programme is led by a Local Authority Public Health consultant
- All 5 CCGs have a nominated clinical digital lead
- All 12 providers have at least one CCIO.
- At least three Chief Nursing Information Officers (CNIOs) have been appointed recently
- The provider CCIOs come from a variety of clinical backgrounds including doctors, nurses, allied health professionals, psychologists
- Two of the acute providers are enabling medical trainees to gain experience as CCIOs, supported by senior staff
- Our CIOs and CCIOs sit on their trust boards to a various degree, but all are committed to give better representation to Information Officers at the board level.

Benefits Realisation

Our health and care records sharing programme isn't just delivering technology for technology's sake. We are committed to developing use cases that will enable clinical workstreams such as mental health and children and young people to deliver more benefit for our residents.

Digitising to Core NHS Standards

In digitising our providers, we are committed to meeting standards set by NHS England and NHSX.

We are working towards providing mobile access to our staff where it is needed. At the Royal Free, we already provide remote access to our EPR for staff based in the community, and to patients using our patient portal.

Community services are largely domiciliary and delivered by a mobile workforce, and therefore we have projects in the pipeline that deliver mobile devices and access to our workforce. There are a number of mobile applications which support more effective delivery of care in the home including the native mobile apps from the main suppliers. For example, CLCH would run a programme to implement and embed this across domiciliary community services for more efficient and effective care. This includes more rapid access to the clinical record for safe care and improved data entry to improve data quality and increase clinical facing time. CNWL is targeting implementation of lightweight devices to allow access to the Trust S1 EPR, Cerner HIE, CIDR records remotely whilst away from base location in addition to access to social care records as they become available.

Our trusts utilise CP-IS via the national spine service, and are looking to integrate further and embed into our EPRs.

Our trusts either no longer use fax machines, or are planning to remove all that are left in the near future. Fax machines are not provisioned within GPIT support.

NHS Login and the NHS App

[section being developed]

Personal Healthcare Records

In terms of patient access, the RFL has a patient portal that provides access to a wide range of patient data, which we want to offer to all our patients. In the future we are looking to provide access to transactional services like booking or amending outpatient appointments or capturing data from home based or wearable sensors. Currently there are different patient portals for primary and some secondary care providers, each offering access to appointment booking, local electronic health records and offer patients a way to share information with their providers e.g. completion of pre-assessment forms. Most of these are proprietary portals at present so there is a need for a national programme to ensure APIs can be developed to share data between these and the NHS App. NCL will be evaluating options in conjunction with other London STPs to provide a common approach to a person held record across the capital.

Some trusts have digitised maternity records within their EPR and plan to provide access via their patient portals.

The same goes for children's immunisation records, as trusts are keen to provide access to e-Redbook integrated into their EPRs.

Population Health Management and Analytics Across North London

There is huge potential to use data, insight, and evidence systematically and more effectively across our local public services in North Central London to improve the health and wellbeing of our patients, residents, and communities, reduce health inequalities, and to make more efficient use of resource.

While there are some pockets of good work, our approach to using data and analytics has historically been fragmented. This means that we are not using it to drive change in population health outcomes at scale and proactively enable improvements in place-based systems, such as boroughs and neighbourhoods, including on the wider determinants of health.

We have already made some progress in changing this all and we have big aspirations to change the way we collaboratively work together, including with communities, patients and residents, to make improvements. While appreciating the need to understand ethical risks and acceptability, we also want to capitalise on the emergence of newer digital and analytical technologies, such as machine learning. Finally, we want to make best use of the capabilities of our partners outside of North London Partners, including those at regional and national levels, and within local academia and other organisations to make this a success.

What we are doing now:

We have set up an Analytics Board to lead and oversee the development and use of analytics across North London, where it makes sense for us to work together.

We are committed to ensuring that we are fully transparent about how we are using data and analytics and that it is in a way that is lawful, ethical, and acceptable to patients and residents. As well as having members of the public on our Boards, we are setting up an ongoing patient and resident reference group (as part of our joint governance with Digital) to advise us and support wider engagement across North London, and to link in to activities in the One London programme. Importantly, this group will be equivalent to the health and care professional reference group.

Via the STP's digital workstream, a population health management platform (Cerner's HealtheIntent) is being deployed across North London.

Through the use of registries which identify what evidence-based care measures you would expect to be delivered for a particular population group (e.g. control of blood sugar for people with diabetes), this will enable our frontline services to identify where there are 'gaps in care' for the individuals they see, as well as at a population level. We will be looking across the life course (conception to death) to identify key population groups and associated measures for North London. We will also be using the platform to enable front line health and care professionals to identify where there is unwarranted variation to improve the quality of care and case finding to make the shift towards prevention and earlier intervention. This will specifically support the quality improvement initiatives within our primary care networks in the first instance.

Our analysts have been working more collaboratively together to provide strategic analytics to drive system planning and prioritisation, starting with childhood asthma for the children and young people's STP programme.

We were successful in receiving two small grants from NHS Digital to build a collaboration with LSE and NEL CSU to look at whether we can use de-identified social care 'free text' data to better predict escalation of needs to improve prevention and early intervention.

Beginning in Islington, and funded by the Health Foundation, we are looking at whether we can use de-identified household-level data to quantify the impact of the social determinants of health (e.g. housing) on health and care service utilisation and vice versa. If successful, this would inform how services could work better together to improve population health.

We have been exploring how we could better enable our trusted academic partners to undertake research using joined-up data to improve quality, care and outcomes.

With our partners at NIHR CLAHRC North Thames, we have been undertaking some qualitative research to understand how system leaders use analytics to inform a wider survey and potentially a programme for continuing professional development in this rapidly developing and complex area.

What we are also planning to do:

Together we will determine the 'key' questions that we want to use data and analytics to help answer so that we start drawing up a strategy and associated plans for what we want to be able to deliver at different levels of the system (e.g. ICS, borough partnerships, PCNs), as well as being clear what we need from a London and national level to enable this.

Building on what's been done in other areas, we will look at how analysts from across the different parts of the health and care system can start working together more collaboratively to share knowledge and skills, and up-skill where required. This is particularly important as we start to use more joined-up data and move towards more advanced analytics.

We will work collaboratively to determine what outcomes, including inequalities, we are measuring across the whole system and within specific programmes, and how we know whether we are making an impact on these. This will include looking at how we are capturing clustering of risk factors and multi-morbidity. We will also proactively work to include more 'subjective' measures (e.g. kindness, social cohesion) that capture the relational aspects of health and wellbeing which are crucial to improving population health outcomes, and the wider determinants of health.

We will continue to look at where there are opportunities to use more advanced analytical methods to predict and model escalation of needs and reduce demand, identify where we can make the greatest impact, improve quality, and make service planning and delivery more efficient and cost-effective. This is likely to include the use of methods for population segmentation, risk stratification and agent-based modelling, for example. We will also look at how we can better evaluate the impact of interventions and change across different parts of the system via STP-wide health and social care profession-led workstreams.

Being able to translate data and analytics into easily accessible information for action is important if we want to enable change. We will specifically work with frontline health and care professionals to determine how we can make this work well for them, so that they can take evidence-based action but spend their time focussing on what matters most – delivering care.

We recognise that to reduce health inequalities and improve the health and wellbeing outcomes of our most vulnerable residents we need to be working with communities themselves, including through the voluntary and community sector. We will work to change the way we describe the needs of communities and population groups in a way that is more meaningful to them. Working across the different levels of our North London partnership, we will seek to co-develop the narrative around North London as a place ensuring that over time community-based assets, needs and views are better described alongside routine health and care data.