Information and technology for better care in our system

YDH Digital Strategy 2020-23

Introduction

The Health and Social care system across the Somerset health system faces unprecedented challenges. There are constraints on resources, a rise in expectations, and an escalating demand for services; all of which are placing current models of care under increasing strain.

Within this setting, YDH is working closely with providers across the county to ensure that we devise and implement strategies that meet this challenge. We must do more to help the population of Somerset look after their own well-being. We need to join up health and social care services to better reflect the way in which these services are accessed and delivered, and we need to bring the base level of technology across our services to a suitable standard that will support shared access to records, self-management and access to health information, and to expedite the transfer of information between providers and services to meet the growing needs of our population.

Having recently deployed an electronic Patient Administration System, and various other integrated solutions and technology, we have demonstrated and proven that patient facing technology and access to information is both welcomed and works to improve patient experience. Technology helps us to make clinical decisions in a more timely fashion, and reduces the manual overhead and workload of our important services. We are keen to share our experiences and to share a collaborative approach to refining technology-based solutions that meet the needs of our population with other providers. We will continue to look for future affordable investments that can deliver more benefits like the ones we have experienced, and ultimately reduce wastage in the system and improve the quality of healthcare, leading to better outcomes, and the improved experience of our patients and their families.

We are, and will continue to engage in national and regional projects, programmes and initiatives and will look to take on the challenges that we all face in increasing the system capabilities to support interoperability, access to information and the implementation of open standards across technologies and systems used in health and social care.

We will invest in the development of technology and digital solutions that support the transformation activity of our wholly owned subsidiary - Symphony Health Services (SHS). There are many benefits to explore for our population, for the services we deliver and for the wider health system that can be obtained by looking for innovative ways of using technology that break down the existing organisational or "service type" barriers that exist between groups of health and social care providers.

Our Strategy

Our strategy reflects the growing understanding that technology needs to further support the integrated working of both health and social care providers. This can only be achieved by the effective exploitation of technology, data and information. In determining our strategy, we have considered the need to improve the base level of technology across Somerset (and further), to look for "middle ground" development opportunities, expanding on good systems and implementations that are already in place, and looking for technology in the areas of direct care provision such as medical robotics or wearable technology, and in non-direct areas, such as developing insights and intelligence from the wealth of information we have already (AI).

Our strategy sets out five objectives for the next three years. Our objectives look beyond the organisational and county boundaries that exist today, and focus strictly on improving access to and delivery of health and social care to our population, expanding our existing systems and investments beyond what they can do today, and looking to the future to ensure that we do not remain behind the curve in terms of Technology Innovation in health and social care.

We are committed to:

Improving the base level of technology

It is commonly known that the NHS falls behind many other industries and sectors in terms of the base level of technology in place. Other industries, such as finance, insurance and retail have overcome the many challenges that we still face within health and social care systems. Many health and social care providers are currently at differing levels of maturity of their IT solutions and technology, and this has allowed for a lack of system integration, which reduces the availability, or timeliness of information that is required to support the provision of health and care for our population.

We will adopt "best of breed" solutions from mature suppliers and vendors of systems and technology, and we will invest in providing levels of integration that many suppliers and vendors cannot currently deliver. We will support national initiatives and national teams in promoting and investing in only solutions and technology that conform to open standards and work jointly with government and central NHS teams to develop strategies and approaches to manage ongoing relationships with suppliers and vendors who do not support these principles.

Through a rolling "This is IT!" programme of IT improvement across the Trust, the base level of technology, training and equipment will be assessed. Aligned with our PC replacement program we will ensure that IT equipment is under five years old, supports the core activities of our user base and is deployed with standard software and solutions for which standard "e-Learning" packages can be deployed. We will also ensure that our single sign-on solution is rolled out across the Trust, supporting a higher level of IT security, and reduced time in accessing important systems.

Expanding capabilities and value of existing systems and tools

YDH has invested in the development and deployment of key solutions and technology. Most significant is the implementation of a new Patient Administration System (PAS) - TrakCare. In addition to a new PAS, there have been investments in self-management tools at YDH supporting online management of outpatient appointments, and centralisation of appointment/clinic letters. We have successfully implemented eReferrals through the national tool and now send all communications (letters and discharge summaries) to GPs through digital solutions.

Through the implementation of TrakCare and other technology and solutions, a relatively low level of functionality has been delivered in order to reduce impact to front-line clinical services, and to reduce the negative impact to patients. As a consequence, there are large elements of functionality contained within systems already in place that could further improve quality, safety or provide efficiencies within our services.

We will work with clinical and operational areas of YDH to identify functionality that is yet to be utilised, and we will embark on implementing trust-wide transformation of operational processes to refine service delivery and leverage this functionality. We will continue to develop and deliver new functionality as it becomes available within TrakCare. These will include the following capabilities:

- **Internal Referrals**
    - Manage and track referrals between all of our services
- **OrderComms**
    - Raise and track orders such as radiology, pathology (including results viewing and notification)
- **ePMA**
    - Electronic prescribing and medicines management across our hospital
- **Community Access**
    - Replacement of paper processes used to capture patient information, and record care plans and assessments digitally
- **Self-Management**
    - Empower patients to take ownership/management of their information, whilst providing functionality to access information relating to their care, and allow patients to manage appointments online or via text
- **Paper Reduction**
    - Reduce our production of paper, specifically in communications - through further utilisation of existing solutions and services, such as letter creation and clinic noting with the PAS, and leveraging our existing relationships with vendors to expand their offering

We will continue to work closely with regulators and providers across the county and region to challenge the information access, use, and protection restrictions that can hinder innovative provision of care to our population. We will seek appropriate processes, backed by effective governance and information security policies, to generate insights or alerts for specific groups of our population for whom we can provide interventions in care to support continued development of preventative approaches, and to provide insights and intelligence into population health and care needs throughout our care system.

We will continue to invest in our IT and cyber security to ensure that our employee and patient information is protected from known and unknown threats and potential attacks on our infrastructure and systems. We will also regularly review all technology supplier and vendor contracts to ensure that they conform to current laws and legislation and collaborate with other providers and suppliers to proactively monitor and manage effective security of our IT systems and data.

Leading & Supporting key technology programmes supporting Somerset

Through partnership with other providers, and collaboration at a county and regional level, we will engage with and lead significant programmes of digital transformation to support the sustainability of Health and Social Care in Somerset. We will lead the delivery of programmes under national investment or initiatives in the area of Digital solutions, and specifically under the Health System Led Investment fund, we will lead on delivering the following programmes:

- ## Patient self-management
  - Providing access to online tools to manage appointments, access education and information, and provide/gather additional information such as pre-op assessments and patient questionnaires

- ## Standardise acute processes across Somerset
  - Consistent with primary care processes (Clinical guidance and Apps) - covering guidelines, formulary, integrated assessments and bed/care side information etc…

- ## Business intelligence (BI) for Somerset
  - Development and delivery of a BI Strategy, including building a county-wide dataset, standardising BI tools, integrating data from other providers and continuing to build a "single version of the truth" for all

- ## Somerset wide Electronic Document Management Solution (EDMS)
  - Containing historic records (scanned) results and imaging, documents and attachments to care records maintained by each provider.

- ## Expansion of EPR
  - Use across Somerset - Focussing on access to secure network and provision, and the rollout of hardware to support wider community access to solutions and systems hosted by care providers across Somerset.

YDH will also prioritise and support the programmes and national initiatives being led by other providers in Somerset. These include:

- **Infection Surveillance and Management System**
  - A single solution to record and track infection risks, issues and occurrences across Somerset - accessible by all (led by Taunton and Somerset NHS Foundation Trust (TSFT))

- **Cancer: digital support for Prostate etc.**
  - Development of Somerset cancer registry for self-help and monitoring of people with cancer, initially Prostate (led by TSFT)

- **EPR functionality**
  - Including clinical decision support and consolidated results reporting - leveraging existing and developing solutions to build standard approaches for digitally supported clinical decision support and a single solution to view results (led by TSFT)

- **Improve information sharing and connectivity**
  - Across wider community - focussing on HSCN (currently N3) deployment and accessibility for all providers of health and social care in Somerset, and technology or integration that exposes information to those that need it (led by TSFT)

- **Rapid Response**
  - Solution for the community as part of system improvements to reduce flow of patients to A&E (led by Somerset Partnership NHS Foundation Trust (SPFT))

- **Community/mental health whiteboard**
  - Electronic whiteboard (including purchase, install and change management to embed new process as part of system wide bed management (led by SPFT)

- **Somerset dashboard/control centre**
  - Refine national best practice blueprint(s) for provision of control centre functionality for Somerset patient flow, preparing for future countywide whole pathway solution, building on Yr1 specific building blocks (led by TSFT)

- **STP Digital Programme Management**
  - Grouped resource to support Somerset digital delivery board and oversee STP level digital portfolio, particularly focused on two key themes of Somerset Portal and Somerset Business Intelligence (led by Digital Delivery Board)

Implementation of "direct care" innovation in technology & hardware

YDH will explore existing and developing technologies to pilot, investigate and implement innovative solutions that can be used in the direct provision of care to individuals. Significant areas of investigation and/or development in technology that we will pursue are:

- Robotics
  - Use of automated and/or remote medical procedures through the use of robotics and off-site surgeons and expertise.
- Wearable Technology
  - Overlaid imaging through wearable tech that can provide additional clinical data/information supporting clinical decision making and with the potential to improve speed to diagnosis or improved explanation of complex conditions or diagnoses. Live feeds with overlaid imagery to support virtual multi-disciplinary review of complex cases.
- Connected/Intelligent Devices
  - Continuous feed to patient episode of care record from any connected devices or equipment, with the potential to react to combined multiple feeds, including results, observations and patient feedback.
- Patient Self-Monitoring and Technology in the Home
  - Ability to record activity, measure, or take automated reporting from technology in the home is required to support intervention in primary and community care. Directly feeding the health records of patients and providing important insights into patient conditions or behaviour to refine intervention and support preventative solution development.

Innovation in information - analytics, insights and intelligence

Insights & Analytics:

Continuous development of health analytics, and the insights that we can draw from this data are vitally important in determining the long-term effect of changes that will be applied to our system over time. Not only the innovative new technologies, but other changes in our system, from pathway re-design to service reviews and changes imposed by national, regional and other programmes and initiatives will impact patient outcomes and will change the pressures that are applied to providers and organisations across our system. It is vitally important that this activity information, care outcomes and operational data is collated and exposed to our health system from a trusted source and on a standardised solution; trusted by all.

From this trusted platform, we must work together to establish the metrics by which we will measure the success of various initiatives, and we will inform ongoing service design, and development to react to what the information shows us. We must determine targets and KPIs from this data to highlight anomalies and "unexplainable" circumstances so that we can continually improve, and further our understanding of the population that we serve.

Population Health Data:

We must use the foundations of system wide reporting and analytics solutions, and "trust" in the data to develop a population health dataset, containing information from many more providers, and determine the "rules" for use of, or access to this information. Ultimately, our aim must be to improve our ability to forecast health and social care demand across our population, and to develop intervention pathways that support preventative care - to improve the lives of our population whilst reducing the demand on our health and social care system.

Artificial Intelligence (AI):

Many approaches have been explored to establish better ways to forecasting demand and mitigating risk in health and care. Historically these approaches have been used to establish a risk score, or comorbidity score (effectively a 2-dimensional score) that have historically provided clinicians with additional information that would allow them to intervene or adjust care plans to manage demand or mitigate risk.

Developing on the insights, and the existing and new algorithms that will underpin our Insights and Analytics activity, AI will enable us to develop machine learning capabilities that will be able to consider a broader set of data and information. Taking population health data, and adding wider non-health relating datasets, we can build self-learning algorithms that can help us understand and forecast the needs of our population. For example, combining activity information from the health and social care providers in Somerset with seasonality, precipitation and temperature information could help us to establish a "patient complexity" score that varies depending on the time of year, or the weather, or location of our patients. Add to that the further impact that weather and seasonality can have on travel, on staff availability, and therefore on access to services; we would have all of the information required to establish the most appropriate interventions, to challenge (with evidence) the structure or location of services and to implement the changes necessary to improve patient outcomes, to reduce demand on, and therefore cost of our services.