Buckinghamshire, Oxfordshire and Berkshire West (BOB) Integrated Care System (ICS) Digital & Data Strategy

May 2023

1. Executive Summary

The Integrated Care System (ICS) Digital and Data Strategy guides our collective digital, data and technology ambitions across the Buckinghamshire, Oxfordshire and Berkshire West (BOB) ICS for the next 3 years. It will deliver our vision to improve the lives and experiences of those accessing and working in our ICS, through building collective digital and data maturity across our partners and providers.

We serve a growing population of nearly 1.8 million people, covering an increasing ageing population, areas of deprivation, and a significant proportion of people living with one or more long-term health conditions. Whilst demand and need will pose long-term challenges for our system, we are uniquely positioned to tackle them.

Our ICS joins up organisations across the NHS (National Health Service), local councils and other health and care partners to enable the integration of care, which will help us to meet our aims of driving prevention, improving quality of care, becoming more efficient and tackling health inequalities. Within our geography we have some of the world's largest technology providers, several academic institutions recognised for their world-class research, and 3 Global Digital Exemplars. Our providers have longstanding accolades in pioneering new treatments and technological innovation, but they still need to tackle a digital deficit.

We have remained sensitive to our financial backdrop and workforce pressures across the system, whilst remaining optimistic about our opportunities. This Strategy defines the opportunities and articulates where, collectively, we can make the most difference for our population, our patients and our workforce. Digitally enabled services must be accessible and available to our entire population, and we will invest in achieving digital access for all.

To deliver our Strategy successfully, we will need to change our ways of working to realise the benefits of being unified as a system, by exploiting and building upon collaboration opportunities already existent within the ICS. The role of the Integrated Care Board (ICB) will be to bring together our collective strengths and facilitate delivery of this Strategy, aligned with the ICS development aims and forthcoming strategy. As a system, we will continue to build our digital maturity in line with the NHS England What Good Looks Like (WGLL) Framework.

Our strategy centres around 3 core objectives:

1) **Digitise our providers** to reach the Minimum Digital Foundations (MDF) requirements and establish a core level of digitisation across our system.
2) **Connect our care setting** using digital, data and technology and improve citizen experience.
3) **Transform our data foundations** to provide the insights required to transform our system and better meet the needs of our population.

Our investments seek to improve maturity across all NHS England What Good Looks Like domains, but particularly the Well Led, Empower Citizens, Improve Care and Healthy Populations. Our work will be guided by our Design Principles, collectively defined by our partners across the system:

- Population Health-led
- Open Collaboration
- Experience & Needs Centred
- Common Frameworks & Standards
- Once for BOB

2. Introduction

This document outlines the Digital and Data Strategy ("the Strategy") for the BOB ICS for the next three years.
The Strategy defines the strategic direction and the role of the ICS in the delivery of digital, data and technology across our system. The Strategy is owned by the ICB and seeks to demonstrate the potential value of
delivering products, services and platforms in a coordinated approach across our providers. Our intent goes beyond digitisation of processes and pathways to delivering true transformation of our Health and Care System enabled by digital, data and technology.

Why was the strategy developed?

Utilisation of Digital and Data provides an opportunity to enable transformation and achieve the triple aim of better health, better care and lower cost.

The Strategy seeks to build on the successes of our respective providers' digital and data strategies with a focus on where, collectively, the ICS can accelerate digital transformation and support care across our system. The Strategy represents our collective ambition and underpins our ICS's operational planning and budgeting.

The Strategy aims to provide clarity on the ICS's role, the direction of travel for digital, data and technology and a costed roadmap for delivery.

How was the strategy developed?

Throughout development, we have conducted extensive research and direct engagement with stakeholders across all key sectors of the ICS. As the strategy continues to be developed and implemented, ongoing engagement will continue with Primary, Acute, Community, Mental Health, and Social Care, and other identified stakeholders.

We have followed an iterative development process to continuously collate feedback and refine the output to ensure the Strategy represents and is accepted by leaders across the region.

3. Strategic Context

The Health and Social Care System continues to face significant challenges in England. The COVID-19 pandemic demonstrated the potential value of digital, data and technology in rapidly delivering alternate care models and enabling access to care in new ways. There is a significant national drive, delivered through Integrated Care Systems, to recover and transform systems across the country in response to emerging societal priorities.

- **Prevention & Wellbeing:** Improving health of the nation in response to an ageing population and rising multi-morbidities.
- **Workforce:** Attracting and retaining workforce and reduce vacancies (currently 10%).
- **Activity & Backlog:** Increasing elective care by 30% from pre-pandemic levels to reduce waiting lists.
- **Health Inequalities:** Reducing widening health inequalities across populations in England.
- **Place-based:** Improving responsiveness to local population needs through place-

based models.

- **Citizen Expectations:** Responding to rising citizen expectations of public services and digital demands.

3.1 National Strategy & Policy

The Long-Term Plan, Digital Health and Social Care Plan, and the Data Saves Lives White Paper aim to deliver a technology and data enabled health care service that supports the needs of the population, as well as those of the workforce.

- Empowering people
- Improving Population Health
- Supporting Health and Care Professionals
- Improving Clinical Efficiency and Safety
- Supporting Clinical Care

The national policy framework continues to evolve providing guardrails for the BOB ICS Digital and Data Strategy. The **ICS Design Framework** sets out the digital and data requirements for ICSs (Integrated Care Systems) and the **What Good Looks Like (WGLL)** framework defines the desired capabilities for systems and providers. Both have been extensively used to guide the Strategy.

National Policy Framework Evolution

2019:

- NHS Long Term Plan
- NHS England: Designing ICS in England

2020:

- NHS England: Next steps to building strong and effective ICS across England
- DHSC: Legislative proposals for a Health and Care bill
- NHS: Integrated Care Systems Design Framework

2021:

- NHSX: What Good Looks Like*
- Joint: ICP (Integrated Care Partnership) engagement in ICS implementation
- NHS: Thriving Places – guidance on development of place-based partnerships

2022:

- NHS: Engaging with communities
- Data Saves Lives
- A Plan for Digital Health and Social Care**

*** What Good Looks Like:** Success measures for digital transformation:

- Well-led
- Ensure smart foundations
- Safe practice

- Support people
- Empower citizens
- Improve care
- Healthy Populations

** **Digital Health and Social Care Plan:** There are three aims that underpin the Plan:

- **Digitise** - ensure all ICS constituent organisations have EPRs (Electronic Patient Records), minimum WGLL maturity and cyber resilience by March 2025.
- **Connect** - establish lifelong health and care records with appropriate and effective Population Health Management Systems.
- **Transform** - use developments in the NHS App and prevention technologies to help shape the health market and deliver change.

3.2 BOB Integrated Care System

Our ICS sits at the heart of the Thames Valley. It covers the geography across three counties, is coterminous with the local authority boundaries of Buckinghamshire, Oxfordshire, Reading, West Berkshire and Wokingham and has a population of nearly 2 million. Whilst overall our population enjoys good health and a relatively strong socio-economic condition, there are pockets of severe deprivation that the ICS must reach.

Our Population

- **Population growth:** Anticipated to be a 5% growth in the overall population size by 2042, with an additional 89,000 people living in the area, due to significant government investment in business and infrastructure (including transport links).
- **Ageing population:** The number of people aged over 65 is predicted to increase by 37%, an increase of 122,0000 people by 2042.
- **Long-term conditions:** Levels of long-term conditions, such as heart disease or diabetes, are generally lower than the national average, but tend to increase with age, with an estimated 60% of people over 60 having one or more long term conditions.
- **Recruitment & retention:** Due to the high cost of living and competitive local jobs markets, nursing staff are likely to have to spend 58% of their monthly salary on housing.
- **Deprivation:** 3% of our population, around 57,000 people, live in an area that is one of the 20% most deprived wards in England, with higher levels of homelessness, people living with long term conditions, childhood obesity, falls in elderly people, and diabetes and smoking rates amongst people with anxiety and depression.

Integrated Care Partnership Priorities

- **Promoting and protecting health –** to support people to stay healthy, protect people from health hazards and prevent ill health
- **Start well –** to help all children achieve the best start in life
- **Live well –** to support people and communities to stay healthy for as long as possible
- **Age well –** to support older people to live healthier, independent lives for longer
- **Improving the quality of and access to services –** to help people access out services at the right place and right time

BOB ICS in Numbers

- Health Budget: £3bn
- Population: 1.8m
- Health & Care staff: 68,000
- Primary Care Networks: 50
- Mental Health Trusts: 2
- Principle Local Authorities: 5
- Dental Practices: 182
- Acute Hospital Trusts: 3
- GP Practices: 159
- Ambulance Trust: 1
- Universities: 5
- Pharmacies: 260+

4. Vision, Principles & Objectives

Our Vision: Improve the lives and experiences of those accessing and working in our ICS, through building collective digital and data maturity across our partners and providers.

Our Objectives

- **Digitise** - We will deliver the Minimum Digital Foundations across our providers to reach a core level of digitisation across the system.
- **Connect** - We will use digital, data and technology to connect our care settings and improve experience for citizens.
- **Transform** - We will deliver the data foundations to provide the insights required to transform our system and better meet the needs of our population.

Our Design Principles

- **Population Health-led:** We will be led by population health data in evaluating our investments to further the outcomes of our population. We will utilise data across our investments to enrich the understanding of our population's health needs.
- **Experience & Needs Centred:** We will judge the success of our strategy and programmes based on our ability to meet end user needs, improve experience and provide digital access for everyone.
- **Open Collaboration:** We will openly collaborate to share assets, improve our collective digital maturity and overcome the challenges our system faces.
- **Common Frameworks & Standards:** We will adopt national frameworks and standards where appropriate and define shared standards for our ICS. Our investments and roadmaps will be aligned to our frameworks and standards.
- **Once for BOB:** We will use the ICS' commercial leverage to deliver best value for money. We will seek to build and utilise collective BOB capability. We will, where appropriate, deliver a single solution for all of BOB, avoiding duplication and ensuring seamless working.

5. Digitise our Providers

We will deliver the Minimum Digital Foundations across our providers to reach a core level of digitisation across the system equivalent to HIMSS EMRAM Level 5 by 2025. The foundational capabilities will provide a common level of digital maturity and consistency

across our health and care system. Changes in maturity can be assessed against WGLL using a Digital Maturity Assessment (DMA) to enable the ICS to track year-on-year progress, identify gaps and prioritise areas for improvement across our providers. In turn, this will realise direct benefits both for individual providers and in our ability to deliver system-wide pathways, workflows and experiences for citizens and our workforce.

5.1 Acute Electronic Patient Records

We will deliver a single Electronic Patient Record (EPR) for acute services across the three acute trusts within our ICS.

For our system, the converged platform will improve patient flow across trusts, improve the management of system data, such as the patient treatment list, and underpin the mobility of our workforce. This will provide Buckinghamshire Healthcare with an EPR capability, enabling critical, real-time access to health-related information for clinical teams. For our existing trusts with EPRs (Royal Berkshire and Oxford University Hospitals), the convergence to a single platform will enable closer alignment and integration of services, pathways, and data.

To deliver the benefits of convergence, we will require integrated governance for design, delivery, and clinical operations, to define and execute new integrated care models. We will conduct collaborative procurements involving pan-organisation engagement and governance.

Our convergence strategy requires a long-term commitment to transformation. Our medium-term priorities are:

- 2024: Procure Acute Electronic Patient Record
- 2025: Implement BHT EPR to Core MDF
- 2025: Start Convergence Journey across

5.2 Community and Mental Health Electronic Patient Records

We will extend and optimise our Community and Mental Health Electronic Patient Records based on best practices in our system.

Our Community and Mental Health providers will converge towards model configurations and best practices to optimise and extend their EPRs:

- Buckinghamshire Healthcare will extend and optimise their implementation of RiO for community service.
- Oxford Health will extend and optimise their implementation of RiO for mental health services and EMIS for community services.
- Berkshire Healthcare will continue to optimise their mature implementation of RiO across community and mental health services.

A RiO Centre of Expertise (CoE) will be established at Berkshire Healthcare. Buckinghamshire Healthcare and Oxford Health will leverage support from the CoE in meeting their Minimum Digital Foundations.

Our priorities for community and mental health are:

- 2023: Implement OH (Occupational Health) EPRs

- 2024: Establish BH RiO CoE
- 2025: All Community / MH (Mental Health) Providers Meet MDF

5.3 Digital Adult Social Care

We will develop a core level of digital maturity within CQC-registered Adult Social Care (ASC) providers.

Since 2019, we have worked closely with Adult Social Care (ASC) to support digital development; including rolling out NHSmail to support secure communications, encouraging compliance with the Data Security and Protection Toolkit (DSPT) to improve cyber maturity, and providing access to Shared Care Records (ShCR).

Levelling up the digital capabilities of our ASC providers is critical in developing multidisciplinary team care and increasing the richness of data shared between our providers to better inform the delivery at the point of care and prevent the escalation of care needs.
To continue to build on this foundation, we will support the delivery of digital care records into CQC-registered ASC providers to improve patient safety and capture richer data sets, which will support Population Health Management across the system. We will utilise innovations in sensor-based technologies to improve falls detection and, where possible, reduce preventable injury. We will deploy falls detection technologies to the 10% of those most at risk of falls residing in care homes.

To support and recognise skills development and enable greater mobility within the ASC workforce, we will deliver a Social Care Skills Passport.

- 2024: 80% of Providers with Digital Care Records
- 2024: Deploy Falls Prevention Technologies
- 2025: Deliver Social Care Skills Passport
- 2025: 100% of Providers with Digital Care Records

5.4 Common Infrastructure

We will take an opportunistic approach to delivering ICS-wide infrastructure and work on a basis of re-use by default.

Common and performant infrastructure provides opportunities to leverage the Integrated Care System’s buying power to benefit from economies of scale and could support mobility of staff between providers.

As a minimum, we will establish an Infrastructure Working Group across the ICS with the purpose of developing shared standards and sharing knowledge. We will review our existing infrastructure provision to identify opportunities to deliver shared infrastructure, including mapping of all digital capabilities. Our preference for all new requirements will be to re-use existing capabilities across our system, where possible.

Our priorities for Common Infrastructure are:

- 2023: Complete ICS Infrastructure Discovery
- 2024: Establish ICS Infrastructure Standards
- 2024: Establish ICS Cloud Strategy

5.5 Social Care Engagement

We will prioritise maintaining close relationships with our partner organisations in Social Care to build digital maturity.

Building on the foundations established through the creation of this Strategy, we will seek to engage further with our colleagues in Social Care, ensuring that we build a consistent level of representation across all our existent governance forums. We will ensure a joined-up approach is taken in the utilisation of digital solutions across our providers, and work collaboratively to identify opportunities to build digital maturity.

Our priority for social care engagement is:

- 2023: Ensure consistent representation across all governance forums

5.6 Cyber Security

We will support our providers to improve cyber maturity and risk management against the emerging threat landscape.

Our providers currently exhibit varying levels of cyber maturity, with Berkshire Healthcare recognised as a leader in cyber security. Alongside promoting cyber standards within our governance and controls, we will develop an ICS Cyber Security Strategy for improving cyber maturity.

The Integrated Care Board will provide oversight and direct targeted investment to mitigate areas of vulnerability across the system, including supplier management. We will seek to pool skills across the system to improve access to cyber skills for our providers and increase cyber awareness among all staff.

Our priorities are:

- 2024: Establish ICS Cyber Security Strategy
- 2024: Improve Supplier Cyber Risk Management

5.7 Primary Care Electronic Patient

We will carry out an extensive consultation on the requirements of GP principle clinical systems in readiness for the closure of the GP IT Futures framework.

We will assess the merits of all clinical system providers, including new market entrants, on their ability to deliver wider strategic objectives, operational and clinical obligations, and improved patient experience and outcomes. The assessment will include their interoperability with subsidiary clinical systems to ensure that the objectives of seamless care between settings are realised, while balancing this with a level of choice GPs will have in the commissioning of their systems.

Our priority for General Practice Electronic Patient Records is:

- 2024: Re-procure GP principle clinical systems

Electronic Observations: Berkshire Healthcare NHS Foundation Trust (BHFT) has implemented electronic observations to collect patient vital signs and observations digitally. Observations are remotely and automatically reviewed against Early Warning Scores to identify patients likely to deteriorate or needing intervention from clinical teams. The technology is estimated to save 15% of clinician time whilst improving patient safety and outcomes. This has included earlier detection of patients with Sepsis and reducing the risk of further deterioration.

5.8 Building Capability

Our ability to release the benefits from our investments in Digital, Data and Technology is dependent on building the capability and skills across our system, for our digital teams, our workforce and our citizens. Alongside designing services that support reducing inequities in access, we must work with our partners to support the improvement of the digital inclusion and health literacy of our citizens.

- **Our Digital Teams**
  Collectively, we are stronger than the sum of our parts. We will seek to share the strength of our respective teams across the system for harder to access skills, for example User Centred Design, Cyber Security and Architecture. We will establish ICS-wide networks to share knowledge and best practices, in alignment with DDaT and Clinical Safety Standards.
  To build a continued pipeline of talent, we will seek to develop a digital and data apprenticeship programme aligned to our future needs across the system.

- **Our Workforce**
  It is vital that our workforce feel confident in their use of digital, their ability to utilise data, and they are able to promote the use of digital services to citizens, where appropriate. For priority groups, we will perform a baseline assessment of both digital skills and workforce capability across our providers, utilising the Health Education England Digital Skills Assessment Tool. We will benchmark the minimum talent required to meet and sustain HIMSS level 5.
  We will work collaboratively with our education providers and learning teams to improve digital and data coverage within learning programmes.

- **Our Citizens**
  We will work with partners to improve digital inclusion and health literacy for our citizens. We will utilise existing successful programmes in place across our Local Authority, Voluntary Sector and Academic partners to improve digital inclusion across our geographies.
  We will embed inclusive design methods in our approach to delivery of new services. Data and insights will be used to proactively monitor and identify areas requiring greater investment to improve equitable access.

Our Priorities:

- 2023: Baseline Skills Assessment and Curriculum Development
- 2024: DDaT Apprenticeship Programme
- 2024: Social Care Skills Passport

5.9 Connect Our Care Settings

We will use digital, data and technology to connect our care settings and improve experience for our citizens. Integrated care models are underpinned by integrated and common technologies to allow care teams to work together and for data to flow across the health and social care system. For citizens, particularly those requiring support from multiple services, we will seek to deliver common experiences and empower those who wish to self-manage their conditions.

5.10 Shared Care Record

We will deliver a single Shared Care Record (ShCR) for all care settings across the ICS footprint.

There are currently multiple Shared Care Records in use across the BOB ICS footprint. We will move to a single ShCR to improve the breadth and depth of data available to our clinical teams at the point of care wherever patients attend across our health and care system.

Based on an independent review, we will converge to the Thames Valley and Surrey (TVS) Care Record. This approach will provide the most economically viable solution and architecturally meet the needs for both shared care and population health use cases.

Our ambition is to support broader integration of data from neighbouring Integrated Care Systems, such as Frimley.

Our priorities for our Shared Care Record are:

- 2023: Cross-ICS Shared Care Record
- 2024: Intra-ICS Data Feeds to ShCR
- 2024: Inter-ICS Data Sharing Enabled

5.11 Virtual Care

We will protect inpatient capacity by delivering virtual care for our citizens closer to home.

We will create a minimum of 750 Virtual Ward beds across BOB by 2024. We will implement Virtual Wards in the Respiratory pathway with estimated bed day saving of 2 days per inpatient stay.

Oxford University Hospitals have demonstrated good practice in remote monitoring for Diabetes and Cystic Fibrosis. We will use the learning from OUH (Oxford University Hospitals) to underpin our cross-system implementation and identify other pathways where Virtual Wards hold value; for example, Heart Failure and End of Life.

Active patient monitoring will support patients to live independently in their place of residence and promote self-care, for those who are able to better manage their own conditions. In turn, reducing pressure on Primary Care and Emergency Services.

Our investment in digitising and connecting the system is critical to enabling effective virtual care.

Our priorities for Virtual Care are:

- 2023: Implement 500 Virtual Ward Beds
- 2024: Develop Virtual Ward Pathways for HF / EOL
- 2024: Increase Virtual Ward capacity to 750 beds

5.12 Digital Inclusion

We believe that digital inclusion is about ensuring that everyone can choose to access the internet and have the skills to use it.

In the South-East of England, it is estimated that 18% of adults lack the essential digital skills needed for day-to-day life. Access to digital devices and the costs of access to digital services such as mobile broadband can provide barriers to accessing digital services for the communities who often have the greatest need for access.

We will lead locally targeted digital inclusion and access programmes to support all of our population to have access to digital services. We will establish a system-wide digital inclusion charter that unifies how voluntary sectors, local authority and NHS bodies collaborate and coordinate our resources to support our population.

We will apply the NHS digital service manual for all public-facing digital health services to build consistent, usable services that put people first. We will use rigorous user research practices to understand the needs of our service users and ensure people with different physical, mental health, social, cultural or learning needs can use our services.

5.13 Digital Patient Engagement

We will converge to the NHS App for engagement and digital access for our citizens.

There are several patient portals currently in use across the BOB Integrated Care System. We will seek to rationalise the number of patient portals with the aim of converging to the NHS App. Where the NHS App does not meet our local needs, our preference will be to re-use existing products in use across the system before introducing new channels. Our priority functionality will be self-triage, viewing test results, medications, history, correspondence and appointment management.

The NHS Login will be adopted as the default digital identity providers for citizens access digital health and care services.

We will define our ambition and standards for digital patient engagement in an ICS Digital Patient Engagement Strategy. Our vision is to create common digital experiences across our system that truly meets our citizen's needs.

- 2023: ICS Digital Patient Engagement Strategy
- 2025: Consolidate Patient Portals
- 2025: Converge to NHS App and NHS Login
- 2025: 75% of patients registered on NHS App

Patient Communications: Buckinghamshire Health NHS Trust (BHT) conducted user research across Cancer and Gynaecology pathways with an ambition to improve patient

experience and communications. Using User Centred Design techniques, the Trust engaged patients, clinical teams and digital teams to understand current experiences. The Trust identified 45 evidenced opportunities for improving the pathways. This included improving letter templates and proactively highlighting accessibility alerts to support patients navigating complex pathways.

5.14 Primary Care

We will capture interoperability requirements to enable multidisciplinary team and inter-practice working.

Requirements will be in the context of achieving greater efficiency in general practice and the wider health system, more effective demand management, and improvements to patient experience and outcomes. Interoperability will ensure that all health care settings are utilised most optimally ensuring that avoidable touch points within each care setting are minimised and that patients can be directed to the most appropriate point of care first time. Interoperability between practices will enable them to load balance capacity within their PCNs by prioritising and directing patients to where they can be treated in the timeliest manner.

Pharmacy, Optometry and Dentistry services will be transferred from NHS England to BOB in 2022. Over the next 12 months the development of clear priorities to support digitisation of these services will be established.

Our key priority is:

- 2023: GP interop requirements specification

5.15 Diagnostics

Diagnostics play a critical role in delivering safe care and reducing current backlogs across Elective Care services. Across England, it is recognised investment is required in diagnostic services to meet the rising demand and ageing equipment.

At the time of writing, the South East Regional Diagnostics Strategy was in draft. We will review and align the BOB Digital and Data Strategy for Diagnostics to the South East Strategy following finalisation.

5.16 Maternity

Pregnant people know their pregnancy best and we want to put them at the heart of maternity service design, while leveraging digital and data solutions to give staff more time for the delivery of care and support. Maternity and neonatal will be a digitally enabled service supported by a shared, collaborative and integrated infrastructure with appropriate pathways and data that are suitable to the skills and requirements of all our service users and staff.

We will implement our maternity digital strategy priorities which are:

- Enable Digital Record Keeping
- Empower Pregnant People

- Deliver Data Driven Care
- Equip Our Workforce
- Drive For A Unified Future

5.17 Transform Our Data Foundations

Data is a key enabler to achieving the ICS strategy. OB ICS is working towards personalised care by applying population health data driven decision making. Population Health Management (PHM) needs to be at the heart of all analysis, championed across the system by leaders, and verified with clinicians. The ICS will apply segmentation techniques to identify appropriate population cohorts for health and care interventions and re-identify individuals to provide targeted, proactive support where needed. Delivering the data foundations for BOB will be critical to developing this person-centred approach alongside other key priorities of this strategy. Data is inextricably linked to the ICS's aims demonstrating the intrinsic value of aptly utilising data.

Data will be used to address four key use case areas:

- Direct care of individuals
- Research and innovation
- Improving population health
- Planning and improving services

By prioritising these use cases, resources will be directed where most appropriate at a given point in time. We will create a user research function and design authority to actively monitor priority-use cases for these areas. We will also enable continuous delivery of improvements on behalf of the ICB to ensure they are person-centred. This approach will help to ensure the impact is felt where it matters whilst serving the overall strategy of the ICS.

Current situation:

- Data and decision-making priorities in BOB are handled within individual trust and provider strategies, with no system alignment.
- No common ICS control of data feeds that flow between providers to enable a single view of a citizen.
- Pockets of analytical support capability within individual organisations.
- Significant analyst time spent on reports or ad-hoc analysis without generating value-adding insight.

Data foundations to address

1. **Governance and Data Sharing**: To establish the processes and oversight required to maintain a linked longitudinal dataset and give the right people access to the right level of detail to empower person-centred care.
   To improve maturity we will…:
   - Form an ICS Data Leadership and Governance group to oversee key initiatives.
   - Establish a Data Charter to underpin data sharing activities across the ICS.
   - Promote collaboration opportunities, enabled by improved data sharing.

2. **Technical Architecture:** To consolidate the systems and datasets across the ICS including the Shared Care Record, Adult Social Care Record, Electronic Patient Record, Population Health System and Secure Data Environment.
   To improve maturity we will…:

- Define, procure for and implement a common ICS data architecture to bring priority data flows in the ICS under control and manage data feeds and integrity.
- Complete a stock take of the datasets, collections and reporting in place across the system.
- Maximise the value of the Secure Data Environment (SDE) for collaboration and innovation.

3. **Capability and Capacity**: To build the capability and provide capacity where needed across the ICS to support partner data functions. The capability will generate insight, share best practice and help partners realise the potential benefits of advanced analytics such as Automation and Machine Learning through use case driven development.
   To improve maturity we will…:
   - Establish a Centre of Excellence for Data, including learning programmes and Community of Practice.
   - Agree a shared responsibility for key capability between the ICS and local system functions, to make the most effective use of talent across the ICS.
   - Build a team that can respond rapidly to requests, support data teams within partners and produce proof of value analysis to support decision making and funding applications.

Describing the data architecture: Products and services will be supported by a common ICS architecture. A summary of the target view of this architecture is provided on the next page. This is directly based on the key recommendations and the proposed target architecture diagram from third-party independent reviews produced for BOB ICS.

Products and services colour coded with respect to their use case will be underpinned by a series of key functions in the data management layer. All flows will also need to be governed by relevant data sharing policies and standards, and security, including Role Based Access Controls (RBAC). Key components of the summary target architecture are housed in three domains:

- **Data Management**
  - **Source systems (EPRs, back office, etc.):** the collection of operating systems in ICS partners comprising all clinical and non-clinical data. This is the true source of all data across the BOB network.
  - **Data Mesh:** a modern (tech agnostic) data management design to manage the whole collection of extracts from source systems. This is a long-term vision and not a mandatory requirement for architecture in the first instance.
  - **Central data store:** an ICS-wide data store allowing both storage and management (data engineering) of persisted data. This will be the single source of truth to feed ShCR, ICS intelligence platform, PHM and SDE.

- **Direct Care**
  - **Interoperability:** the collection of API management, messaging and orchestration processes that underpin clinically reliable and real-time data sharing between clinical operating systems and the clinician-patient interaction.
  - **Shared Care Record:** the longitudinal patient record that summarises data from the central data store and, to a lesser extent, from source systems via the interoperability domain; again, informing the clinician-patient interaction.

- **Secondary Use**
  - **ICS Intelligence Platform:** the data & analytics platform serving as the environment to generate actionable insight fed from persisted one-source-of-truth data in the core data platform and, by exception, the ShCR.

- **Population Health Management:** the solution to PHM will be heavily coupled to the features of the ShCR and likely of the same supplier. Again, it will be fed principally by the central data store but also from the ShCR and ICS intelligence platforms.
- **Secure Data Environment:** the separate environment for research on approved data provided from agreed sources to support data linkage and data quality assurance activities.

Currently the ShCR and PHM systems are both hosted at provider level on either separate product. As defined in the 'Connect our Care Settings' section, we will bring these functions together under a single product to enable ShCR and PHM.

The national directive on the Federated Data Platform will be given due consideration and incorporated into planning. Depending on the adoption approach taken, this platform may provide a solution with the required segregation of data and permissions capabilities to combine hosting and access to direct care secondary use cases described above.

5.18 Deliver Our Data Foundations

Key products and services will support delivery of our data use cases:

1. **Direct care of individuals**
   Shared Care Record: A single instance of the shared care record for BOB, to integrate all person-centred data including social care in a longitudinal dataset. Providing clinicians and carers with the right data at the right time for decision making.
   Current state: Renewed Graphnet instance is live, using Cerner HIE to support dataflows.

2. **Planning and improving services**
   ICS Intelligence Platform: A self-service analytics platform to support dedicated analytics teams and individuals to draw on operational information from the EPR, including HR and Finance, ShCR and more data sources to generate insights.

   Current state: No current platform in place, Business Intelligence supported by CSU.

3. **Improving population health**
   Population Health Analytics: A product linked to the wealth of data in the shared care record that allows for rapid aggregation and reidentification to unlock new insights and respond to the changing requirements of the ICB.

   Current state: Several products and services, including mature solution and support for Connected Care in Graphnet, but no solution at ICS level.

4. **Research and innovation**
   Secure Data Environment: Anonymised data in a secure environment for collaborative working with academic and industry partners. Building alliances and sharing insights locally and nationally.

   Current state: SDE at OUH in process of being established, governance yet to be agreed.

The ICS will also establish the following initiatives to support user driven development, collaboration and innovation across all ICS partners.

5.19 User Research Function and Design Authority

We recognise that approaches should be user needs driven.

The user research function will provide clear understanding of current and future use cases for data and digital across BOB, leveraging local best practice.

The design authority will establish frameworks and processes for ensuring that products and services are designed and prioritised in line with the aims of the ICS and follow an agreed approach.

Analytics Centre of Excellence (CoE), and Community of Practice (CoP)

BOB will establish a CoE with a focus on Advanced Analytics. It will ensure the right access to training and development is in place across the ICS, sponsoring programmes for cross ICS learning.

The CoE team will be tasked with generating analysis to support the ICB with specific requests. They will also supplement partner organisations (including Primary Care Networks) with specialist analytical skills such as machine learning that can be difficult to source. The CoE will focus on testing and refinement of prioritised use cases.

The Community of Practice will facilitate shared learning and innovation. It will support partner organisations and look beyond the ICS for new ideas and innovative approaches.

Summary Target Architecture for BOB ICS

The target architecture for BOB ICS will link together shared care records with ICS intelligence and population health management from core data store that is taken from a data mesh across the different healthcare organisations in the ICS. In addition, the core data store will have an approved cleansed data set to feed the Secure Data Environment.

Detailing an implementation plan for delivering the BOB ICS Data Strategy

The national data strategy for health and adult social care ‘Data saves lives’, published this year, has laid out recommendations for health and care systems. This strategy encompasses many of the considerations whilst tailoring the recommended activities to reflect the unique situation within BOB.

Our roadmap lays out the programmes of work that have been identified to date through the development of this data strategy. This forms a plan for how we can continue to improve the ICS digital and data maturity, by laying the right data foundations. Key roadmap programmes will focus on:

- Population Health Management
- Secure Data Environment
- Capability and Centre of Excellence
- ICS Intelligence Platform

In particular, the **Population Health Management roadmap** in BOB will measure progress against the maturity matrix for the four Is: Infrastructure, Intelligence, Interventions, and Incentives.

National direction will be translated by the ICB into key priorities and reflected at place level, recognising different needs within Buckinghamshire, Oxfordshire and Berkshire West.

The **Secure Data Environment** hosted by OUH is nascent and the direction and governance of this initiative are to be finalised at the time of developing this strategy. The potential benefits of this work are widely recognised and anticipated.

The **ICS intelligence platform** will be case driven, focusing on identified priorities and then self-service reporting. The roadmap for **Capability and Centre of Excellence** starts with developing a detailed data strategy for the ICS to use for implementation. This is a critical next step to build on this work. Bringing this strategic imperative full circle, this should seek to address the three data foundations: governance and security, technical architecture, and capability. Notable examples of detailed recommendations considered whilst defining this strategy are included on “Delivery Roadmap” section.

We will enable primary care clinicians to make more informed decisions about the care of their patients. Information shared by care settings with general practice will be relevant to their continuing care so as not to overload clinicians but provide pertinent information when and where it is needed, thus enabling primary care clinicians to provide optimal care. We will provide dashboard information to GPs on UEC admissions enabling primary care clinicians to provide effective continuity of care.

We will work collaboratively with PCNs and GP practices to assess and plan clinical workload with the introduction and development of analytical capabilities to provide insight on demand and capacity which can readily determine ways in which this can be most effectively managed.

Go Forward Implementation Priorities

1. Provide guidance and a framework for prioritisation, sizing and costing of analytical requests.
2. Pool operational dashboards where appropriate and provide templates for consistency.
3. Conduct options analysis for cloud products and solutions, with a pragmatic ICS adoption plan.
4. Integrate wider determinants into ICS wide datasets to tackle health inequalities.
5. Compile a central ICS store of meta data and account for data opt outs and restrictions.
6. Foster alliances and encourage innovation through hackathons and show and tell sessions.
7. Establish teams capable of completing rapid analysis to support the ICB with funding bids.
8. Establish a data skills framework and update job profiles and development tracks to reflect this.

Thames Valley & Surrey Care Records: TVS Care Records provides a Shared Care Record across Buckinghamshire Berkshire West, Frimley, Milton Keynes, Oxfordshire and Surrey. The Shared Care Record provides clinical teams with access to patient information across care settings and geographies. This provides clinicians with access to more information to inform clinical decisions and improve quality of care. For patients, this reduces the amount of time required to repeat information and ensures critical information is available regardless of where they access healthcare.

Value proposition for the ICS

Other strategic pillars have a particular impact on one of more of the design principles defined at the top of this strategy and the aims for the ICS. Data foundations will support the system

to make the data available, put capability in place and share knowledge and resources to underpin the entire strategy and make data driven decisions that are person centred, to benefit the BOB population.

- Population Health-led
- Experience & Needs Centred
- Open Collaboration
- Common Frameworks & Standards
- Unique Collective Value as BOB

6. ICS Governance

Together, we are greater than the sum of our parts. We will operate a governance model that promotes our unique collective value, is facilitative in nature and supports delivery of our Digital and Data Strategy.

Leadership: The ICB will be facilitative and enabling, bringing alignment at a system level by focusing on collaboration between partners and 3rd party organisations around a set of agreed aims. The ICS leads the development of a digital and data strategy and reduces barriers to the success of digital and data initiatives. The structure above is an initial framework from which the ICS governance will emerge and highlights the need for inclusion at every level. The priority for governance at this stage is the need for free-flowing information from the ICB to the frontline. Currently the system leadership is establishing, coordinating and empowering ICS-wide forums, boards and committees to undertake specific activities, taking guidance from their activities to inform decision making. With progress on key strategic pillars, the recruitment of key roles and the realisation of benefits, the strategy and the structures will solidify.

Governance of investment: Through the monitoring of progress against contracts the ICS provides assurance on sound management of NHS resources as well as the identification, management and realisation of benefits. With a responsibility for approving the release of funds for digital initiatives there is an obligation to review and challenge the rationale and evidence underpinning planned initiatives. In addition to monitoring progress against investment targets and organisational objectives, there is a requirement to track progress and achievement of enumerated benefits.

Reporting: The NHS financial framework will enable systems to collaborate and explore options to access resources through working together at place and at scale. There is an obligation to report to the ICS for review collectively and to the level of the ICB. Comprehensive and regular reporting enables the oversight capabilities of an effective ICS.

Standards and common approaches: With this facilitative role the ICS has an obligation to establish common standards to develop system-wide benchmarks. These standards enable alignment and allow seamless collaboration to ensure common value for BOB is realised, this will include but is not restricted to standardised functionality or operability of procured systems, data sharing and Information Governance. We will form an ICS Data Leadership and Governance group to oversee key initiatives and establish Data Charter to underpin data sharing activities across the ICS promote collaboration opportunities, enabled by improved data sharing. The ICS will also champion Agile methodologies across our providers and workforce to support a common citizen-centric approach to DDaT initiatives and transformation.

Governance Map

Our governance will remain flexible as our organisation develops. The below offers a vision for how we will develop symbiotic relationship between the ICS and providers. It will offer a guide to our governance as we develop over this strategy's lifecycle.

The governance map from ICB level to ICS Digital Collaboration level to Provider including Primary Care level. The ICB Chief Information Officer will oversee the delivery and annual refresh of the strategy, the ICS will then enable digital collaboration with the system through a committee and will oversee analytics, digital infrastructure and cyber security, the Providers will then have their own strategies and projects with a local lens to ensure they meet the overall ICB strategy commitments.

7. Digital & Data Maturity (ICS)

A Digital Maturity Assessment (DMA) was completed against the NHS England What Good Looks Like Framework. The assessment was conducted for each individual partner organisation and at an ICS level. Assessment of Partner Organisation maturity indicated that there was significant variation between organisations with some displaying best practice while in others there are clear opportunities to develop and mature.

Senior stakeholders from across the BOB ICS informed and steered the WGLL analysis of both partner organisations and the BOB ICB as a single entity allowing the development of a template of their relative digital maturity.

What Good Looks Like

NHS England developed the What Good Looks Like (WGLL) Digital maturity framework at both a system and organisation level in 2021 defining the activities, actions and structures that could enable the most effective operations. The framework enables NHS leaders, as they work within their system and with their partners, to appreciate their relative maturity and to provide guidance on where effort and resources can be applied to the best operational effect.

The assessment team developed a 5-point scale against which the organisation is assessed with the 'Optimised' score reserved for an organisation that exceeds NHS England's recommendations.

The WGLL framework has 7 success measures: Well led, Ensure smart foundations, Safe practice, Support people, empower citizens, improve care, and Healthy populations.

Current ICS Maturity of WGLL Framework*

- **Managed:**
  1. Well Led: Governance is in place in individual organisations at varying degrees, but ICS-level roles and processes need implementing.
  2. Ensure Smart Foundations: Shared care records are in use and EPRs are implemented at 2/3 Acute trusts. Collaboration is emerging.
  3. Safe Practice: Cyber security standards and practices vary across all Partner organisations. But some demonstrate marked maturity.
  4. Support People: Variance across the ICS in enablement of staff and inability to flexibly work between trusts limits maturity.

- **Initial:**
  5. Empower Citizens: All providers prioritise citizens, but an ICS-wide strategy for engagement is needed to improve maturity.

6. Improve Care: Emergent developments in Virtual care offer an avenue to maturity. It is in an early phase. Decision support is in use but not consistently.
7. Healthy Populations: PHM is a priority, but activity is still a local priority and the ICS is intent on convergence.

* Maturity levels in order: Initial, Managed, Defined, Measured, Optimised

See “WGLL Metrics” section for all WGLL metrics used.

7.1 Summary Maturity Assessment

- **Oxford University Hospitals NHS Foundation Trust (OUH):** Having established OUH as a digitally mature organisation with a Shared Care Record and a mature EPR system the Trust has already achieved HIMSS EMRAM level 6. Steps have been taken to leverage data to inform, shape and optimise care with a data analytics platform, a new data warehouse and a new Secure Data Environment (SDE). While Staff are empowered there are areas to enable staff and opportunities to coordinate in specific areas with other partner organisations. OUH is also leading through their international reputation and collaborative relationships with both Oxford University and Oxford Brooks university.

- **Buckinghamshire Healthcare NHS Trust (BHT):** BHT have appointed a number of key individuals in recent months and there is an acknowledgement that the maturity of the organisation in all areas requires attention. Steps are already started improving digital and data maturity. The development of a Business Case for procuring a new Electronic Patient Record is ongoing with cooperation and collaboration between BHT and other partner organisations.

- **Royal Berkshire NHS Foundation Trust (RBFT):** Royal Berkshire Foundation Trust are generally mature in the context of WGLL as they have a digital strategy that formalises the framework for the development of their digital platform over the next 4 years 2022-2026, this strategy is also supported by their board. They have an EPR and a shared care record which helps them collaborate with local authorities. The workforce has regular EPR training, and the trust is commencing a multiyear CQI initiative which encompasses this drive for digital first and innovation. They are looking to offer a patient portal and have successfully developed a relationship with the University of Reading.

- **Berkshire Healthcare NHS Foundation Trust (BHFT):** Berkshire Healthcare Trust have taken significant steps in their maturity as they have developed a well organised leadership structure. BHFT have also established an EPR system and a Shared Care Record. They have also improved their cybersecurity as they have ISO27001 & Cyber Essentials Plus in place. Berkshire Healthcare Trust have taken steps to ensure that staff have the ability to work remotely, with video consultations being utilised before the pandemic hits. BHFT also works closely with design partners in Sharon and SilverCloud.

- **Oxford Health Foundation Trust (OHFT):** OHFT meets the recommendations of the WGLL framework in both Safe Practice and Smart Foundations. The Trust are currently working to optimise their EMIS, RiO and Cerner EPR solutions for their community hospitals. This work, alongside plans to develop cyber resources as the digital agenda progresses, indicates these areas will remain a strength. OHFT have

identified significant opportunities to mature their workforce literacy and are in the process of appointing resources to address this. There are also steps underway to improve the way in which their citizens inform and refine care, to become more informed and empowered in their approach to designing services.

7.2 Target 2025 What Good Looks Like Maturity

We have used the delivery roadmap and the below costed portfolio of the associated initiatives to project our ICS's Digital Maturity at the end of this strategy's lifecycle.

By doing so, we hope to highlight areas of future development for our ICS. It provides an aspirational vision of what we could be in the future, beyond what we feel we are able to deliver in the coming years.

This estimation is based on a close reading of the What Good Looks Like Framework. For reference, optimised involves going beyond the remit of the WGLL framework to produce a forward-looking tech first organisation.

We will largely meet the requirements of WGLL by the end of this strategy's lifecycle.

Future ICS Maturity of WGLL Framework

- **Defined:**
  1. Ensure Smart Foundations.
  2. Safe Practice.
  3. Support People.

- **Measured:**
  4. Well Led.
  5. Empower Citizens.
  6. Improve Care.
  7. Healthy Populations.

* Maturity levels in order: Initial, Managed, Defined, Measured, Optimised

8. Costed Portfolio Summary

Summary Costs Context: The BOB ICS Digital and Data strategy sits within the context of a large and complex financial landscape. To achieve the economies of scale and ambitious transformative objectives that we have set out, BOB ICS will leverage the expertise of its 745-wide IM&T (Information, Management and Technology) workforce as well as the support of the wider system.

The table, below, provides a summary view of the detailed components of the digital and data strategy costed portfolio. A further detailed breakdown of each thematic area and the cost line is included in the supporting financial models.

It is important to note that this view represents the latest and most current view of the costs provided and does not represent budgeted or formally approved funding allocations. Updates to costs and funding may become realised, for which Trusts and the ICS should factor into their financial planning.

Cost Modelling of Roadmap Activities

Roadmap Initiative: (Funding Stream/ Funding Status/ Sub-Total)

- Acute and CMH EPR Imp.: (Matched/ Pending Approval/ £91,700,000)
- Digitising Adult Social Care: (Matched/ Agreed/ £640,000)
- Common Infrastructure: (Local/ Pending Approval/ £776,531)
- Workforce Digital Skills (Local/ To Identify/ £354,322)
- DDaT Talent: (Local/ To Identify/ £606,598)
- Shared Care Record costs: (Local/ Agreed/ £414,805)
- Virtual Care: (Matched/ Agreed/ £10,700,000)
- Citizen Access: (National*/ To Identify/ £1,673,715)
- Diagnostics & Imaging: (National**/ £25,000,000
- Population Health Management: (TBC/ To Identify/ £894,954)
- Secure Data Environment: (Matched/ Pending Approval/ £10,000,000)
- Cyber Security: (Local/ Agreed/ £345,000)
- Research: (Local/ To Identify/ £829,127)

The projected total cost of implementing the Digital and Data Strategy (’22 to ‘25) is **£143.9 million.**

*Assumes no further spend on Patient Portals and delivery of national NHS App meets local need.
**Funded through local network.

A. Appendix A: WGLL Metrics

Definitions of our WGLL numbers and categorisation used throughout this strategy.

Our What Good Looks Like Metrics

We have used these numbers and categorisation throughout this strategy. You should read these definitions in the context of the What Good Looks Like Framework (https://transform.england.nhs.uk/digitise-connect-transform/what-good-looks-like/what-good-looks-like-publication)

Digital & Data Maturity (ICS)

There are varying levels of maturity across the ICS. It shows how the local maturity context can be a complicated factor when devising ICS wide recommendations and success criteria. It highlights the strengths we have in our system and the need to level up the system.

Our results come from a What Good Looks Like Maturity Analysis on the major health providers in BOB with more detail for each provider presented on the next page. It gives us a useful way to assess our maturity beyond our strategic pillars.

Maturity Matrix

What good looks like maturity ratings;*

- Buckinghamshire Healthcare NHS Trust
  - Well-led: 2
  - Ensure smart foundations: 2
  - Safe practice: 2

    - Support people: 2
    - Empower citizens: 2
    - Improve care: 2
    - Healthy Populations: 2
- Oxford University Hospitals NHS Foundation Trust
    - Well-led: 4
    - Ensure smart foundations: 4
    - Safe practice: 3
    - Support people: 3
    - Empower citizens: 3
    - Improve care: 3
    - Healthy Populations:3
- Royal Berkshire NHS Foundation Trust
    - Well-led: 4
    - Ensure smart foundations: 3
    - Safe practice: 3
    - Support people: 3
    - Empower citizens: 3
    - Improve care: 3
    - Healthy Populations:3
- Berkshire Healthcare NHS Foundation Trust
    - Well-led: 4
    - Ensure smart foundations: 4
    - Safe practice: 4
    - Support people: 4
    - Empower citizens: 2
    - Improve care: 3
    - Healthy Populations:3
- Oxford Health NHS Trust
    - Well-led: 3
    - Ensure smart foundations: 4
    - Safe practice: 4
    - Support people: 2
    - Empower citizens: 2
    - Improve care: 2
    - Healthy Populations:3

* Initial: 1, Managed: 2, Defined: 3, Measured: 4, Optimised: 5

The assessment identifies variation in maturity across the constituent organisations highlighting Buckinghamshire's lack of an EPR as the most notable gap. The lack of a common Shared Care Record at the time of assessment also meant that the ICS as a whole was not considered digitally mature in terms of 'Ensure Smart Foundations', despite the individual trust's demonstration of maturity.

B. Appendix B: Acronym Glossary

All definitions of acronyms used throughout the Strategy. All acronyms that have been used to create the Strategy have been collated and defined here in order of appearance for reference purposes.

ASC	Adult Social Care

BHFT	Berkshire Healthcare NHS Foundation Trust
BHT	Buckinghamshire Healthcare NHS Trust
BOB	Buckinghamshire, Oxfordshire and Berkshire West
COE	Centre of Expertise
CoP	Community of Practice
CQC	Care Quality Commission
CQI	Continuous Quality Improvement
DDaT	Digital, Data and Technology
DMA	Digital Maturity Assessment
DMA	Digital Maturity Assessment
DSPT	Data Security and Protection Toolkit
EMIS	Egton Medical Information Systems
EMRAM	Electronic Medical Record Adoption Model
EPR	Electronic Patient Record
FTE	Full-Time Equivalent
HIE	Health Information Exchange
HIMSS	Healthcare Information and Management Systems Society
ICB	Integrated Care Board
ICP	Integrated Care Partnership
ICS	Integrated Care System
IM&T	Information, Management & Technology
MDF	Minimum Digital Foundations
MH	Mental Health
NHS	National Health Service
OH	Occupational Health
OHFT	Oxford Health NHS Foundation Trust
OUH	Oxford University Hospitals NHS Foundation Trust
PCN	Primary Care Network
PHM	Population Health Management
RBFT	Royal Berkshire NHS Foundation Trust
SDE	Secure Data Environment
ShCR	Shared Care Record
TVS	Thames Valley and Surrey
UEC	Urgent and Emergency Care
WGLL	What Good Looks Like