Digital Strategy

2022 – 2025

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1.0 Executive Summary

This Digital Strategy sets out the path forward for taking Western Health into its digital future. In line with the organisational Strategic Plan, it aims to build on existing initiatives and embed digital technology and data across all clinical and non-clinical services, as a critical enabler to deliver Best Care for the people in the West.

There are 7 key objectives, each with a range of actions over the coming years, which collectively benefit and support our patients, staff and system partners. The implementation of this strategy requires a pragmatic approach to align with already funded programs, current and future expansions and amalgamations, and COVID-19 recovery.

1 Health information is available where, when and for those who need it
- easy access / one system
- referral information
- secure access

2 Data can be exchanged securely and used with confidence
- data governance
- cybersecurity
- safe information sharing (Health Information Exchange)
- information management

3 Technology is contemporary, connected and aligned across sites
- contemporary corporate systems
- alignment in capital developments and amalgamated services
- streamlining applications

4 Digital technology is enhancing Best Care and optimising patient experience
- empowerment through virtual care
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- vital signs monitoring

5 Staff are supported, connected and empowered by data and digital technology
- employee portal
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6 Planning and decisions are informed by real-time business intelligence and analytics
- data and analytics
- performance dashboard
- command centre
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7 Western Health is well-positioned to continue driving innovation
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- data for research, quality improvement and innovation
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- career pathways

2.0 Introduction

2.1 WESTERN HEALTH'S STRATEGIC DIRECTION

In 2021, Western Health (WH) launched its new strategic plan comprising the vision of Together, we deliver the healthcare of the future. Within this collaborative and innovative context, five Strategic Directions guide the way on how we will strengthen our partnership with patients and families, our staff, our services, our relationships and our innovations over the coming years. Each of these Strategic Directions have strong digital and data components. Deliberately, digital, data and technology are not one priority on itself but a critical enabler across all aspects of WH (see chapter 3 and Appendix A) for alignment between Strategic Direction 2021-2023 and this document.

Beyond its vision and strategic directions, Strategic Direction 2021-2023 is also built on four Guiding Principles: Simple, Connected, Sustainable and Innovative. These words are more than descriptive adjectives. The guiding principles represent all that WH is and aspires to be, providing helpful and meaningful design and development principles for existing and new data, technology and digital enablement initiatives:

Guiding Principle	What this means for digital and data
SIMPLE	Data, reports and systems are easy to understand and navigate One point to access relevant day to day information (one dashboard) A single electronic medical record for the patient across the organisation One version of the truth, i.e. reliable data that can be trusted
CONNECTED	Enabling seamless patient journeys within and beyond WH Enabling connections between people, organisations and workplaces "Systems talk to each other" Consistency across growing number of WH services and locations Use digital technology to connect with patients, and empower them and their families with the right tools, information and connections
SUSTAINABLE	Becoming self-sufficient, i.e. build in house capability Support and empower staff to use data and digital technology to work in the most safe, reliable and efficient way Considering vision and longer-term considerations when building or redesigning new digital solutions
INNOVATIVE	Contemporary corporate and clinical systems Digitally enabled new care models Analytics and digital tools to drive decision making Opportunity for translational, forward looking/ progressive research Structures and processes to continuously improve and innovate

2.2   PURPOSE OF OUR DIGITAL STRATEGY

The Digital Strategy sets out the path for taking WH into its digital future, by embedding digital and data across the whole organisation. Its focus is therefore not purely on technology and digital health, but also includes areas such as corporate support functions, education and other non-clinical support structures and enablers. Furthermore, data and information have become core components and key outputs of the technology to support the delivery of Best care.

This document aims to set out the pathway for WH to capture and generate meaningful data, formulate innovative insights, and use digital technology to engage patients, families, staff and system partners, in our overall vision to deliver the healthcare of the future, together.

More specifically, the purpose of this document is to:

* Clearly define priorities for the coming years to support the achievement the vision and strategic directions in line with the WH Strategic Direction 2021-2023[1];

* Guide decision making, and steer new initiatives and opportunities that might emerge over the coming years;

* Set out the order and timeframes to improve how we work and deliver services, in the most reliable, efficient and safe way with a better experience for all 'customers' (patients and families, staff, system partners and government).

The priorities in this strategy are driven by the needs of our users, as well as global, national and local trends and developments. While a number have commenced or are in active planning, other of the longer term priorities outlined will be subject to future business case process and approval. This recognises the dynamic nature of the digital and health landscape and the time and resources required for investment in technology. Therefore, as the vision and priorities in this document might remain relevant beyond this plan's life span of 3+ years, it intends to move quickly on its implementation.

2.3   KEY DEVELOPMENTS

The Digital Strategy builds on the substantive work already underway, whilst maintaining an open mind to parallel opportunities which can enhance or streamline our day to day clinical and non-clinical work.

The Electronical Medical Record (EMR) is the cornerstone of any digital journey in health, and a key enabler for delivering care virtually. After implementing its four core modules late 2018, WH is currently in phase 2, expanding the EMR across a broader range of clinical areas[2], and incorporating clinical decision support, device integration, patient portal, patient flow management, research and population health management. The first part of EMR Phase 2 is expected to go live in 2023.

As in many health services, COVID-19 accelerated the need for, and the implementation of, digitally enabled services. Within a matter of days, WH staff switched to working from home, over 13,000 contacts with patients were delivered virtually, tailored COVID reporting was in place as well as surge planning. As the pandemic continued and WH extended its pivotal role in supporting public health, testing and vaccination, so did continued efforts to support these developments from a digital perspective.

Meanwhile, WH will be expanding its services, locations and facilities to continue to meet the increasing healthcare needs of the population. Digitally enabled care and data-driven decision making are key to delivering care in people's homes and paramount in designing new hospitals in Footscray, Melton and Point Cook. The amalgamation with Djerriwarrh Health Services also requires alignment, for instance around digital assets, access, reporting, coding and technology platforms.

As WH grows, so does the need to self-manage key corporate functions, some of which are currently dependent on the Department of Health and other health services. Furthermore, the planned expansions and amalgamations underline the need to standardise, simplify and mature our clinical processes, technology and data practices. Data governance and cybersecurity are critical elements of this. Whilst this Digital Strategy builds on the major projects underway, it also provides a clear direction to align smaller initiatives and optimise our capability to support delivery of Best Care, anywhere.

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1 It is noted that both the Strategic Plan and the Digital Strategy are evolving documents in the sense that the timelines overlap, however the overall direction and key objectives may go beyond their respective timelines.
2 such as Specialist Clinics, Emergency Services, Perioperative, Anaesthesia and Critical Care Services, Women and Children Services, and Cancer Services

3.0 Digital priorities

Strategic Direction alignment

3.1	Health information is available where, when and for those who need it	
3.2	Data can be exchanged securely and used with confidence	
3.3	Technology infrastructure is contemporary, connected and aligned across sites	
3.4	Digital technology is enhancing Best Care and optimising patient experience	
3.5	Staff are supported, connected and empowered by data and digital technology	
3.6	Planning and decisions are informed by real-time business intelligence and analytics	
3.7	Western Health is well-positioned to continue driving innovation	

KEY
Each of the seven goals, and their supporting objectives and actions, are in line with Strategic Direction 2021-2023. The icons represent each of the Strategic Directions:

We partner with patients and families

We care for our people

We deliver services for the future

We are better together

We discover and learn

3.1   HEALTH INFORMATION IS AVAILABLE WHERE, WHEN AND FOR THOSE WHO NEED IT

Of note, a number of the priorities identified are subject to business case approval.

Objectives	Actions
3.1.1 Provide easy access to (health) information	**1-3 YEARS** • Implement EMR Phase 2 functionality to provide easy access to clinical information for staff and patients across WH, simplify clinical workflows, and optimise user experience • Enable integration between the EMR and its associated systems, including mobile and biomedical devices • Co-design and gradual build of user-friendly portals for end users *See 3.4.3. Patient Portal* *See 3.5.1. Employee Portal* **3+ YEARS** • Extend the capability of the EMR to the broader community to include Mental Health and Population Health Management • Fully replace the current patient administration system to eliminate manual workarounds and improve efficiency • Operate interactive functionalities within the portals, enabling digital two-way communication, information exchange and planning
3.1.2 Optimise the information and referrals provided to and from WH	**1-3 YEARS** • Replace the secure messaging system, to align with best practice, enhance the user experience and streamline transitions of care to GPs and other out of hospital care providers • Implement electronic referrals from external providers and optimising efficiency and adaptability to comply with guidelines and standard practice **3+ YEARS** • Support seamless transitions and continuity of care, by optimising the use of information available to WH, e.g. capture healthcare data from relevant external sources, like primary healthcare • Systematically capture, analyse and utilise data from relevant non-healthcare agencies and non-traditional sources
3.1.3 Provide secure access from devices on a needs-basis	**1-3 YEARS** • Continue to refine the levels of access for end users, based on a 'zero trust' principle and allowing the right access for those who need it, in a user-friendly way • Use machine learning inform and verify user identification

3.2   **DATA CAN BE EXCHANGED SECURELY AND USED WITH CONFIDENCE**

Objectives	Actions
3.2.1 Establish robust data governance practice across WH	**1-3 YEARS** • Establish a pragmatic data governance framework for both clinical and corporate data at WH, acknowledging the rapidly changing environment, and reflecting best practice and Victorian Government guidelines and strategies • Establish a data governance roadmap and commence the data governance action plan, leveraging the processes and structures of EMR Phase 2 • Conduct assessment of data governance maturity at WH **3+ YEARS** • Complete the data governance action plan across the whole organisation
3.2.2 Pro-actively manage cybersecurity risks	**1-3 YEARS** • Refresh the Cybersecurity action plan completed end of 2021, guided by updated Government guidelines and directions as these will be released • Complete the identity management system to lay the foundations for further cybersecurity safeguards • Establish a process to plan for new and expected legislative and regulatory requirements, especially around data handling and privacy **3+ YEARS** • Execution of the updated cybersecurity plan • Embed cybersecurity as a primary element in new projects ('Privacy by design') incorporating internal and external requirements and recommendations to mitigate cybersecurity threats • Foster collaboration and partnerships with universities and industry bodies to elevate WH as a health sector leader for access and security
3.2.3 Ensure safe sharing of health information	**1-3 YEARS** • Further support State and National initiatives by securely sharing patient data from WH clinical systems with My Health Record and other initiatives to enable healthcare providers and patients access relevant clinical information • Complete the rollout of seamless device access, with the same level of security controls when providing care within current and future WH sites or within the community **3+ YEARS** • Establish or partake in a Health Information Exchange (HIE) to enable the safe sharing of clinical data with other health care providers
3.2.4 Implement effective information management across WH	**1-3 YEARS:** • Establish a data/information management function and capability in line with best practice and suitable for WH's growing size and complexity. • Determine priorities to assess and address data and information management in the organisation • Develop a data management framework and action plan **3+ YEARS** • Conduct assessment of data management maturity at WH • Increase the maturity of data management by delivering on the data management framework

3.3 TECHNOLOGY INFRASTRUCTURE IS CONTEMPORARY, CONNECTED AND ALIGNED ACROSS SITES

Of note, a number of the priorities identified are subject to business case approval.

Objectives	Actions
3.3.1 Establish contemporary corporate systems and replace legacy systems to user-friendly alternatives	**1-3 YEARS** • Automate and streamline workflows especially in procurement, finance, asset management and HR (currently manual and/or fragmented) • Enhance employee experience and efficiency through an end to end Human Resource Information System (HRIS), linking all employee life cycle processes such as recruitment, payroll and rostering[3] • Modernise and integrate finance and procurement systems to offer a consolidated platform to improve operational efficiency • Complete the migration from MaP to Power BI to allow for consolidation of analytics and reporting platforms • Establish an enterprise asset management information system to manage accurate, real time asset information and is integrated with other WH systems to provide transactional data on all services, including inventory, stores, fleet and space management. **3+ YEARS** • Optimise non-clinical workforce capability and productivity, enabled by digital technology and replacement of manual processes
3.3.2 Align technology, systems, data and reporting requirements across new sites	**1-3 YEARS** • Support the transition of staff and services in Bacchus Marsh, Melton and Caroline Springs, to integrate with the WH network from a digital, data, reporting, access and EMR perspective. • Align EMR processes, device management, technology and data flows for New Footscray Hospital, New Melton Hospital[4] and Point Cook Community Hospital • Enable effective partnership working through establishing the digital requirements for Community Hospitals and other partnership projects • Facilitate a similar integration process when WH will provide Mental Health services from 2023, i.e. determine the scope, approach and requirements to integrate Mental Health services into WH from a digital, data, reporting and EMR perspective **3+ YEARS** • Continue to support all major development and amalgamation projects towards completion
3.3.3 Optimise the use of applications across the organisation	**1-3 YEARS** • Produce guidelines and principles for consolidation of existing applications and technology and procurement of new applications and technology in support of the single vendor strategy as determined by WH leadership • Prepare for the capability uplift and communication across the organisation to streamline the integration and development of mobile applications **3+ YEARS** • Build strategic relationships with major clinical and corporate vendors to continue to create best value, efficiency and alignment for the organisation

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[3] Initiative may be subject to developments and decisions within Health Share Victoria
[4] Subject to formal decision making and funding

3.4   **DIGITAL TECHNOLOGY IS ENHANCING BEST CARE AND OPTIMISING PATIENT EXPERIENCE**

Objectives	Actions
3.4.1 Enable and expand virtual care options to empower patients and their families	**1-3 YEARS** • Partner with patients, carers and staff to inform a virtual care model and strategy, which will mature the current delivery model, align clinical and technical requirements, and enable expansion at scale • Increase the use of existing technologies to provide care in people's own homes, as alternatives for coming in for ambulatory or low complex emergency care, and enable recovery or rehabilitation at home. • Optimise our telehealth capability to allow for better access to health care, and choice where clinically appropriate • Expand from telehealth to more virtual care options, e.g. through conducting virtual ward rounds, remote consultations across campuses or pre-appointment questionnaires **3+ YEARS** • Expand, accelerate and scale virtual care alternatives to provide Best Care in the right setting. This means capturing data from technologies like wearables into the EMR, so that the tools that patients use, are connected with their health record and they are effectively empowered in their care and care experience
3.4.2 Complement Western @ Home model with care delivered from a Virtual Care Hub	**1-3 YEARS** • Develop a Virtual Care Hub* at WH, which brings together monitoring tools to care for patients in their own homes, providing them with 24/7 support and pro-active intervention when needed • Incorporate virtual triaging to enable patients receiving the right care, at the right place, at the right time *A Virtual Care Hub is a centralised area where patients' health and/or recovery are assessed or monitored whilst patients are in their own homes (digitally supported Western @ Home). Many will also receive care in the home and will have access to 24/7 clinical advice* **3+ YEARS** • Gradually expand the cohorts and patient groups to benefit from care at home at scale, as alternative to ED presentation or enabling early discharge • Review Virtual Care Hub data and operating model to maximise the opportunities for clinicians to monitor and actively manage patients in the community.
3.4.3 Develop and operationalise a Patient Portal, informed by user needs and priorities	**1-3 YEARS** • Engage with diverse groups of patients and families to design and implement a Patient Portal to provide patients with real-time access to their diagnostic results, educational information about their condition and upcoming appointments. • Fast-track interactive functionality that is being prioritised by patient and family representatives, e.g. enabling appointment scheduling. **3+ YEARS** • Further expand the interactive functionality, e.g. to include uploading of data from personal medical devices and tailored communication and support.

Objectives	Actions
3.4.4 Digitally enable measurement and effective use of patient outcomes and experience measures to optimise care	**1-3 YEARS:** • Work with medical, nursing and operational divisions to develop the approach to measure and analyse Patient Reported Outcomes and Experience Measures (PROMs and PREMs) integrated within the EMR **3+ YEARS** • Gradually develop a digitally enabled, comprehensive, integrated PROMs and PREMs program • In collaboration with Research and Quality, Safety and Patient Experience teams, explore opportunities to securely use this (meta) data to drive improvement and research projects
3.4.5 Digitally mature the uptake of consultative advice across WH specialities and beyond	**1-3 YEARS:** • Optimise secure and user-friendly technologies to enable quick specialist consultation (peer-to-peer), whilst practicing across different sites of the expanding WH network • Align communication channels and incorporate digital communication channels as key aspects of capital projects, especially for outpatient and ambulatory services • Review and refine the telehealth model to identify opportunities for operational efficiencies, improvement and align across WH's (new) locations and staff **3+ YEARS** • Explore opportunities to evolve this to an e-consult model by gradually opening up specialist advice to GPs and other system partners
3.4.6 Explore the use of technology to remotely monitor vital signs and predict clinical deterioration	**1-3 YEARS:** • Explore opportunities to use technology to monitor vital signs to enhance safe and efficient scope of practice across all WH sites. • Collaborate with clinicians to determine requirements and assess its connection with/within the EMR **3+ YEARS** • As appropriate, develop and implement the model of care to remotely manage ICU/HDU/critical care patients (e.g. at Melton from Footscray) or monitor lower acuity patients overnight (e.g. at Williamstown from Sunshine)

3.5

STAFF ARE SUPPORTED, CONNECTED AND EMPOWERED BY DATA AND DIGITAL TECHNOLOGY

Objectives	Actions
3.5.1 Establish an Employee Experience Portal enabling one access point for all HR and roster related needs	**1-3 YEARS** • Engage with a wide representation of staff and volunteers to determine preferences, priorities and requirements • As part of HRIS, employees and volunteers get easy and secure access (one click) to a range of services and insights, including rostering, performance management, education, leave balances and payment information • Work with operations, so that line managers can use the portal to get all insights needed to effectively manage and support individuals, teams and performance **3+ YEARS** • Further mature the portal based on feedback, and optimise the employee experience by more effective use of data and staff information • Enable more interactive functionality such as swapping shifts or requesting and approving annual leave.
3.5.2 Digital maturity in talent management	**1-3 YEARS** • Expand the use of the Talent Hub, from assessment and recruitment tool to support the identification of high potentials in specific cohorts **3+ YEARS** • Link the talent management information to the HRIS and learning management system, to understand interests and capabilities of our staff, and match this with career opportunities and wider development of people's expertise
3.5.3 Strengthen WH's capability to provide accessible, digitally enabled learning	**1-3 YEARS** • Collaborate with University partners to grow video recording, editing and online delivery capability to create digitally enabled learning • Integrate the existing Learning Management solution with operational reporting **3+ YEARS** • Explore how Augmented Reality can facilitate practical training opportunities for simple and complex clinical procedures, through virtual reality rooms in New Footscray Hospital

3.6 **PLANNING AND DECISIONS ARE INFORMED BY REAL-TIME BUSINESS INTELLIGENCE AND ANALYTICS**

Objectives	Actions
3.6.1 Improve the use of data and analytics to drive operational improvement and innovation	**1-3 YEARS** • Optimise the use of existing data sources to drive quality improvement and research, by linking data sources and embed data in a WH wide quality improvement framework • Extend real time information delivery to support decision support and safer care • Expand predictive analytics capability to identify patients early who are at risk of deterioration and/or hospital attendance • Rationalise and automate operational and clinical reporting aligned with organisational objectives and new EMR functionality • Establish a feedback mechanism to determine user satisfaction with WH's digital health technologies, to enable continuous innovation and improvement **3+ YEARS** • Embed predictive and prescriptive analytics in clinical and non-clinical functions to identify patients at risk and to improve decision making • Explore opportunities for broader Artificial Intelligence (AI) applications across research, prevention, diagnostics, treatment, care management and operations
3.6.2 Establish a Command centre to support patient flow and care at the right place	**1-3 YEARS** • Consolidate the key information regarding Access, Finance, Resources, People, Quality and Safety into one accessible, real-time dashboard (Performance Dashboard) • Explore a Clinical Command Centre concept to create insights to effectively manage flow and performance across all WH sites **3+ YEARS** • Establish the Clinical Command Centre in New Footscray Hospital • Expand the visibility of patients and flow beyond WH boundaries, with insights from system partners and care delivered in people's homes • Connect the insights from the Clinical Command Centre with the Virtual Care Hub (see 3.4.) to effectively manage patients throughout their whole journey
3.6.3 Digitally support evidence-based practice	**1-3 YEARS** • Develop unobtrusive and intelligent clinical decision support tools that promote best practice care • Analyse, synthesise and interpret clinical data and operational data to provide live insights and move from a retrospective method of quality and safety auditing, to a proactive real-time early intervention model **3+ YEARS** • Work with clinicians to further strengthen digitally enabled clinical decision making and evidence-based practice. • Explore modern machine learning to improve efficiency and support clinical decision making

Objectives	Actions
3.7.1 Establish a robust process and aligned structure for WH wide technology governance and decision making	**1-3 YEARS** • Establish criteria and a process to evaluate and prioritise new technology-based ideas • Set up a pragmatic governance structure and process around digital and data projects and technology decision making – acknowledging existing Steering Committees and operational reporting • Assess the organisational capability and organisational structure to align with the aspirations on digital technology, cybersecurity and data governance, as set out in Strategic Direction 2021-2023 and this plan **3+ YEARS** • Adopt a contemporary approach to mature, progress, learn and innovate effectively as a health service in the digital space
3.7.2 Optimise access to data and analytical capability to drive research, quality improvement and innovation	**1-3 YEARS** • Strengthen research data collection and management capacity (including establishment of clinical registries) through a suite of technologies to improve integration with external data sources • Enhance data linkage capability to enable researchers to access data from a variety of internal and external sources • Support the development of digital health capacity for registries, embedded clinical trials, real-time quality auditing and other health services research **3+ YEARS** • Embed data analytical capabilities, drive innovation and enhance synergies in predictive and prescriptive analytic capability in Research
3.7.3 Establish Innovation Hub	**1-3 YEARS** • Determine the approach, resourcing and governance to establish the Innovation Hub. This can include the creation of an Innovation team charged with identifying innovative practice that WH can adopt, supporting clinicians and facilitating the processes and business cases for adoption *At a high level, this will be an (virtual) space to trial and effectively pilot new contemporary technology and technology driven initiatives, such as AI, Robotic Process Automation, 3D printing, spatial technology and Natural Language Processing for application in clinical practice and supporting operations* **3+ YEARS** • Broaden the reach of the Innovation Hub to drive new technological advancements

Objectives	Actions
3.7.4 Position Health informatics and technology as an exciting career pathway	**1-3 YEARS:** • Feed into the capability requirements of strategic workforce planning informing future recruitment • Build relationships with relevant peak bodies in health informatics and digital health credentialing and training • Collaborate with People, Culture and Communications to promote data and informatics as a career pathway in the organisation **3+ YEARS** • Establish PhD roles as part of development of significant technology initiatives and its impact on patient care • Create workforce exchange opportunities to enhance knowledge and skillsets on emerging technologies and analytics through fostering partnerships with tertiary institutions within Australia and internationally.

4.0 Driving factors that shape our future

4.1 THE VOICE OF THE CUSTOMER

At WH, we aim to place our patients and their carers at the heart of everything we do. Likewise, the digital technology we develop is first and foremost for the purpose and benefit of its end users. This strategy sets out a clear path to engage with various representative groups of end users to understand their preferences and needs, so that priorities and requirements can be developed accordingly.

Figure 1 shows a simplified example of what this could look like (actual statements to be defined as a result of the engagement process). Having these needs front of mind throughout the prioritising, development, building and testing stages, enables proposed solutions to be fit-for-purpose.

FIGURE 1 Examples of end user requirements

END USER	I WANT TO…
PATIENT OR CARER	• Have easy access to my appointments, health information and test results, at any time, from my mobile device • Know that my data is safe and secure • Make an appointment online • Video chat with my loved one if he/she is/I am in hospital • Attend my appointment via telehealth if that is appropriate and suits me, and fill in forms online, so I only come in when I have to • Share videos or pictures for my doctor, so he/she can assess these without me coming in • Get help and information on my symptoms or illness online • Someone to teach me how to use my hospital app or portal appropriately • 24/7 access to clinical advice, to give me reassurance when I am caring for my partner/parent/child/friend at home
STAFF MEMBER (clinician, manager, support service, volunteer, etc.)	• Work flexibly and remotely, access clinical and corporate systems from non-WH locations • Easily access information about my (my direct report's) leave, training needs, performance and rosters, in one place • Swap shifts, request leave and do other routine activities swiftly from my mobile device • Reduce manual handling and paper-based collection/analysis of any data • Know that my personal data is correct and safe • Use as limited number of different systems as possible, for my day to day work • Know what is happening throughout our hospitals, any time, real-time, so I can act on it • Trust the data is correct, and that systems 'talk to each other' so there is 'one version of the truth' • Use digital tools to enhance the experience and care for patients, in and out of hospital
SYSTEM PARTNER (GP, other health service, etc.)	• Easily and safely share data, information or referrals • Have insight in what happened to patients before/after their hospital stay or visit • Make better use of data to help keeping our patients healthy and at home

4.2   HORIZON SCAN

The priorities for this Digital Strategy are further influenced and challenged by a range of trends, requirements and factors influencing our digital and data environment. Figure 2 shows an overview of factors that impact how we work and can work differently in the future.

Global & national trends
- Increased spending and population need highlights the need to mature digital and data solutions
- Unlocking the potential of data and information, e.g. through big data and AI, and precision medicine
- Healthcare on-demand, accessible by phone
- Care delivered at other places
- Individualised care; pro-active, data-driven and technology enabled

System level
- Data governance policies & standards
- Australian and Victorian strategies
- More collaboration across care settings, and with system partners like GPs and cluster partners
- New parties and technology partners / market entrants
- Privacy as a key priority, embedded in legislation

Organisational level
- Digitalisation non-clinical areas to drive sustainability, efficiency and better experience
- EMR phase 2
- Amalgamations DjHS and (future) mental health
- Growing population, services and sites increasing the need for connection with each other

Clinical service level
- Enabling virtual care models, and support care in the home
- Technology driven clinical innovation
- Consolidation of my Health Record
- Opportunities to provide insights
- Connections within WH and beyond

Individual patient/ staff experience level
- Consumers want to be, and can, increasingly involved in managing their own care, supported by digital and data
- Safe access to own information
- Enabling a seamless journey within and beyond hospital walls
- Healthcare "on demand", and accessible via mobile phone or tablet
- Connection with loved ones whilst in hospital
- Increased role of carers and support people including language services

FIGURE 2 Overview of range of trends and factors influencing the requirements and aspirations for the future.

4.3   WESTERN HEALTH'S CURRENT STATE

Mid 2019, a Digital Health maturity assessment has been conducted. Noting that its scope focussed on Digital Health (instead of the wider digital, information and data enablers across WH), still the outcomes of this assessment provides an indication of WH's current state compared to Victorian stage average. (Figure 3)

This current state assessment was further complemented by a range of internal interviews with clinicians, corporate services, executives and senior leadership teams across WH. Stakeholder feedback highlighted specific technology challenges that WH faces and is keen to overcome, such as;

- Limited access to the right hardware, software and support for clinicians to deliver care and services in the home and community ("Mobility")

- The integration of systems and platforms ("Too Many Systems")

- A lack of digitisation of Human Resources and business processes and services that currently have a heavy focus on paper and operate across multiple systems resulting in complex workflows ("Paper forms", "Fragmented", "Inefficient")

- No comprehensive patient view, a digital front door, due to many clinical systems operating in silos. ("Hybrid Systems", "Lack of Transparency")

These challenges have informed the priorities described in chapter 3, and the phased implementation as specified in chapter 5.

FIGURE 3 Digital Health Maturity Assessment report, Western Health 2019. EY.

Legend
— Victorian Digital Health Maturity Objectives
— Victorian State Average
— Western Health
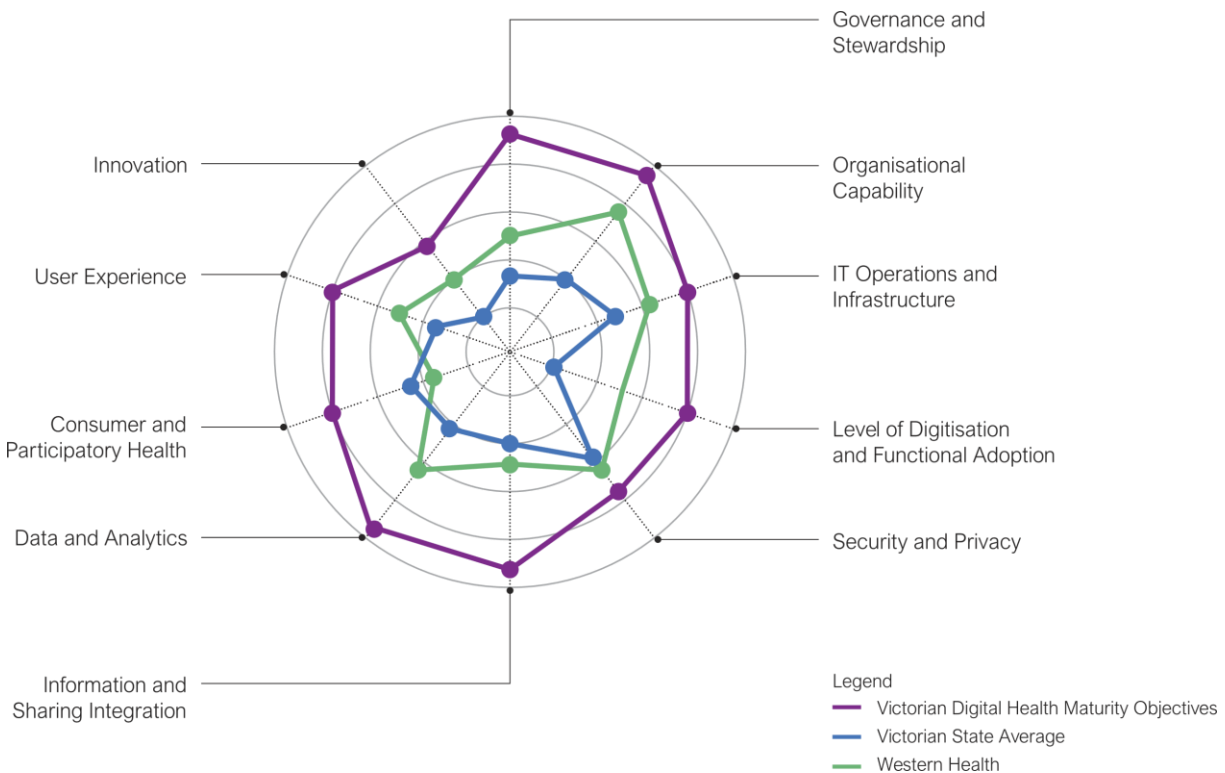
5.0 Implementation

5.1   BENEFITS

Delivering this Digital Strategy will drive a broad range of benefits to patients, staff, partner organisations and the wider community. As WH acts in an increasingly volatile and complex environment, the initiatives and their impact cannot be seen in isolation or as a singular causal relationship. Instead, the achievement of benefits will be driven by a range of factors and initiatives.

Collectively, the initiatives in this strategy aim to contribute to the following outcomes:

Patients, their families and carers

- Empowered patients with accessible tools and information to improve their own health

- Streamlined, connected and more consistent experience across different locations and health settings

- Enabling more care to be delivered from home

Staff

- Supported staff, enabling them spending most time on high value activities and reducing time on manual handling or collecting fragmented information

- Empowered staff, having insights and information at their fingertips to inform their day to day work in the most efficient way, both clinical and non-clinical

- Better informed clinicians and managers, with reports and data that can be trusted and are available in real-time

Partner organisations

- Connected and informed GPs, being able to access and share information in a timely manner

- Seamless connections with other care organisations, by safe sharing of (patient) information

Organisation as part of the wider community

- Optimised operational performance and financial viability, making best use of resources through improved productivity of clinical and corporate functions

- Uplift in research and quality improvement capability through better data collection and analytics, creating insights in the needs of (current and future) patients and staff

- Uplift in the sustainability, agility, responsiveness and resilience as an organisation. A contemporary digital, technology and data environment provides flexibility needed to adapt to changes, deliver value in the long run and stay relevant for the industry, which will be critical to attract and maintain staff and continue delivering Best Care as we grow.

Any specific and more detailed outcome measures will be incorporated through the business planning process by the directorates and units driving the relevant projects and initiatives.

5.2 ENABLERS AND RISKS

At a strategic level, this Digital Strategy is a critical enabler for WH to pursue its Strategic Direction 2021-2023. Furthermore, it directly addresses key strategic risks as identified by the Board around ICT systems, transfer of care information and cybersecurity.

At its core, the main risk associated with this strategy is not to implement it, whilst WH is growing at pace. Population need will double over the next 15 years, the number of sites, services and staff will grow accordingly, and clinical and non-clinical services will be more often delivered remotely and in homes. The digital, technology and data initiatives set out in this document are pivotal to grow in a sustainable way. Not keeping up with the advancements in technology, data and information is expected to expose risks compromising patient safety, patient and family experience, staff satisfaction, reputation, efficiency and overall performance.

At a more pragmatic level, the following enablers have been identified. Each include a risk if the enabler is not in place, a rating indicating its likelihood/impact, and what can be done to mitigate the risk and support the enabler.

ENABLER	RISK	RATING	MITIGATING ACTIONS
Collaboration and engagement with end users	End product or solution not delivering value/ fit for purpose	●● (Medium)	Embed as key priority for execution
Staff capacity, capability and readiness	Unmotivated, unequipped or overwhelmed staff, due to the number of major projects or change fatigue post COVID	●●● (High)	Clear communication and positioning of this document Alignment to existing projects and funding where possible Leverage change management expertise Flexibility in prioritisation of initiatives addressing the additional impact of major projects
Funding	Part of initiatives cannot be pursued	●●● (High)	Gradual and pragmatic approach to funding
Organisational commitment	Snowed under by other priorities around amalgamations and site and service expansions	●● (Medium)	Alignment to existing projects where possible. Alignment with Strategic Plan and accountability to the Board Incorporating scope of major project impacts on IT, EMR, data and reporting, in to the overall planning and commitment to resourcing and priorities.
Learning from others "The future is already here, just not evenly distributed"	Duplicating efforts/ reinventing the wheel	● (Low)	Cross pollination within WH Regular external inspiration and challenge on new ideas as part of implementation
Getting the basics right / ensuring robust foundations prior to implementing advanced solutions	Unsustainable solutions	●● (Medium)	Honest and critical assessment of current state Adhere to the order of implementation
Effective and robust governance and coordination to delivery	Stalled or fragmented implementation, leading to wasted resources or loss of momentum/ motivation	●● (Medium)	Clear accountability Embedding in governance structure with ownership

●●● **High**　　●● **Medium**　　● **Low**

5.3 TIMELINE

Like many health services, WH's operations and staff have been significantly impacted by COVID-19 in 2020 and 2021. Furthermore, WH is managing more major capital projects and integrations than any other health service in Victoria. These are key considerations in setting a realistic timeline for implementation. Whilst keeping up with technology is key to support WH's growth in a sustainable way, it is equally important to ensure the foundations are in place (e.g. EMR) as a key enabler to further progress in the journey of digitalisation and innovation. This is visualised in Figure 4 below.
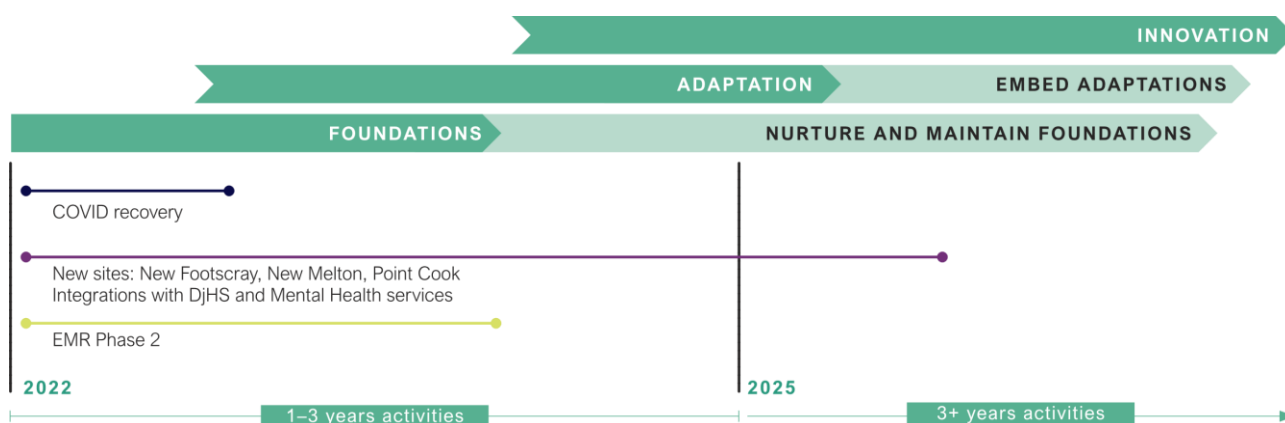
FIGURE 4 Indicative timeline and context for implementation

A substantial proportion of the objectives and initiatives set out in chapter 3 are part of existing projects, initiatives or next stages in day to day business. The progress and alignment with existing work means that many activities and aspirations within this plan already have a 'home'. The table below shows this alignment, as well as the high-level milestones over the coming years.

Note this is a high-level differentiation only, further stakeholder engagement will inform its implementation.

	Project, initiative or area	Obj.	Horizon 1 – 3 years	3+ years
Existing programs of work, (mostly) funded	Electronic Medical Record phase 2	3.1.1 3.4.3 3.6.1 3.6.3	Access to clinical information Integration with other systems Patient Portal Automate operational and clinical reporting Digitally support evidence-based practice	MH/ Population Health data/module Elimination of paper records Fully operationalise two-way information exchange and planning with patients and families
	Virtual care options for patients and clinicians	3.4.1 3.4.5	Digital tools integrated with EMR Optimise telehealth capability	Expand and accelerate virtual care at scale Explore opportunities for E-consult model with GPs
	Virtual Care Hub (partially funded, capital investment may be required)	3.4.2	Cohort based remote monitoring and pro-active intervention	Expand and accelerate remote care to become a full hospital with and without walls, for all patients.
	Major capital developments and amalgamations	3.3.2	New sites in Footscray, Melton, Point Cook and Mental Health beds Integrations: DjHS and Mental Health services.	Continue to support digital, technology and data aspects
Work that can be embedded as part of business as usual	Secure access & cybersecurity	3.1.3 3.2.2	Refine access for end users, including machine learning to verify ID Update the cybersecurity plan	Privacy by design Partnerships with universities or industry
	Talent Hub	3.5.2	Expand use of the Talent Hub	Link information to HRIS and LMS
	Reporting & Analytics	3.3.1 3.6.1 3.7.2	MaP to Power BI Automate operational and clinical reporting	Predictive and prescriptive analytics, embed this in research Explore opportunities for artificial intelligence

	Health informatics as a career pathway	3.7.4	Embedding in Strategic workforce planning and people support	Opportunity for PhD roles and workforce exchange opportunities
	Command centre	3.6.2	Performance Dashboard	Command Centre operational in NFH Data linked with Virtual Care Hub and insights beyond WH
	Data capturing and linkages	3.1.2 3.6.1 3.7.2	Optimise use existing data to drive improvement research data collection and management capacity Enhance data linkage capability	Systematically use and analyse data from external sources, such as primary care
	Data sharing	3.2.3	Support national initiatives Align security controls	Health Information Exchange
Work underway, not yet funded	GP referral system	3.1.2	Replace e-messaging system Transition to e-referrals	Becomes operational
	Human Resources Information System	3.3.1 3.5.1	HRIS establishment Employee portal	Optimise in non-clinical workforce capability Enhance interactive functionality of portal
	Asset management system	3.3.1	Establishment of asset management system with supporting processes, functions and structures	Becomes operatonal
	Finance and procurement systems	3.3.1	TBD	Becomes operational
	Digitally enabled learning	3.5.3	Collaborate with University partners Integrate LMS with PowerBI	Virtual reality rooms at NFH
To be established	Data governance & Information management	3.2.1 3.2.4	Resourcing and function establishment Maturity assessment and roadmap	Implementation of the roadmaps and increasing maturity of these functions
	Process and structure, simplification & robust governance	3.7.1 3.7.3	Governance organisational structure & decision-making process established Assess organisational capability and structure Innovation Hub and team	Contemporary approach to continue to mature in digital space, as this becomes operational
	PREMs & PROMs	3.4.4	Develop approach for measurement in EMR	Digitally support ongoing measurement and feedback, to improve individual care and wider quality improvement
	Vital signs monitoring	3.4.6	Exploration in collaboration with clinicians	Model of care implementation, may be linked to capital projects such as New Melton Hospital Daily operations dashboard

5.4 FUNDING CONSIDERATIONS

In a generally financially restrained environment, the approach around investment of initiatives that are not yet funded or resourced yet (as a project or as business as usual), has to be a pragmatic one. The following proposals could be considered:

- Increase opportunities to source other funding as part of service development and expansions. By embedding funding for its data and digital components, as an integral part of business cases, broader sources could be tapped into whilst it also prompts planning for digital, technology and data components from the outset.

- Where funding is already in place, align priorities to collectively deliver on the project outcomes as well as this strategy.

- Some initiatives are driven by regulatory or system requirements of WH as a health service, which may provide leverage for funding.

It is noted that the paradigm of digital technology has shifted in recent years with capital expenditure on hardware and software shifting to services provided by subscription. Over time, this shift might eventually flow through to the pricing mechanism of WIES/NWAU and other funding streams, however the delay of this transition will be significant, and it is not expected to cover the full costs. This emphasises the need to explore and prioritise alternative and flexible funding arrangements.

5.5 IMPLEMENTATION APPROACH

As this plan is organisation-wide, the responsibility for implementing the initiatives does not rest with one individual department but will be driven across all directorates, and in collaboration between directorates. It is anticipated that each relevant area will incorporate the overall direction and initiatives in its annual business plan and may refine existing projects in alignment with the objectives set out in this document.

Figure 5 below shows the strong linkage with Strategic Direction 2021-2023, existing major projects such as EMR, and embedding the actions in the business planning process.
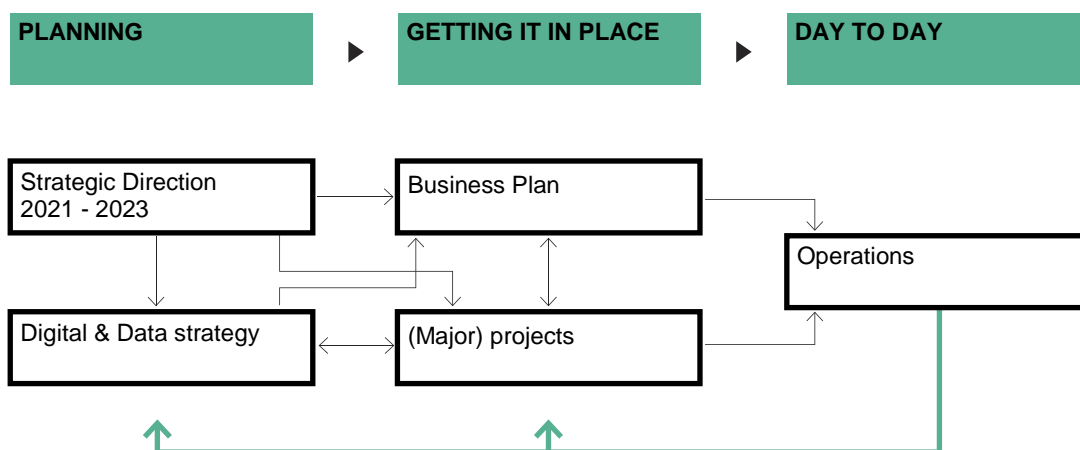
FIGURE 5 Schematic representation of implementation approach

The central coordination of the implementation will be facilitated by the CFO directorate, noting that it requires the expertise, commitment and priority across the organisation. Progress, risks and interdependencies can be escalated via the Executive Committee. This process may be further considered when the process and aligned structure for WH wide technology governance and decision making will be assessed (initiative 3.7.1).

5.6 IMMEDIATE NEXT STEPS

Notwithstanding the broader implementation approach, the following next steps are proposed to be completed over the coming months:

1. Discussion, feedback and approval at the Executive Committee, followed by the Risk & Audit Committee and the Board Committee for their feedback and endorsement;

2. Communication and Engagement with WH stakeholders, initially at senior leadership level;

3. In collaboration with stakeholders, alignment to existing projects and future business planning;

4. Further assessment of funding sources, timing and scope and scope of existing and planned projects and initiatives, with the view of refining the information set out in 5.3 to inform the implementation process.

Appendix

STRATEGIC DIRECTION 2021-2023,
DIGITAL RELATED STRATEGIC INITIATIVES

- The initiative is primarily driven/owned by digital/ data, i.e. it is a key focus (highlighted)
- Data/digital is a critical enabler to make the initiative happen
- Data/digital is an aspect of a wider initiative with also non-digital aspects

Strategic Direction	Strategic initiative	
1. **We partner with patients and families**	Boost virtual care options to empower patients and their families throughout their care journey, enabled by a patient portal where patients and families can access their health information, results and referrals and gather materials about their condition	**Key focus**
	Expand the current collection of outcomes and experience measures to build and embed a comprehensive Patient Reported Outcome and Experience Measures (PROMs and PREMs) program across WH	Critical enabler
	Create spaces for families and carers to meet, connect and support patients and each other, both physically in our new build hospitals and expansions as well as virtually	Digital aspects
	Review and tailor patient communication, face-to-face, paper based or digital, in a way that is easy to access and understand so people know where to go, what is happening and how to maintain or improve their own health.	Digital aspects
2. **We care for our people**	Further mature and extend our volunteer program through increasing the diversity and variety of roles, developing virtual programs and growing our volunteer base	Digital aspects
	Implement our new talent management system to understand interests and talents of our staff, and match this with career opportunities and wider development of people's expertise	Critical enabler
	Tailor our flexible work and work from home approaches and policies and open up opportunities to attract people from a wider geographical area in the future.	Critical enabler
3. **We deliver services for the future**	Pilot an integrated multidisciplinary pro-active approach for people with specific and high-risk needs who might not be able to readily access our care	Digital aspects
	Align support structures and clinical practices to ensure consistent care and patient experience, as we expand the places from where we provide care, both physically and virtually	Digital aspects
	Maximise opportunities through technologically advanced equipment and devices integrated seamlessly across the system	**Key focus**
	Expand virtual care options in ambulatory settings and community services	**Key focus**
	Enhance and expand our Care in the Home models, ensure its workforce sustainability and add virtual care options, to reduce Emergency Department presentations and enable early discharge	Digital aspects
	Enable reliable and secure use of accurate and timely data to drive innovation, and improve patient care and clinical decision-making	**Key focus**
	Deliver our Digital Health strategy, including completing the full roll-out of the Electronic Medical Record, data governance and cybersecurity.	**Key focus**
4. **We are better together**	Explore opportunities to expand our shared care models with GPs, streamline referral pathways to and from WH, and simplify referral processes	Critical enabler
	Progress integrated technology and connected systems to further enable interdisciplinary and efficient working in everything we do	**Key focus**
5. **We discover and learn**	Progress technology to enable connections between systems, ensuring reliable and centralised data sources, to boost data collection, analysis and reporting	**Key focus**
	Harness the opportunities of virtual, remote and interactive delivery of education and training in blended and tailored programs, offered at all times and using an interactive, learner centred approach	Critical enabler