MESSAGE FROM THE BOARD CHAIR AND CHIEF EXECUTIVE

Metro North Hospital and Health Service has an international reputation for delivering excellence in healthcare outcomes and efficiency. It is our ability to drive innovation and provide optimum patient outcomes with exceptional clinical expertise that has positioned Metro North at the forefront of care delivery.

Healthcare services across the world are facing the increasing challenges of complex care and finite resources, coupled with ageing and growing populations. As the provider of health services to almost one quarter of Queensland’s population, we must develop new models of care and transform our ways of working to meet growing demands. In the years ahead, it will be our ability to leverage digital technologies that will enable us to remain a world-leading health service.

Digital Metro North is the transformative strategy that maps out our digital journey until 2032. Importantly, our staff and consumers have helped shape the strategy which will allow us to access the opportunities offered by digital innovation from real-time data and analytics through to precision medicine.

Digital Metro North will empower us to deliver better outcomes for our patients and community and underpin our ambitious MN32 strategic outlook for the next 15 years.

Our digital transformation will begin with the implementation of an integrated electronic medical record throughout our hospitals and health services. This will establish solid digital foundations and aligns with the Queensland Government’s commitment in 2015 ensuring 80 per cent of all public hospital services in our state are delivered via a single digital medical record.

As we embark on this significant period of investment in technologies and initiatives, we are excited about the future for our staff and patients. Digital Metro North will ensure we deliver value through connection, innovation and compassion.

It is time to reimagine healthcare and continue to lead the way in delivering outstanding outcomes for our patients.

Dr Robert Stable AM  Shaun Drummond
Chair  Chief Executive
Metro North Hospital and Health Board  Metro North Hospital and Health Service
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The healthcare landscape is rapidly changing and it is vital that we embrace emerging technologies to ensure we continue providing the best possible care for our patients. Digital transformation is critical for Metro North’s future.

Digital Metro North will transform our health service through the integration of digital technology in our hospitals and services. This will enable our staff to deliver high-quality care using innovative care models, supported by cutting-edge technology and groundbreaking research.

The opportunities offered by digital technology should not be underestimated. International trends are showing increasing benefits for both patients and clinicians as technology becomes part of our daily life not just at home, but in our hospitals as well.

We have come a long way from paper-based charts and handwritten notes. The most recent iteration of electronic medical records, the digital hospital, allows data to be collected and integrated with devices such as vital signs and electrocardiograms to create a patient-centred integrated health record.

Our teams are already developing innovative care pathways in digital environments with better patient outcomes. Healthcare is being redefined as clinicians view complete digital patient records instantly, aggregate data to improve treatments and create new models of care.

As Metro North moves to a fully-digital environment, our healthcare teams will be supported with mobile decision-making technologies while our researchers access real-time data and our patients receive more integrated and personalised care. Possibilities such as predictive and preventative medicine will become our reality.

Digital Metro North will enable our staff and technology experts to reimagine healthcare and open pathways for an innovative and exciting digital future. A fully-digital environment will expand our vision of healthcare beyond our current horizons.
WHAT IS DIGITAL METRO NORTH?

Digital Metro North will deliver innovative digital transformation throughout Metro North. With a vision based on quality patient experiences and strong clinical outcomes, it will enable a more connected, compassionate and seamless healthcare service.

The strategy aligns with the ambitious MN32 vision to position Metro North as a leading health service provider on the global stage. Through state-of-the art delivery of speciality and integrated health services, our comprehensive digital transformation will ensure we continue to lead the way in world-class healthcare.

Global trends show our industry is increasingly reliant on data-driven technologies and digital innovation to support best practice research methodologies and patient care. Digital Metro North outlines the pathways that will enable our teams to deliver outstanding outcomes within a digital hospital environment that is responsive to increasing demands. This vision will be achieved through a strong focus on our people, processes, information and technology.

Digital Metro North is a clinically-driven strategy underpinned by technical excellence. Clinical insights and expertise will inform all initiatives to ensure we deliver improved care outcomes as defined by the Institute for Healthcare Improvement: better quality of care; better efficiency of care; better experience for our patients, carers and staff; and better population health.1

The strategy encompasses all aspects of the Metro North digital journey from creating strong technology foundations through to applying integrated patient care solutions and dynamic digital innovation. It also considers our potential to reach beyond our boundaries to partner with universities and other healthcare organisations to conduct groundbreaking research and enhance service delivery.

Digital Metro North will ultimately create an integrated digital hospital and healthcare environment across Metro North that is driven by digital transformation, clinical excellence and quality patient experiences.
Digital transformation will play a critical role in enabling our health service to keep pace with global change, pioneer new models of care and provide responsive patient care in the future.

Digital Metro North describes the integration of digital technologies across our health service to support the Metro North Strategic Plan 2016-2020 (revised 2018) and the achievement of its three objectives:

- To always put people first
- To improve health equity, access, quality, safety and health outcomes
- To deliver value-based health services through a culture of research, education, learning and innovation.

Our people will drive the transformation agenda within our health service. Clinicians will partner with technology experts to lead our digital innovation with patient needs at the centre of our care delivery. As real-time data analytics and research becomes part of our strategic imperative, our transition to a digitised healthcare environment will consider people at every step in the journey.

Digital Metro North will also support the four key focus areas of the Metro North Health Service Strategy 2015-2020 (2017 refresh):

- Living healthy and well in our local communities
- Delivering person-centred, connected and integrated care
- Effective delivery of healthcare to address growing population health needs
- Providing responsive, holistic healthcare that meets the specific needs of vulnerable groups.

Digital solutions such as the integrated electronic medical record (ieMR) will provide clinicians with comprehensive data gathered throughout a patient’s healthcare journey. This will make it possible to develop individualised, patient-centred care plans based on connected service delivery. Our approach will be informed by comprehensive data sets enabling our services to predict changing population needs and create targeted healthcare strategies.

The vision encapsulated in the MN32 roadmap includes the following centres of excellence:

- Herston Biofabrication Institute
- Genetic Health Institute
- Jamieson Trauma Institute
- Surgical, Treatment and Rehabilitation Service (STARS)
- Herston Biobank
- Queensland Proton Therapy and Research Centre
- Centre for Healthcare Excellence for Care of the Older Person
- Queensland Cancer Institute
- Heart and Lung Institute.

Digital Metro North will connect these centres by integrating research data across our services. The digital platform will allow the “virtual cycle” of clinical data collection, sophisticated analysis and using standardised care pathways and digital decision support to rapidly translate research into practice (bench-to-bedside).

The strategy will embed research, teaching and learning into clinical practice, supported by rich data, knowledge and evidence, as well as state-of-the-art robotics, artificial intelligence and machine-based learning.

Digital innovation provides limitless opportunities for Metro North to lead the way in delivering optimal patient outcomes throughout our facilities and services.
OUR FUTURE OUTLOOK

Metro North faces the challenges common to all healthcare services including increasing demands for care, static resources, and clinician and operational requirements for comprehensive patient data and analytics.

As the largest hospital and health service in Australia, Metro North provides care for almost 25 per cent of the Queensland population each year. Our rapidly evolving healthcare landscape includes an expected population growth of 25 per cent over the next 15 years with an associated increase in the demand for patient services.

These demands, coupled with the complex care needs of our ageing population, will continue to create pressure on our health service with annual increases expected across all facilities and services.

The Metro North Annual Report 2017-2018 showed:
- 1.5 per cent increase in surgical activity
- 14,515 more hospital admissions
- 4,535 more ambulance arrivals
- 5.6 per cent increase in hospital activity
- 29 per cent increase in emergency department presentations
- 8,243 babies born at Metro North hospitals.

These statistics illustrate the need to transform our service delivery to ensure our patients continue to receive high standards of care in the future.
Digital Metro North is a comprehensive strategy equipped to support the scale and complexity of Metro North and will enable MN32 to deliver better outcomes for our patients, staff and community.

<table>
<thead>
<tr>
<th>Category</th>
<th>2017/18 statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff</td>
<td>15,781 (MOHRI FTE)</td>
</tr>
<tr>
<td>Investment in care</td>
<td>$2.758 billion</td>
</tr>
<tr>
<td>Sites</td>
<td>5 hospitals with 2,286 available beds, 15 community, Indigenous and subacute service locations, 27 oral health facilities and 15 mental health facilities</td>
</tr>
<tr>
<td>Hospital admissions</td>
<td>283,368 people admitted</td>
</tr>
<tr>
<td>Ambulance arrivals</td>
<td>103,018 ambulance arrivals handled by our emergency departments</td>
</tr>
<tr>
<td>Emergency</td>
<td>291,846 attendances</td>
</tr>
<tr>
<td>Outpatient services</td>
<td>1,367,662 outpatient occasions of service</td>
</tr>
<tr>
<td>Surgical operations</td>
<td>50,032 elective and emergency operations performed</td>
</tr>
<tr>
<td>Children</td>
<td>23,324 children under age 18 were admitted to Metro North wards and units</td>
</tr>
<tr>
<td>Births</td>
<td>8,243 babies born at our facilities</td>
</tr>
<tr>
<td>Mental health</td>
<td>406,150 contacts</td>
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<tr>
<td>Community health</td>
<td>147,163 hours of direct primary care</td>
</tr>
<tr>
<td>X-ray and ultrasound</td>
<td>300,333 x-ray and ultrasound attendances</td>
</tr>
<tr>
<td>Dental</td>
<td>770,332 weighted occasions of service</td>
</tr>
<tr>
<td>Breastscreens</td>
<td>43,031 breastscreens performed</td>
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Table 1: Scale and complexity of Metro North reported in the 2017-2018 Annual Report
DRIVING THE CASE FOR CHANGE

Healthcare systems across the world are increasingly using technology and digital innovation to meet growing patient care needs. Our ability to reimagine healthcare will rely on our capacity to keep pace with technological advances and continuously improve quality, safety and efficiency across the health service.

An integrated digital platform delivers a range of benefits for patients, clinicians and the community. A recent literature review concluded short-term benefits were found in fewer medication errors, increased efficiency, better presentation of patient information and better development and accountability for staff.²

There are six key drivers for digital change within hospitals and health services.

SUSTAINABILITY OF CURRENT MODELS OF CARE

Our current models of care are facing increasing pressures as our hospitals and services are challenged with increasing healthcare demands, and demographic and workforce pressures.

The Australian population is ageing and the number of people over 85 years old will increase from 0.4 million in 2018 to 1.8 million in 2050. The burden of chronic illness is also growing as this group lives longer and develops conditions such as diabetes.

Treasury’s Intergenerational Report 2010 (IGR)¹ estimated that government spending on healthcare as a percentage of gross domestic product (GDP) will nearly double by 2050. The Grattan Institute⁴ has also called for a radical rethink of care models in response to these challenges.

Our new models of care are likely to be based on new technology and methods such as digital devices, the Internet of Things (connection of everyday objects to the internet), robotics and virtual care rather than new scientific or molecular discoveries. This will enable Metro North to meet growing healthcare demands through digital innovation and continue to provide high-quality patient care.

PATIENT-CENTRED CARE

Patient care has traditionally been delivered via an illness or specialist-based model where individual medical specialties have their own unique systems, care and records. This is changing as patients increasingly seek ways to become more informed about their care.

Metro North is implementing patient-centred care models to ensure consumers are placed at the centre of their healthcare experience.

A digital platform will enable further patient involvement in care decisions with technologies such as the ieMR facilitating more effective information sharing in our hospitals, and in home and community settings.

VALUE-BASED HEALTHCARE

Value-based healthcare involves measuring the impacts of our health services and ensuring they align with patient expectations, experiences and outcomes.

Measuring these patient outcomes can be difficult as our existing paper-based and standalone digital systems frequently rely on disconnected and time-consuming processes. However, digital transformation will make it possible to effectively measure value-based outcomes including patient-reported outcomes and experience measures, and real-time, clinically-recorded data.

This information can be analysed and rapidly delivered to decision makers.

QUALITY AND SAFETY

Research has found that digital hospitals (particularly integrated ePrescribing systems) are safer than paper-based healthcare systems². This is due to greater transparency and availability of integrated information.

Digitised systems enable quality and safety frameworks to transition from retrospective data to live-streaming analytics which inform clinicians about adverse events such as physiologic deterioration, falls and pressure injuries. The real-time transparency and rich clinical data delivered through integrated digital solutions will inform machine learning and artificial intelligence, and facilitate our move from the current “break-fix” model to a more cost-effective and safer “predict-prevent” model of patient care.
INNOVATION

Rapid innovation through emerging technologies will be crucial in enabling our health service to respond to the increasing complexity and rising costs of healthcare. Our ability to apply new technologies such as the Internet of Things and precision medicine (customised healthcare solutions for patients) will also help us accelerate innovation and translate this work into improved outcomes.

Digital technologies will allow constant, data-driven improvement of our processes and outcomes across clinical, operational, administrative, financial and research streams.

SOCIETY AND PUBLIC EXPECTATIONS

Consumers and their families have increasing expectations that they will be able to interact and connect with their health providers in the same way they do with their banks or other service providers. Staff also expect digital capabilities to be the same whether they are at home or at work.

Digital solutions will deliver more seamless and integrated healthcare experiences for our consumers and enable our clinicians to access innovative digital solutions throughout all facilities.

Digital Metro North has been driven by the perspectives and aspirations of our staff and consumers.

“Switching to digital would be easier for me as I could receive notifications, text messages or emails about my upcoming appointments.”

RACHEL, PATIENT
CHALLENGES

Adopting digital technologies in healthcare is often challenging due to the significant and complex human and technology factors involved.

Digital transformation at Metro North will be a large-scale change impacting all work areas and staff. The organisation will need to prepare for the significant cultural change needed to bring all staff on the transformation journey. A number of risks will also need to be managed throughout the strategy timeframe.

Our staff

Our staff will experience significant digital disruption throughout the change process as their workflows, equipment and systems are transformed to accommodate new digital solutions. The success of these changes will rely heavily on our ability to transition our workforce from paper-based processes to a digital hospital environment. The philosophy that no one is left behind will underpin all transformation activities.

Some staff members will be understandably resistant to altering existing workflows and these staff will be supported throughout the change. Temporary efficiency reductions as staff navigate digital learning curves, also known as digital deceleration, are also expected and will be strategically managed.

Our governance

Clinical leadership in partnership with technical and health informatics expertise will play an important role in driving the changes. This must be supported with strategic governance structures and strong change leadership with an understanding that long-term benefits will outweigh short-term disincentives. This approach will help ensure risk is managed effectively throughout the digital change.

Strong clinical governance will be established to ensure an effective transition to digital business as usual is achieved as individual digital projects are completed.

Our infrastructure and systems

New and upgraded infrastructure and systems will be required to ensure Digital Metro North is successfully implemented. These will include digital basics such as WiFi in some facilities through to new patient information systems such as the ieMR, and robotics and precision medicine solutions by the end of 2032. Significant organisational investment will be needed to ensure we have the technical foundations to support our future digital growth.

Digital Metro North will enable Metro North to take its place at the forefront of digital healthcare innovation through technical solutions that deliver improvements in patient outcomes and healthcare services.

“I would like something that brings all of the information I need to one place, that’s easy and quick so that I can make the best decisions for my patients.”

KRISPIN, INFECTIOUS DISEASES DOCTOR
“Digital transformation means enhancing our ability to capture data, and conduct better quality audits and research that will translate into better care for patients.”

ALAN, CONSULTANT, EMERGENCY MEDICINE

“Having Aboriginal and Torres Strait Islander languages and dialects translated on digital interfaces that can be accessed by staff and consumers.”

NATASHA, MANAGER, INDIGENOUS HOSPITAL LIAISON SERVICES

“Going digital means that our patients could order their meals from TV screens at the patient bedside and they could use food pictures to better assist in the meal ordering process.”

BIANCA, DIETITIAN
APPRAOCH TO CREATING DIGITAL METRO NORTH

The strategy has been informed through engagement with Metro North clinicians, staff and consumers.

Engagement was tailored to meet stakeholder interests and involved multiple channels including:

1. targeted group discussions including 13 meetings with Clinical Councils and Executive Leadership Teams at all Metro North facilities where proposed strategy elements, themes and deliverables were presented for feedback
2. six staff forums involving more than 200 attendees at five sites to allow free-flowing discussion and exchange of ideas in addition to feedback on the proposed strategy themes
3. a broad online campaign including social media to allow all staff, patients and stakeholders to contribute their innovative ideas and perspectives
4. an online survey accessible through Metro North’s Consultation Hub which drew more than 500 responses
5. an open consumer engagement forum to enable our healthcare consumers to participate in the development of the strategy.

An environmental scan of the global digital health landscape and academic research was conducted.

Observation and experience of more mature digital healthcare systems in Australia and overseas has informed Digital Metro North (including Cambridge NHS Trust UK, Imperial NHS Trust UK, Cook County Hospital USA, Intermountain Healthcare USA).

A review of recent health informatics literature and a market scan of existing digital strategies and white papers was also conducted.5,6,7.
DIGITAL METRO NORTH STRATEGY
FEEDBACK AND CONSULTATION

12,720 VIEWS OF THE DIGITAL METRO NORTH VIDEO

540 ATTENDEES
13 Executive strategy sessions
5 Staff forums
1 Consumer session

522 SURVEYS COMPLETED

477 DIGITAL CHAMPIONS NOMINATED
DIGITAL METRO NORTH STRATEGY

The Digital Metro North Strategy includes:

- enablers of digital transformation which emphasise our focus on our people, processes, information and technology
- core principles to create the conditions needed for our successful digital transformation
- three strategic horizons to provide a clear, detailed timeline for our health service.

ENABLERS

There are key enablers that support and guide our transformation journey.

PEOPLE

The consumers, clinicians, administration, management, executive, support staff and partners engaged or connected to Metro North and the culture of Metro North.

PROCESS

The workflows, tasks and procedures used daily by the people at Metro North.

INFORMATION

The information and insights from the data created by the interactions between people, process and technology at Metro North.

TECHNOLOGY

The underlying capability to interact with the systems supporting, analysing and transacting the information, processes and people at Metro North.

PRINCIPLES

Core principles will underpin all Digital Metro North initiatives to ensure a consistent and integrated approach is applied throughout the digital transformation process.

These principles are critical for success and will create the conditions for a responsive strategy while also assisting our health service to manage the risks associated with this significant change.

CULTURAL READINESS

Metro North has a united culture where staff are motivated and willing to put in a high level of effort to adopt change and achieve improvement. We will engage widely on digital transformation to ensure no one is left behind during the transformation journey.

TECHNICAL EXCELLENCE

Metro North provides superior technical solutions and our teams can access immediate technical assistance.

DIGITAL CLINICAL GOVERNANCE

Metro North understands the digital healthcare environment and is equipped to govern digital implementation, content, data, analytics and innovation.

SINGLE SOURCE OF TRUTH FOR DATA

Metro North has a single data repository, governed data definitions and uses a single identifier to link a patient’s data.

INFORMATION GOVERNANCE AND TRANSPARENCY

Metro North governs digital information and promotes digital transparency.

INTEGRATION

Metro North promotes integration of people, processes, information and technology throughout the healthcare continuum, and has future-proof health service-wide systems.

DISASTER RECOVERY AND CYBERSECURITY

Metro North is prepared for digital disasters and has robust business continuity plans and strong defences against cybersecurity threats.

DIGITAL PARTNERSHIPS WITH RESEARCH TEAMS AND UNIVERSITIES

Metro North will partner with research teams and universities to access the skill sets needed to realise the benefits of digital transformation.
Building strong digital foundations will be a critical first step for our digital journey. These will expand our ability to create groundbreaking solutions that improve patient outcomes and quality of life. New technologies such as the ieMR will enable the health service to capture patient information and data in real-time. This will support decision-making at the bedside, and streamline clinical and administrative workflows. Our foundations will be strengthened by robust governance, system connectivity and infrastructure capability.

**People**

Our workforce will develop strong digital literacy through training programs that incorporate global best-practice methodologies. These will be delivered through the newly-established Queensland Digital Academy which will offer immersive learning opportunities for our clinicians and staff to support their transition to new workflows and solutions.

The digital healthcare environment will enable our teams to excel and partner with universities to establish more effective and integrated research to improve patient care outcomes.

Digital business as usual staffing and support functions will be established including the 24/7 Digital Metro North Support Service. Highly-skilled specialists will provide essential software and hardware support for clinical and administrative workflows.

**Process**

Streamlined processes will enable clinicians to access real-time data remotely and at the bedside. The move from paper-based to digital records will allow care teams to more efficiently coordinate care, allocate resources and deliver responsive services.
**KEY PRIORITIES**

- Develop digital leadership within our health service
- Implement an organisation-wide ieMR with mobile-friendly functionality
- Foster digital innovation strategically across the organisation
- Upgrade infrastructure for digital capability
- Invest in digital literacy for all staff
- Establish consumer partnerships for digital transformation

**We will achieve:**

- a digitally-literate workforce
- a single, integrated digital record for healthcare data.

**We will establish:**

- Queensland Digital Academy
- 24/7 Digital Metro North Support Service
- Digital Metro North Analytics
- Digital Metro North Innovation Farm.

**We will measure:**

- implementation of the ieMR by its digital footprint to agreed timeframes
- number of staff accessing ieMR on a mobile device
- number of patients transitioned to digital records and health informatics
- number of partnerships established with universities and healthcare organisations.

**INFORMATION**

Comprehensive patient information will be collated within a centralised digital record and used to provide more integrated patient care. Privacy and data security will be safeguarded through best-practice standards and Digital Metro North Analytics will be established to focus expertise and resources on the detailed process of clinical data extraction.

The Digital Metro North Innovation Farm will provide a strategic and prioritised focal point for linking difficult to resolve social or cultural problems in healthcare to innovative clinicians, advanced technology, and industry and academic partners.

**TECHNOLOGY**

The ieMR, robots, applications and internet of things will expand the digital workflows in our health service and improve service delivery within our hospitals and the community. The ieMR will form the bedrock of our digital health system and allow the digitisation of the workflows in clinical and administrative areas. Designed to deliver the digital basics, the patient care system will touch almost every workflow, clinician and staff member throughout the health service. Its establishment will enable the possibilities of a digital hospital to be realised.

The Digital Metro North Innovation Farm will be established to provide a dynamic environment where clinicians, informaticians and technology experts work collaboratively to develop innovative digital solutions to advance our world-class healthcare agenda. Technical resources will also be allocated to support digital business as usual activities.
HORIZON 2: TRANSFORMING PATIENT CARE
Patient care will be revolutionised as detailed clinical and demographic information informs personalised care plans. Live-streaming analytics will empower clinicians and operational staff with critical data enabling treatment to be adjusted in response to changing patient needs. Real-time data collection and workflow analysis will become a fundamental part of our healthcare service and deliver opportunities for improved service efficiencies and delivery.

**PEOPLE**
A workforce skilled in the data cycle (extraction, validation, presentation) will be developed and become skilled in using data to improve the quality and efficiency of care. Digital Metro North Analytics will host resources to provide organisation-wide support for both operational and research data requests.

**PROCESSES**
Targeted care plans will allow the reduction of unwarranted variations in care and the ability to interrogate patient outcomes to refine our practice and increase reliability of care.

**KEY PRIORITIES**
- Create real-time reporting to inform decision-making
- Use of standardised care plans to reduce unwarranted variability and increase reliability of care
- Develop accessible and integrated digital pathways to create innovative research opportunities
- Foster a culture of research through health informatics
- Create opportunities to share information with patients via interactive portals

**INFORMATION**
Digital Metro North Analytics will establish and manage data governance and reporting functions as our new digital environment enables access to comprehensive data sets. With robust governance based on international standards, the centre will ensure our data is clean and accessible. Digital Metro North Analytics will enable hospital clinicians, staff and executive to access aggregated clinical data in real time. Live-streaming analytics and research requests for data will be possible.

**TECHNOLOGY**
Technology will enable the linking of clinical, genetic and other data sources. Sophisticated data extraction and reporting will enable clinical, operational and executive teams to identify emerging issues and opportunities for service improvements in real time.

We will achieve:
- delivery of live-streaming analytics for clinicians and operational staff at the coalface
- research outcomes informed by real-time data and deliver innovative bench-to-bedside treatment pathways.

We will establish:
- a repository of clinical information (a digital phenobank) to provide clinicians, administrative, financial and research teams (as appropriate) with access to detailed data.

We will measure:
- the Digital Metro North Innovation Farm to create solutions to address challenging social and cultural healthcare problems.
- coverage of our hospitals and health services with digital workflows
- the number of analytic tools and innovations developed and the improvements they bring to our workflows and outcomes.
HORIZON 3: REIMAGINING OUR FUTURE

An integrated digital platform incorporating all services and research facilities will enhance our ability to create new and innovative models of care and research capability. Clinical data will be used with sophisticated data analytics, machine learning and artificial intelligence to help predict hospital admissions and prevent adverse outcomes. This will facilitate moving patient care from a “break-fix” to a “predict-prevent” model.

We will integrate our digital platform with other services and research facilities to innovate and deliver new models of care and research capability.

PEOPLE

A workforce skilled in innovation and new digital models of care will develop. Roles will evolve as the healthcare landscape changes. Our workforce will be supported by new technologies including robotics and virtual care to deliver high-quality care to meet changing needs.

PROCESSES

Machine learning, and predictive and prescriptive analytics will allow new models of care. Patients will play an active role in their own care and effectively use technology to monitor and manage care from their homes. There will be an increasing emphasis on prevention of illness rather than treatment.

INFORMATION

Our facilities will be linked with integrated digital systems and insights from Digital Metro North Analytics will allow us to move from “break-fix” to “predict-prevent” models of care. Data from biosensors and the Internet of Things will contribute to digital patient records and support the delivery of high-quality care outcomes.

TECHNOLOGY

The Digital Metro North Innovation Farm will foster new technologies such as robotics, remote-monitoring and virtual care. Sophisticated technology will underpin our ability to provide long-term care for patients with complex and high-level care needs.
KEY PRIORITIES

• New and innovative models of care will evolve to meet increasing demands
• Our people are supported as we transition to new care models
• Empowering our patients and clinicians to develop preventative models of care

We will achieve:
• the ability to interrogate our clinical data repository (digital phenobank) to facilitate world-class research
• linking of patient clinical information to their genetic information to enable precision medicine and improve patient outcomes
• digital innovation as part of business as usual clinical practice.

We will establish:
• sophisticated analytics capability using machine learning and artificial intelligence to enable our care pathways to transition from break-fix to a “predict-prevent” models.

We will measure:
• the number of new and innovative models of care
• the improvements this brings to our workforce and outcomes.
WHAT WILL HEALTHCARE LOOK LIKE IN 2032?

Our models of care will evolve in response to the challenges of an ageing population with increasing levels of frailty and chronic diseases. The healthcare workforce available to care for this vulnerable group (and our growing population) will be relatively smaller. New models of care will be developed to manage this challenge and ensure our patients continue to receive quality care.

These new models are likely to be underpinned by innovative approaches and digital solutions such as:

- in-home care for patients supported with biosensors to detect issues and robotic care assistance
- virtual care via digital channels
- remote patient monitoring using the Internet of Things
- digital information, monitoring and artificial intelligence to enable digitally-literate patients to effectively self-manage chronic diseases
- personalised care plans with precise treatments based on patient demographic, genetic and physiologic parameters to ensure value-based care outcomes.

These advancements will support models of care that are based in collaborative, therapeutic relationships between patients and healthcare providers, with highly-trained clinicians accessing the latest innovative digital solutions to deliver optimal care.
KEY INITIATIVES
DIGITAL METRO NORTH

QUEENSLAND DIGITAL ACADEMY

Queensland Digital Academy (QDA) is a flagship initiative that will deliver statewide training for groundbreaking digital initiatives in the healthcare sector. Hosted by Metro North, the QDA will partner with industry service providers to establish digital literacy and skills across three horizons for digital transformation.

The QDA will deliver curricula designed to meet the emerging learning and technical needs of Metro North staff. These will align with each horizon.

COURSE FOCUS AREAS

HORIZON ONE: DIGITAL BASICS

HORIZON TWO: DATA LITERACY AND CLINICAL REDESIGN FOR BETTER OUTCOMES

HORIZON THREE: DIGITAL INNOVATION AND LEADERSHIP
24/7 Digital Metro North Support Service

The 24/7 Digital Metro North Support Service will deliver highly-specialised and targeted software and hardware support for clinical and administrative workflows.

The service will:

• provide timely digital support for all workflows to ensure patient safety and quality standards are maintained
• identify and develop digital solutions in response to emerging issues
• apply continual best-practice models for digital transformation.

Digital Metro North Analytics

Digital Metro North Analytics will establish and manage data governance and reporting functions in our new digital environment.

With robust governance based on international standards, the team will ensure our data is clean and accessible. Sophisticated data extraction and reporting will enable clinical, operational and executive teams to identify emerging issues and opportunities for service improvements in real time.

The team will extract, validate and present data to stakeholders as reports, extracts or via dashboards to lead the transition from descriptive to predictive and prescriptive analytics.

Requests for clinical analytics will be governed by a multidisciplinary Data and Transformation Committee. The committee will prioritise requests and confirm the appropriate consents and ethical approvals are received for all research requests.

Digital Metro North Innovation Farm

The Digital Metro North Innovation Farm will provide a dynamic environment where hospital staff, industry and technology experts, and academic partners work collaboratively to develop innovative digital solutions.

The farm will be governed by a multidisciplinary committee to advise and prioritise problem identification and solution development.

A focus on challenging, complex and interconnected healthcare issues will advance our world-class transformation agenda as innovative and multidisciplinary teams scope people-centred solutions. These will be trialled and tested within the farm before deployment, evaluation and scaling across our health service.

The Integrated Electronic Medical Record

The ieMR will form the digital bedrock of our healthcare service and transform how we deliver patient care throughout Metro North. It will enable our health service to capture and analyse patient data in real-time, integrate medical devices into digital workflows, and improve service delivery within our hospitals and the community.

The ieMR will also provide clinical decision support at the bedside, deliver greater medication accuracy, increase collaborative opportunities between clinicians and researchers, and improve patient care outcomes.

Designed to deliver the digital basics, the patient care system will enable the possibilities of a digital hospital to be realised.
Our workforce develops digital literacy
Integrated research partnerships are established

Integrating information and technology
Transition from paper to digital records

Collecting and collating patient data with best practice standards

Broadens workflows to improve care
Integrates devices

Workforce skilled in the data cycle
Personalised care plans for patients

Transparency to increase efficiency and reliability

Live-streaming analytics and reporting
Robust data governance

Establish links between data and analytics
Sophisticated data extractions

Innovative workforce
New digital models of care for patients

Machine learning and artificial intelligence informs clinical practices

Predictive and prescriptive analytics

Our digital platform integrates with emerging technologies

CULTURAL READINESS

TECHNICAL EXCELLENCE

DIGITAL CLINICAL GOVERNANCE

SINGLE SOURCE OF TRUTH FOR DATA

INFORMATION GOVERNANCE AND TRANSPARENCY

INTEGRATION

DISASTER RECOVERY AND CYBERSECURITY

DIGITAL PARTNERSHIPS WITH RESEARCH TEAMS AND UNIVERSITIES
Digital Metro North will be achieved through three digital horizons which will be used to transform our healthcare system and embrace the opportunities offered through digital innovation.

**HORIZON 1: BUILDING DIGITAL FOUNDATIONS**
Building strong digital foundations will be a critical first step for our digital journey. These will expand our ability to create groundbreaking solutions that improve patient outcomes and quality of life. New technologies such as the integrated electronic medical record (ieMR) will enable the health service to capture patient information and data in real-time. This will support decision-making at the bedside and streamline clinical and administrative workflows. Our foundations will be strengthened by robust governance, system connectivity and infrastructure capability.

**HORIZON 2: TRANSFORMING PATIENT CARE**
Patient care will be revolutionised as detailed clinical and demographic information informs personalised care plans. Live-streaming analytics will empower clinicians and operational staff with critical data enabling treatment to be adjusted in response to changing patient needs. Real-time data collection and workflow analysis will be a fundamental part of our healthcare service and deliver opportunities for improved service delivery.

**HORIZON 3: REIMAGINING OUR FUTURE**
An integrated digital platform incorporating all services and research facilities will enhance our ability to innovate and construct new models of care and research capability. Clinical data will be used with sophisticated data analytics, machine learning and artificial intelligence to help predict hospital admissions and prevent adverse outcomes. This will facilitate moving patient care from the “break-fix” model to the “predict-prevent” model.
Genomics and Precision Medicine

Digital partnerships with general practitioners and aged care providers

Live-streaming analytics informs real-time reporting and decision-making

Digital phenobank
Enables detailed clinical and demographic information to inform personalised care plans.

Analytics capability for clinical, operational, administrative and financial streams

Queensland Cancer Institute
Nationally recognised as a Centre of Healthcare Excellence for care of the older person

Heart and Lung Institute
New models of care prevent adverse patient outcomes

Predictive analytics inform hospital admissions

Life sciences and research platform integrated

Machine learning and artificial intelligence informs clinical practice

Integration of research institutes

Transforming patient care

Horizon 2

Reimaging our future

Horizon 3

Reduced variations in care through PowerPlans governance

Live-streaming analytics informs real-time reporting and decision-making
**Digital Metro North Strategy Framework**

Better quality of care, better efficiency of care, better population health, better experience for our staff, patients and their families.

<table>
<thead>
<tr>
<th>METRO NORTH STRATEGIC OBJECTIVES</th>
<th>HORIZON ONE</th>
<th>HORIZON TWO</th>
<th>HORIZON THREE</th>
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<tbody>
<tr>
<td>To always put people first</td>
<td>Queensland Digital Academy</td>
<td>Digital partnerships with general practitioners and aged care providers</td>
<td>Life sciences and research platform integrated</td>
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<td></td>
<td>Integrated electronic medical record</td>
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<td>Genomics and precision medicine</td>
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<td>To improve health equity, access, quality, safety and health outcomes</td>
<td>Digital Metro North Analytics</td>
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<td>New models of care prevent adverse patient outcomes</td>
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<td>WiFi everywhere</td>
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<td>Digital clinical governance</td>
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<td>To deliver value-based health services through a culture of research, education, learning and innovation</td>
<td>Digital Metro North Innovation Farm</td>
<td>Live-streaming analytics informs real-time reporting and decision making</td>
<td>Predictive analytics inform hospital admissions</td>
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<td>Digital Metro North App for support and communication</td>
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<td>ePrescribing, decision support, PowerPlans</td>
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<tr>
<td>BUILDING THE FUTURE</td>
<td>Supporting cutting-edge innovation</td>
<td>Enabling research</td>
<td>Translating advances rapidly into practice</td>
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**CORE STRATEGY PRINCIPLES**

- Cultural readiness
- Technical excellence
- Digital clinical governance
- Single source of truth for data
- Information governance and transparency
- Integration
- Disaster recovery and cybersecurity
- Digital partnerships with research teams and universities
REVIEW AND EVALUATION

The Metro North Digital Metro North Strategy outlines the roadmap for Australia’s first hospital and health service to strategically approach digital transformation. It positions Metro North as a world-class leader in healthcare and provides clear strategic coordination and direction for our gradual and comprehensive digital evolution.

Encompassing both foundational and aspirational digital capability, Digital Metro North will enable ongoing delivery of outstanding quality care over the lifetime of this strategy (2018 – 2032).

Research methodologies will be embedded into our approach to effectively measure the impact of our interventions.

The strategy will facilitate collaborative partnerships with academic, industry and non-government organisations and we will work with the Digital Health CRC to develop and test digital health solutions for our patients. This will ensure we deliver effective outcomes and build an evidence base for healthcare organisations undergoing digital transformation.

The key priorities will be achieved through comprehensive action plans including performance measures, timelines for delivery, evaluation, roles and responsibilities. These will be aligned with the core principles and enablers for this strategy.

Digital Metro North will connect our health services and facilities through cutting-edge technologies, encourage groundbreaking research initiatives, and reimagine our care models to deliver predictive and preventative pathways for all patients in the future.

ENDNOTES


