

Building a high quality **sustainable health** **system**

World healthcare models are shifting towards agile, consumer-centric health management, optimised for quality and patient safety. Queensland Health has a vision to build a high quality, sustainable health system that exhibits the following characteristics:

- effective—quality and outcome focused
- responsive to changing macro and micro system variables and population health profiles
- efficient
- affordable
- innovative.

This vision requires a paradigm shift in healthcare delivery, foundationally supported by high quality ICT infrastructure.

Trends in world healthcare

Internationally, the trend in healthcare delivery is shifting toward:

- accountable care services
- consumer-centric health services delivered closer to or within consumers' homes
- seamless integration of care in managing multiple chronic conditions involving an interdisciplinary care team that crosses organisation or even jurisdictional boundaries
- knowledge empowered, flexible, mobile workforce with changing professional profiles. For example, devolution of professional responsibilities from medical to nursing and allied health; increasingly ICT engaged generation of professionals
- enabled and empowered consumers with mixed ICT capability profiles and health literacy.

These global trends present an opportunity to reshape attitudes towards ICT investment and the resultant impact on healthcare provision in Queensland. To keep pace with international healthcare leaders, Queensland Health must embrace innovation and adopt more agile approaches to implementation.

‘Clinicians need increased access to patient history in the health record, irrespective of where care was provided. ICT will enable service linkages between all service providers as people move between rural, regional and metropolitan service providers for their clinical care.’

Glynis Schultz,
Chief Executive,
South West Hospital and Health Service

Some of the relevant global innovation opportunities include:

- **Electronic medical records**—patients and clinicians can access appropriate medical information at the point of care, throughout the life of the patient and across the continuum of care.
- **Portals**—these provide the basis of integrated information exchange across the healthcare system and a mechanism to access services, patient information and preventative health information.
- **Information interoperability**—the secure exchange of information between care settings and providers improves the health system’s ability to work with health service partners and improves the integration of health services across care settings.
- **Mobile health**—remote and mobile monitoring of patient telemetry and other vital signs can increase patient safety, reduce the risk of adverse medical events and potentially reduce unnecessary hospitalisation.
- **Mobile telecommunications technologies**—deliver health services in, or as close to home as possible reducing travel costs for patients and providers, as well as offer access to a more equitable distribution of health services.
- **Integrated scheduling and eReferrals**—streamline the patient pathway with options for patient input and the transfer of patients.



'The emergency departments in Metro North HHS are hampered by a continuing struggle to get the relevant information to support immediate clinical care. We are constantly chasing information from multiple different databases which costs dearly when time is critical. We need accurate and up to date information from across the health services on current medications, recent tests and clinical history so that our hard working doctors and nurses are supported to provide the best care for their patients.'

Dr Colin Myers

Executive Director Critical Care Stream,
Metro North Hospital and Health Service

Electronic medical records

Greater access to complete and longitudinal patient health information is integral to improving the quality, efficacy and safety of healthcare delivery. The general public is rapidly adopting new and innovative technologies to manage various aspects of their lives, including their health and wellbeing.

Patient access to electronic medical records is an essential part of self-managing health-related decisions and responsibility. Equally, clinician decision making is better supported with timely and easy access to results, medications, medical referrals and other clinical documents within an integrated electronic medical record (ieMR).

Portals

Portals will provide patients with a 'one-stop-shop' solution to manage their healthcare data and interact securely online with the health system. They allow patients to communicate with their healthcare providers to:

- make medical appointments
- view their medical records and ongoing healthcare plans
- renew prescriptions
- access their prescribed medications.

Portals provide an additional channel through which to access health services as well as public health information. Further to increased access for patients, clinicians can retrieve and enter medical information and access networks of clinical best practice and practitioners. The fast and accurate dissemination of health information can improve outcomes for community health and increase health literacy.

Information exchange between healthcare settings and providers

There is an expectation that patients, clinicians and other healthcare providers will have consistent and timely access to standardised health information that can be easily and securely shared between primary care providers, specialists, hospitals, mental health and other community health providers, where appropriate.

The ability to exchange information between systems and the ability to find and use information from a variety of systems is essential when looking to realise a patient-centred health record and value-driven health system. Information sharing is essential to improving the quality of healthcare, developing healthier communities and lowering health costs.

Mobile health

Mobile technology can improve patient convenience and safety, enhance treatment outcomes and reduce the cost of care. The ICT market is rapidly expanding into wireless and mobile technology that can transform the way healthcare is delivered at the point of care. The ability to access patient records, conduct mobile consultations, monitor vital signs and track patients anywhere, at any time is transforming the way clinicians practice medicine and engage with patients.

Mobile telecommunications technologies

Telehealth involves the use of telecommunications technology to deliver healthcare when patients and healthcare providers are not in the same physical location. The system improves access to services, clinical networks, specialist practitioners and provides a more personalised method of healthcare delivery in rural and remote care settings.

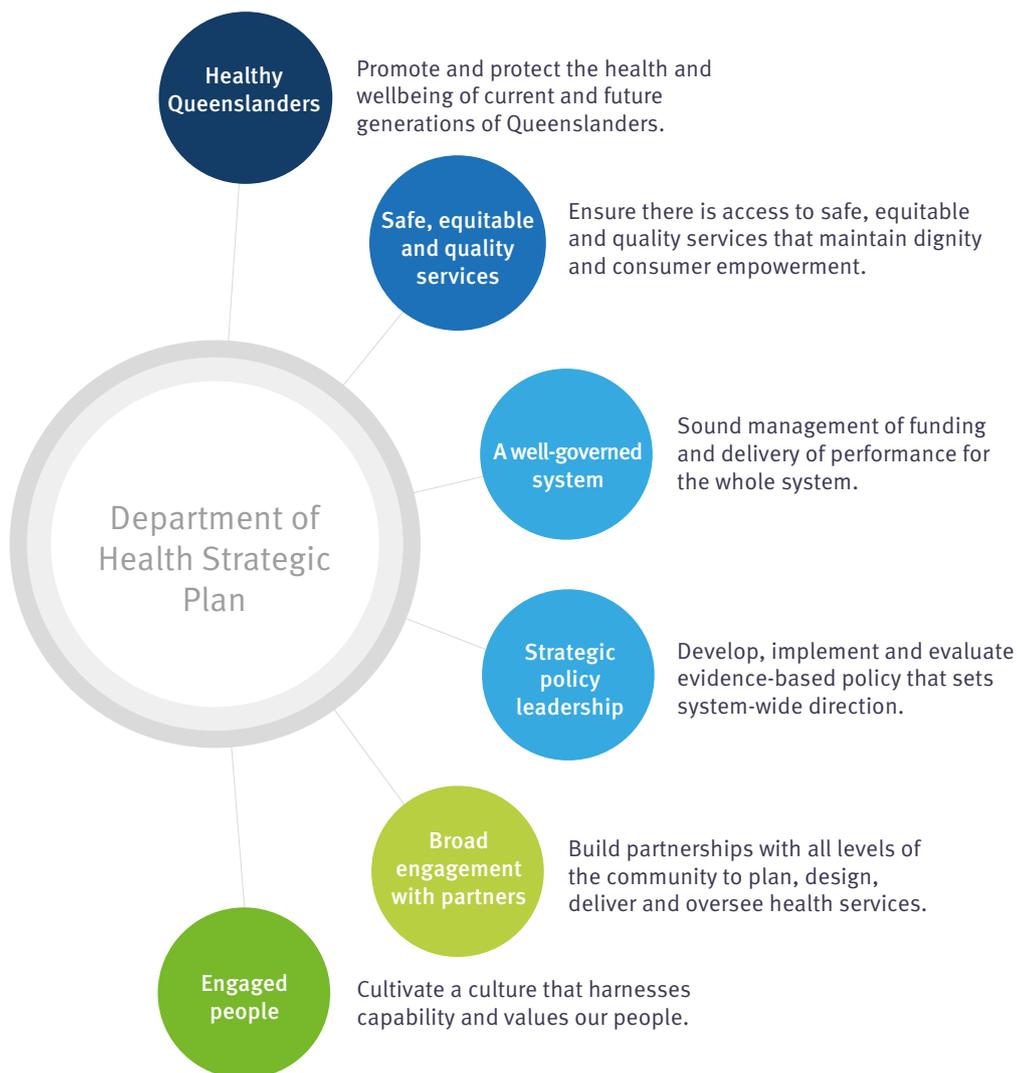
Electronic referrals and scheduling

Electronic referrals (eReferrals) and scheduling assist clinicians to manage the transfer of patients and integrated scheduling of appointments across the health system. eReferrals reduce the current reliance on paper-based referrals, improving the quality of care and providing instant access to the complete and relevant information required by treating clinicians.

Clinicians also benefit from being able to review recent patient services as well as future scheduled services across care settings and systems, through a scheduling gateway. Patients benefit from integrated scheduling by having a longitudinal view of the services they are receiving, including the ability to make changes to their schedule via a patient portal.

A plan for better healthcare

The Department of Health *Strategic Plan 2014–2018* defines the vision for structural and cultural improvements in the healthcare system across six strategic objectives:



'We want a connected community and health system where people are empowered to manage their health, make healthy and informed choices, receive their care in or as close to home as possible, and where healthcare providers can collaborate to produce the best health plan and outcomes for people in the region.'

Julie Hartley-Jones

Chief Executive,
Cairns and Hinterland Hospital and Health Service

The strategic plan details the actions required to support the provision of the right services, at the right time, as close to home as possible and in ways that better suit the consumer. It has been crafted with a sustainable, long-term view of delivering recognisable improvements in the health system for generations to come.

Queensland Health has already begun to revitalise frontline services. Increased access to patient information through initiatives, such as ieMR and information interoperability will support the national Personally-Controlled Electronic Health Record (PCEHR).

The ICT investment priorities outlined in this Strategy support the achievement and enablement of the department's strategic direction and service delivery requirements. Planned, strategic investment will ensure a platform from which Queensland Health will transform the way frontline healthcare services are delivered, in line with the strategic plan and changing nature of healthcare globally.



Healthy Queenslanders

A primary driver for Queensland Health is the fair and equitable distribution of health service provision across HHSs irrespective of size and population.

ICT is an integral enabler of seamless health service delivery across care settings, HHSs and public/private healthcare provider boundaries. Central to achieving health service equality and patient-driven decision making across the state, is the move from paper-based records to electronic records, with comprehensive health information that can be easily accessed.

Safe, equitable and quality services

The foundations of present day medical practice are based on electronic health systems (eHealth). Information can be rapidly disseminated through electronic access to medical journals, texts and patient data which is increasingly stored electronically. While having this information available electronically has numerous benefits, the delivery of this information to medical staff has been less than ideal, requiring doctors to be tied down to devices, including immobile desktop computers.

The next stage in digital informatics is to gain rapid access in both storing and creating material in a convenient manner and the increased use of mobile devices. The use of mobile technology will increase the efficiency of health service delivery and alternative models of care.

A well governed system

Enabling equitable access to affordable health services and timely health information for all Queenslanders is paramount. Investment in infrastructure will establish an ICT platform with foundational capability that will enhance clinical networks and renew service delivery, and present opportunities to launch new models of care with integrated systems that will generate significant value for the health system and patients.

Strategic policy leadership

Over the next five years, Queensland Health will invest in broadening capability in many areas including business intelligence, centres of innovation and global clinical research to build a foundation of improved strategic planning and service delivery.

Investment in digital exemplar hospitals will support high quality, Queensland-based, tertiary facilities to transform services, transition to new and innovative, alternative and sustainable models of healthcare.

Broad engagement with partners

Sharing information and the integration of services between HHSs and other healthcare providers is critical to supporting guided care pathways best suited to health consumer needs. Systems need to seamlessly manage the administration and transfer of patients, and the sharing of information across care providers and clinical settings.

To reduce patient risk and improve the quality of care, patient information must be readily available to clinicians and carers across the system. This will be enabled through increased information interoperability and the integration of systems, services and clinical networks.

Engaged people

Queensland Health is committed to recruiting and maintaining a flexible and experienced health workforce. Increased connectivity, standardisation of systems and the introduction of best practice care models, such as improved clinical practices and systems, will further aid the recruitment and retention of high quality healthcare professionals.

Contemporary business tools will enable an efficient, effective and mobile workforce, with the ability to access patient information anywhere, at any time, with integrated scheduling and ordering to streamline the delivery of care.

Figure 2: eHealth Investment Strategy strategic alignment

Health system objective	Challenge	Investment	Outcome
Healthy Queenslanders	Disparate patient information that is paper-based and not accessible at the point of care, across care settings or by patients themselves.	ieMR	One patient, one record accessible by clinicians at the point of care across care settings, as well as by third party providers and patients, enabling them to take better responsibility for their healthcare.
	Inability to share information across care settings and between third party providers.	Primary and community care	Patient and clinical information can be shared across primary, community and acute care settings.
Safe, equitable and quality services	Ageing systems that are no longer supported or are barriers to contemporary practice.	Systems renewal	Reduction in patient risk and improved operational efficiency.
A well-governed system	Ageing infrastructure and increasing demand for services.	Infrastructure utility	Increase access to services and a reliable ICT platform across all HHSs that support new systems and models of care.
	Inability to access or share results of diagnostic imaging electronically, resulting in duplication of tests and orders.	Sharing of digital images	Enable a patient-centric view of high quality, high resolution digital images and reports across a range of clinical services enabling electronic access by authorised clinicians, healthcare partners and the patient.
Strategic policy leadership	Paper-based.	Digital hospitals	Effective and quality healthcare delivery across digital hospitals through ieMR, scheduling and referrals, results and medications management.
	A lack of common ICT standards and architecture across the health systems to enable transformation in healthcare delivery.	eHealth architecture foundations	Establishment of eHealth architecture foundations to optimise the investment in infrastructure utility and ieMR through associated systems and services including patient and provider identify, knowledge hubs, portals, business intelligence, scheduling and clinical terminology services.
Broader engagement with partners	Ability to share information across the care continuum.	Information interoperability	Increased ability to share information across the care continuum, between HHSs and across the health system.
Engaged people	Attraction and retention of skilled people.	Contemporary desktop	Contemporary productivity suite enables mobility to support an evolving efficient workforce.

eHealth vision

Complementing the Department of Health Strategic Plan 2014–2018 is the eHealth architecture, detailing the logical representation of elements and underpinning ICT capability required to integrate and support health service delivery across the state. Through the eHealth architecture and the Strategy, Queensland Health will effectively prioritise and realise the eHealth vision for health service delivery.

eHealth architecture provides a framework for a target state of ICT in Queensland Health and enables strategic and service delivery priorities and address key risks and challenges within the current ICT environment.

Underpinning eHealth architecture will be roadmaps, standards and best practice guidelines that establish the boundaries in which the HHSs and the department can plan, design and implement ICT investment priorities. The strategies and roadmaps will ensure consistency, interoperability and integration across the health system, while maintaining the flexibility needed in a federated environment dedicated to servicing local requirements.

The investment priorities outlined in the Strategy not only include foundational elements, such as ICT infrastructure and increased access to patient information, but also priorities necessary for a more integrated health system that changes the way patients access healthcare services.

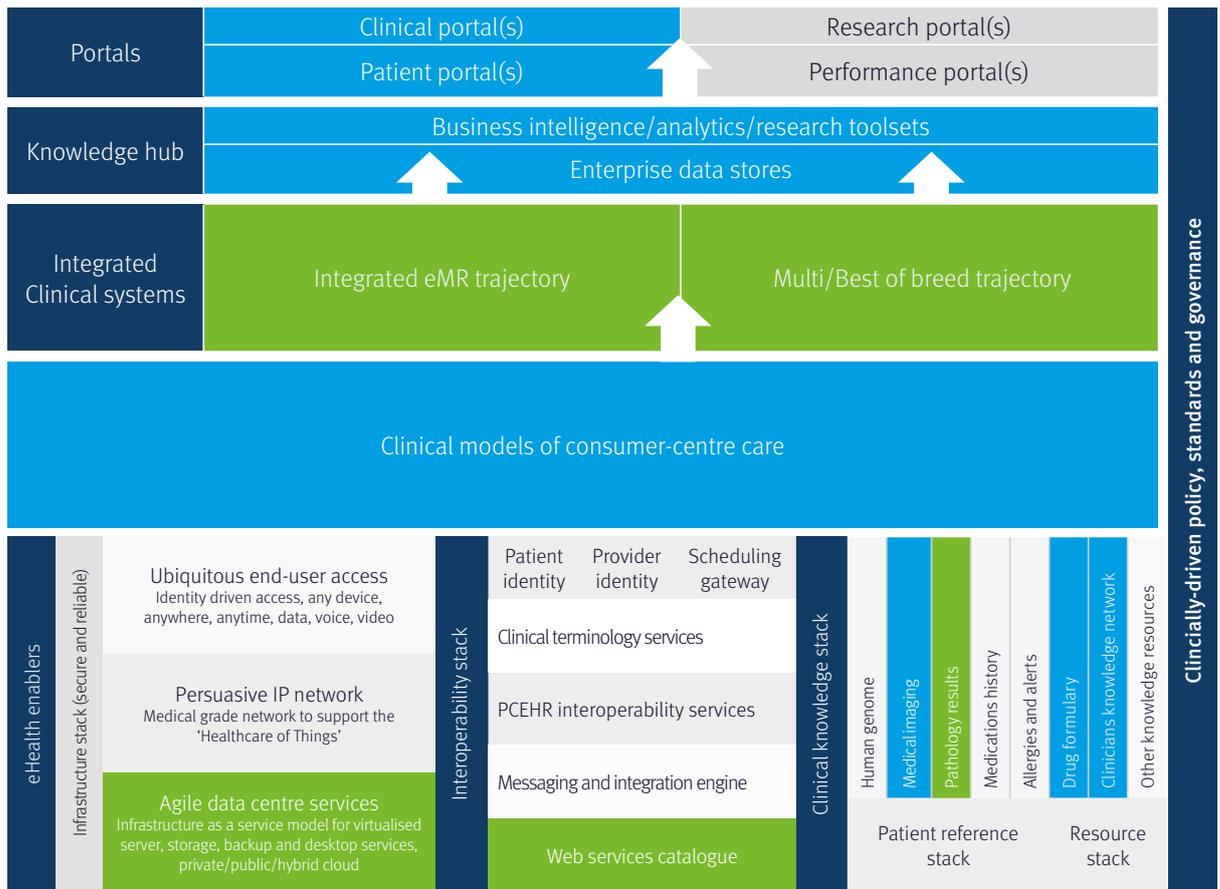
A summary of how the investments outlined in the Strategy align to eHealth architecture is shown in Figure 3: Proposed investment aligned to eHealth architecture.

‘By establishing technical enablers of eHealth, we can design new clinical models of consumer-centred care that uses state-of-the-art integrated clinical systems that also build and maintain a clinical knowledge hub that allows the health ecosystem to access health information portals to deliver better health outcomes.’

Mal Thatcher

Chief Health Information Officer,
Queensland Health

Figure 3: Proposed investment aligned to eHealth architecture



Investment priorities

The investment priorities outlined in this Strategy represent ‘priorities for the health system, by the health system’. They represent a collective ICT investment prioritisation agreement between HHSs and divisions within the department, cognisant of current financial pressures and the capacity and capability of the health system to deliver.

Investment prioritisation is based on a two-stage process with HSCs and senior departmental executives. Candidates for investment were identified through extensive ICT strategic planning engagements and consultation with all 16 HHSs, ensuring all of the investment priorities identified were aligned to the overarching strategic direction of Queensland Health and the individual strategic service provision priorities of the HHSs.

High priority investments include:

- infrastructure utility
- contemporary desktop
- information interoperability
- high risk systems
 - patient administration system
 - pathology system renewal
 - finance system renewal
 - electronic medical records
- digital hospitals
- eHealth architecture foundations
- primary and community care
- digital imaging and transmission.

Each of the priorities in the Strategy align to the individual HHS ICT investment roadmaps.



Investments were prioritised based on the following principles:

- alignment to strategic intent (e.g. improve access to healthcare)
- delivery of greatest benefit (value) to the healthcare system
- contribution to risk mitigation/reduction to the patient and the broader healthcare system
- balance between remediation versus transformation
- arising urgent and non-discretionary (unavoidable)
- capacity (internal and external) to deliver the investment
- sustainability
- organisational readiness.