

Master Plan 2021/22 – 2036/37

Children's Health Queensland

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Deloitte.



**Queensland
Government**



Contents

Defining the vision
 Strategic context and methodology
 Current infrastructure
 Case for change
 Response strategies
 Project roadmap

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Version control

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20/12/2021	V0.1 DRAFT	Initial draft of chapters 1 to 4
20/01/2022	V1.1 DRAFT	Initial draft of chapters 5 and 6
10/02/2022	V2.0 DRAFT	Final draft for endorsement
30/06/2022	V3.0 FINAL DRAFT	Final draft incorporating CHQ Board Feedback

01 A bright future – Defining the vision for children’s health services



A bright future

Leading life-changing care children and young people – for a healthier tomorrow.

- Children's Health Queensland vision

Defining the vision for children's health services

At birth, the average Queensland child can expect to live until they are approximately 81 – 85 years of age¹. A proportion of those children however, do not get the best start to life – with a range of factors (socioeconomics, genetics and others) affecting their health and wellbeing.

For children – more so than any other age group in our population – we have the opportunity to change our outlook on health care and how and where we deliver services, to change that trajectory and give them the best start to life.

Research shows us that for every dollar invested in child and youth development programs (including in health promotion, prevention and early intervention), the cost-benefit ratio ranged from \$3.78 to \$8.74 in terms of economic contribution². Investment in health during childhood is more important than at any other age as poor health during the early years is likely to permanently impair over the course of a person's life³. The Heckman Curve⁴ identifies the highest rate of economic returns comes from the earliest investments in children. Investing early and building skills to provide greater success to more children can reduce social spending for society.

Similarly, advances in health and medical treatment means we now keep more children alive and improve their functional attainment in instances where they would have limited life expectancy or significant impairment in the past.

This means the need for proactive, flexible and consumer/family-centric care across the continuum for children is increasing significantly, especially as consumers at the tertiary end of the spectrum continue to become more complex and live longer.

Despite this and our collective best efforts, health services for children and young people are, at times, still structured in the same way as the rest of our health system, characterised by services that are generally hospital-centric, inflexible, and complex to navigate. Services are delivered by multiple providers, often with unclear or overlapping roles and responsibilities.

This first Master Plan for Children's Health Queensland (CHQ) has provided us with opportunity to challenge the status quo and reimagine the future health system for children and young people across Queensland, and to plan for the services and infrastructure that will support us to deliver on that vision.

1. Australian Bureau of Statistics, 2020, "Life tables", retrieved from <https://www.abs.gov.au>
2. Northern Territory Government, 2011, "The value of investment in the early years: Balancing costs of childhood services", retrieved from <https://www.nt.gov.au>
3. World Health Organisation, 2005, "Investing in Children's health: what are the economic benefits?", retrieved from <https://www.who.int>
4. Heckman Equation, 2022, "The Heckman Curve", <http://heckmanequation.org>

Our vision for children's health services remains the same – *[to lead] life-changing care for children and young people – for a healthier tomorrow.*

However, the Master Plan process has focussed our attention on designing the system that will help us to deliver on that vision – a seamless, child and family-centred system, that delivers services in partnership with others enabling a broader health and wellbeing ecosystem, closer to home, and empowering children and their families and carers to take control of and lead their own health.

This **future system will be a network of care across** the state and providers and will not require all patients to come to a central Queensland Children's Hospital (QCH) for regular, routine checks or even secondary-level acute care. It will extend the reach of QCH across the state enabled by technology to support the acute care of more children closer to home. And it will provide equitable care when it is needed, embedded in the communities we serve.

This can and will have a real life impact for our consumers and their families.





Design principles

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Master Plan design principles

To guide development of the service and infrastructure responses in this Master Plan – that ultimately will help achieve our future vision for children’s health services – a number of design principles were developed and agreed. These are defined in Figure 1 below.

While this is a CHQ Master Plan, we alone can not effect all of the change required to achieve this vision. Many of the responses outlined in the Master Plan require us to partner more and with different organisations than previously, as well as requiring a better defined, agreed and embedded system-wide response to children’s health and wellbeing.

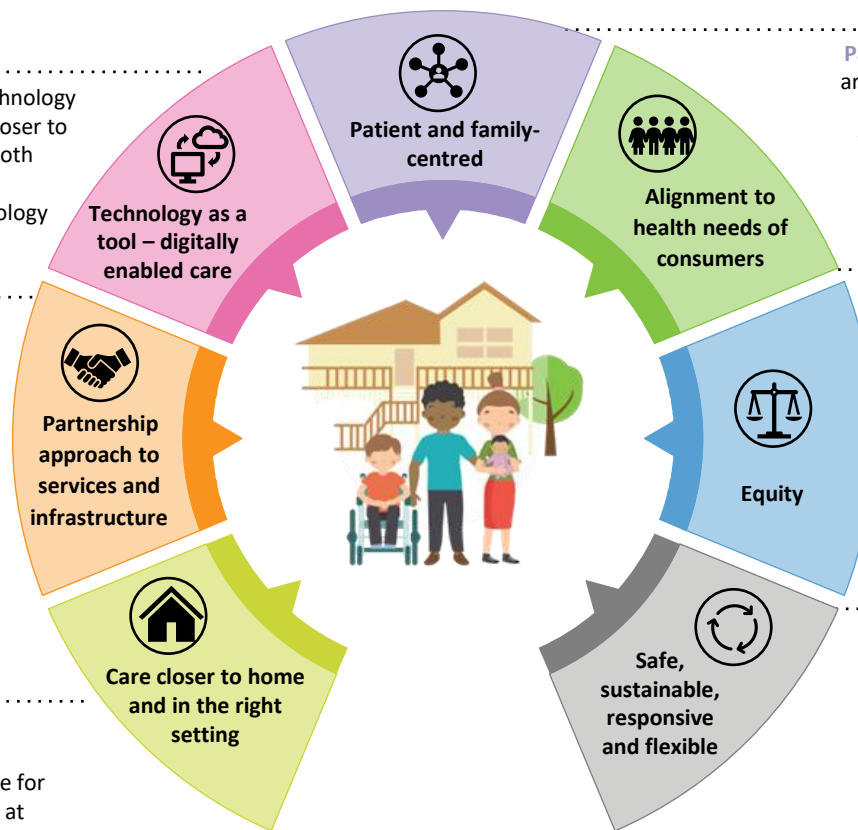
While this may require a different way of working, and potentially an evolution to CHQ’s role in the health system, the service and infrastructure responses outlined in our first Master Plan clearly outline the case for change and an ambitious roadmap for a bright future for Queensland’s children and young people.

Figure 1: Master Plan Design Principles

Technology as a tool – digitally enabled care – technology will provide greater opportunities to deliver care closer to home and in alternative settings; this will include both digitally-enabled care models (and interfaces for consumers and their families), as well as the technology infrastructure that underpins this (supporting our workforce, operations and direct clinical services).

Partnership approach to services and infrastructure – improving the health and wellbeing of children and their families is not CHQ’s responsibility alone. Partnering through a network of care with other HHSs and organisation (such as non-government organisations, primary health care, the private sector, education providers and other human services organisations) will ultimately deliver better outcomes for children and their families. This means we will lead in some areas, and support in others – including infrastructure, where we may use our own assets or lease / occupy our partners’ spaces.

Care closer to home and in the right setting – delivering care as close to where people live as possible; while providing greater options and choice for how and where consumers access services (such as at home, in the community setting, and online).



Patient and family-centred – services and infrastructure are designed for and in consultation with consumers and their families; and “that every decision made is seen through the lens of the patient and that consumers are involved at every level from the bottom up...” (CHQ Health and Wellbeing Services Plan).

Alignment to health needs of consumers – services will be co-designed together with consumers and delivered based on evidence relating to what they need, both quantitative and qualitative.

Equity – no matter where you live in Queensland, your economic situation, your cultural heritage, or if you have a disability, you should be able to access safe, high quality care required according to your needs.

Safe, sustainable, responsive and flexible – the services we deliver and infrastructure we use to do so will deliver safe, quality care; with a focus on innovation and sustainability to maximise value and outcomes; and to respond to the needs of consumers and clinicians, including as they change over time.



Emerging trends in health

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Broader context

The strategic positioning of CHQ in the broader global, national and statewide context is an important consideration to the 15-year Master Plan, particularly as it relates to CHQ's objectives and directions.

Global trends

A number of emerging global trends have been considered in this Master Plan, and provide an important trajectory for better planning CHQ's needs. These trends were collated through a horizon scan of case studies and consultation with Subject Matter Expertise in healthcare, Government policy and digital and healthcare transformation and paediatrics. These trends were further tested with the CHQ Executive Leadership Team (ELT) in a *Future of Health* session.

Hospitals, and particularly health in general is undergoing rapid evolution. Emerging trends such as virtual care, out of hospital care/hospital in the home, a holistic view of health and co-commissioning and partnerships are anticipated to have considerable impact on the current service delivery models for CHQ.

It is in this context that the 15-year Master Plan identifies a pipeline of investment to support future need. Importantly, this Master Plan considers a broad range of non-infrastructure solutions and alternate delivery models including how existing services can be delivered to be more consumer centred.

These emerging trends also unpin the consultation approach in order to ensure the Master Plan is identifying strategies and options that support contemporary and emerging models of service delivery.

Current healthcare trends

In Australia, there are additional factors driving the reform agenda in health, including:

- A shift to promoting wellbeing and health equity – including the establishment of Health and Wellbeing Queensland; and the new approach to developing Health Equity strategies to drive improved health outcomes for First Nations People
- Importance of partnerships and co-commissioning – new innovative models and partnerships that CHQ has entered into will become the new norm. These include service delivery partnerships with the University of Queensland (UQ), Institute of Urban Indigenous Health, and the South East Queensland (SEQ) partnership to develop consistent Health Equity Strategies for First Nations People
- Increasing links and embedding of research and education in clinical practice
- Emerging workforce challenges, including the need to look outside traditional role delineation to maintain pace with workforce requirements
- Shift to community-based treatment - an increased drive in paediatric services to keep children and young people out of hospital where possible. This has been driven by the introduction of new therapies and minimally invasive surgery, which are reducing the need for hospitalisation.

Figure 2: Emerging trends applicable to healthcare



Virtual care

The use of virtual care models, including virtual hospital models, has grown rapidly and will continue to grow into the future. COVID-19 has accelerated this shift in service delivery trends.



Models of care

In response to increasing cost pressure and changing consumer preferences and patient-centred care, health care providers are introducing alternative care delivery and operational models, such as shifting the spectrum of care from hospitals to lower-cost settings.

Some example of alternative care options growing in popularity are:

- Greater focus on the delivery and value of outcome-based care models through alliance contracting or development of bundle payments.
- Home care, using technology and monitoring, delivers treatment at reduced costs and improved patient satisfaction.
- Telehealth which allows patients, particularly those in remote areas with limited access, to health care services to receive care closer to home.



Holistic view of health

Future models are oriented around meeting the holistic needs and goals of the consumer. Experiences are seamless with automated, aligned, and integrated connection between areas.



Co-commissioning and partnerships

Leveraging co-commissioning and partnerships reduces service gaps, makes healthcare easier for the community to understand and access as well as foster a shared approach to addressing all the different areas that impact on health.



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COVID-19 impact on emerging trends

The global health care sector continues to face and manage new challenges presented by the ongoing COVID-19 pandemic, which continues to dominate health care systems' attention and resources. The pandemic has elevated the human experience of our workforce and reshaping what, how, and where work is performed, swiftly scaling virtual health services for consumers. At the same time, the system continues to address the heightened importance of inequities of health care, sustainability, and the environment.

Deloitte's 2022 Global Health Care Outlook⁵, reviews the current state of the global health care sector and explores six pressing sector issues:

- Health equity
- Environmental, social and governance relating to climate change
- Mental Health and wellbeing
- Digital transformation and health care delivery model convergence
- Future of medical science
- Public health reimagination.

The global pandemic of historic proportions, COVID-19 has demonstrated exponential advancement in medical science; an explosion of digital technologies, data access, and analytics; informed and empowered consumers; and a movement from disease care to prevention and wellbeing—proving to be the catalyst for the clinical, financial, and operational transformation that health care has long promised to the world.

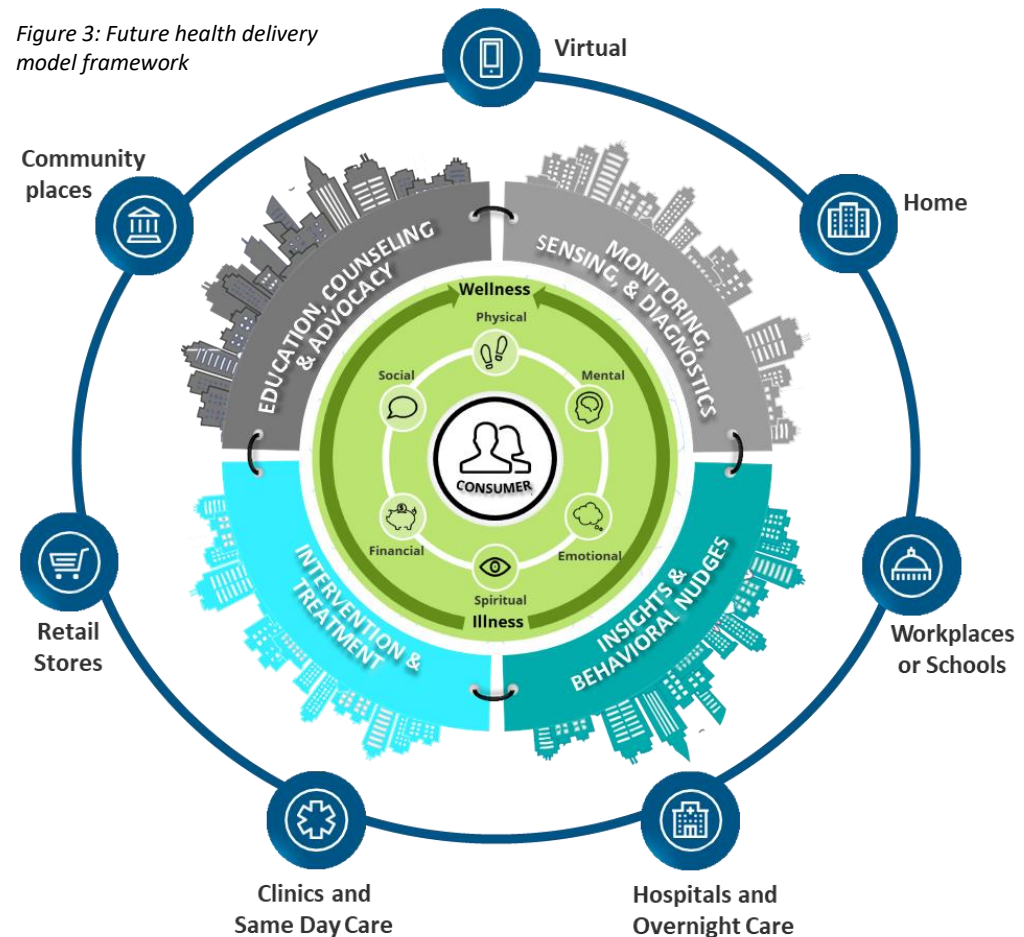
Despite COVID-19's many devastating impacts, it does present the healthcare sector with a powerful opportunity to accelerate innovation and reinvent itself. As we have been envisioning the Future of Health™ and what the ecosystem may look like in 2040, we had anticipated many changes that are occurring today. What we had not predicted, was that the global pandemic would be the catalyst to kick start and accelerate those changes so quickly⁶.

5. Deloitte, 2022, "2022 Global Health Care Outlook", <https://www2.deloitte.com/au/en/pages/life-sciences-and-healthcare/articles/global-health-care-sector-outlook.html>

6. The Economist Intelligence Unit, 2021, "World Industry Outlook: Healthcare and Pharmaceuticals".

Figure 3 provides a framework for how future health delivery models can be designed to address consumers' unique need and preferences – ensuring consumers are at the centre, and taking a broader community-based (less hospital-centric) view of health and wellbeing.

Figure 3: Future health delivery model framework





Consumer and carer stories

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Bringing multiple clinicians together via telehealth with the patient for a single consultation reduces the number of times a consumer interacts with a health service, but exponentially improves the quality of the care provided. From the bush to beach or even just down the road, it's about making sure care doesn't take away from the consumer's life.



"My daughter has congenital heart disease (CHD)...a very common birth defect in Australia. She requires lots of extra support from health care specialists, such as cardiologists, cardiac surgeons, allied health clinicians, child development experts, paediatricians and primary care experts and will do so over much of her life. Access to the telehealth service provided by Children's Health Queensland means we can get her screening, assessments and treatments at home or at our local doctor's clinic." (Parent)

Jamarl had poor hearing and would rarely speak when he first attended the Deadly Ears clinic in Cherbourg in 2018. The eight-year-old had been living with a perforated eardrum (holes in his eardrum) for at least three years which meant every voice and sound he heard was muffled. This hearing loss made it hard for him to participate in lessons at school and his learning was suffering. Even engaging with his family and community was challenging. The Deadly Ears outreach team diagnosed the problem and provided him with the corrective surgery he needed in the same week and within his home community.





Master Plan overview

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Purpose

The Master Plan (this plan) has been developed to identify the infrastructure required to support the evolution of safe and sustainable paediatric services into the future over a 15-year time horizon (between 2021/22 to 2036/37).

Figure 4 outlines the key Master Plan chapters including key content within each section.

Scope

The scope of the Master Plan includes:

- Review of trends nationally and internationally relating to children’s health services
- Review of existing CHQ-owned assets from an infrastructure perspective

Scope (continued)

- Development of detailed clinical service activity and infrastructure projections over a 15 year time horizon
- Development of service and infrastructure response options
- Development of child and family centred infrastructure considerations
- Consultation and engagement with CHQ staff, consumers and families, and other stakeholders (e.g. other HHSs, Department of Health, etc.)
- Development of a 15-year Master Plan.

Figure 4: Outline of Master Plan chapters

Defining the vision for Children’s Health Services	Strategic context and methodology	Current infrastructure and services	Case for change	Response strategies	Project roadmap
<p>Defining the vision for children’s health services across Queensland including CHQ’s role over the 15-year time horizon.</p> <p>Contents:</p> <ul style="list-style-type: none"> • Bringing our vision to life • Master Plan design principles • Master Plan overview 	<p>Introduction, purpose and background to this report.</p> <p>Contents:</p> <ul style="list-style-type: none"> • Strategic context informing the Master Plan • Master Plan methodology and approach • Stakeholder engagement in developing the Master Plan 	<p>Summary of statewide and CHQ services as well as CHQs current infrastructure.</p> <p>Contents:</p> <ul style="list-style-type: none"> • About CHQ and its role in the health system • CHQ’s current services (operational current state) • CHQ’s current infrastructure – summary of infrastructure profiles for community sites and the QCH precinct 	<p>Summary of future service changes and trends.</p> <p>Contents:</p> <ul style="list-style-type: none"> • Changing service models • Increasing demand creates infrastructure capacity gaps • Infrastructure functionality and performance 	<p>Formulation of the infrastructure response framework – priorities, service and infrastructure.</p> <p>Contents:</p> <ul style="list-style-type: none"> • Response framework – Priorities, Service responses and Infrastructure responses • Service response details • Infrastructure response details 	<p>Outline of the next steps in response to the Master Plan.</p> <p>Contents:</p> <ul style="list-style-type: none"> • Future projects • Roadmap • Delivery considerations • Child and family centred infrastructure considerations

02 Strategic context and methodology



Population profile

Paediatric population demographics across Queensland

Paediatric population growth

Based on Queensland Government Statistician Office (QGSO) population projections for children aged 0-19 years, the population of children in Queensland is expected to grow at 1.2 percent annually over the next 15 years. This means that by 2037, there will be an additional 263,396 children living in our state.

Most of this growth will occur in SEQ (Figure 5), with 156,990 additional children projected to be living in Brisbane (with growth concentrated in the Northern, Western and Southern suburbs), and an additional 70,229 children living on the Gold and Sunshine Coasts. Most of the SEQ growth is outside of QCH's local/non-tertiary catchment.

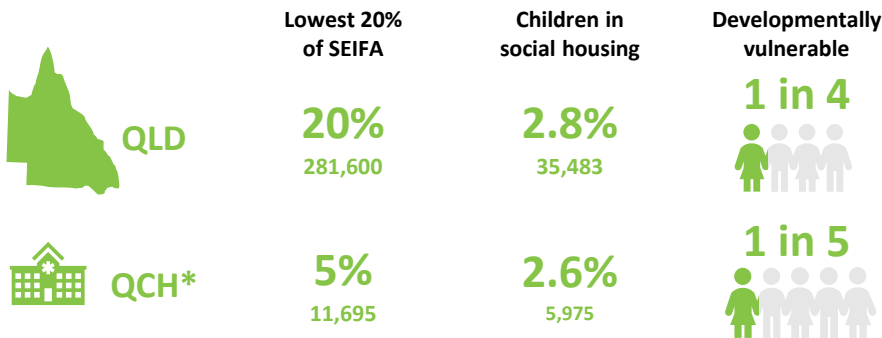
In regional Queensland, growth is also projected for Cairns and Townsville which will grow at 1.1 percent annually from 2021/22 to 2036/37, resulting in an additional 23,465 children by 2037.

Social determinants of health

The social determinants of health are the non-medical factors that influence health outcomes. These are particularly important for children as it impacts development and may impact their trajectory in life.

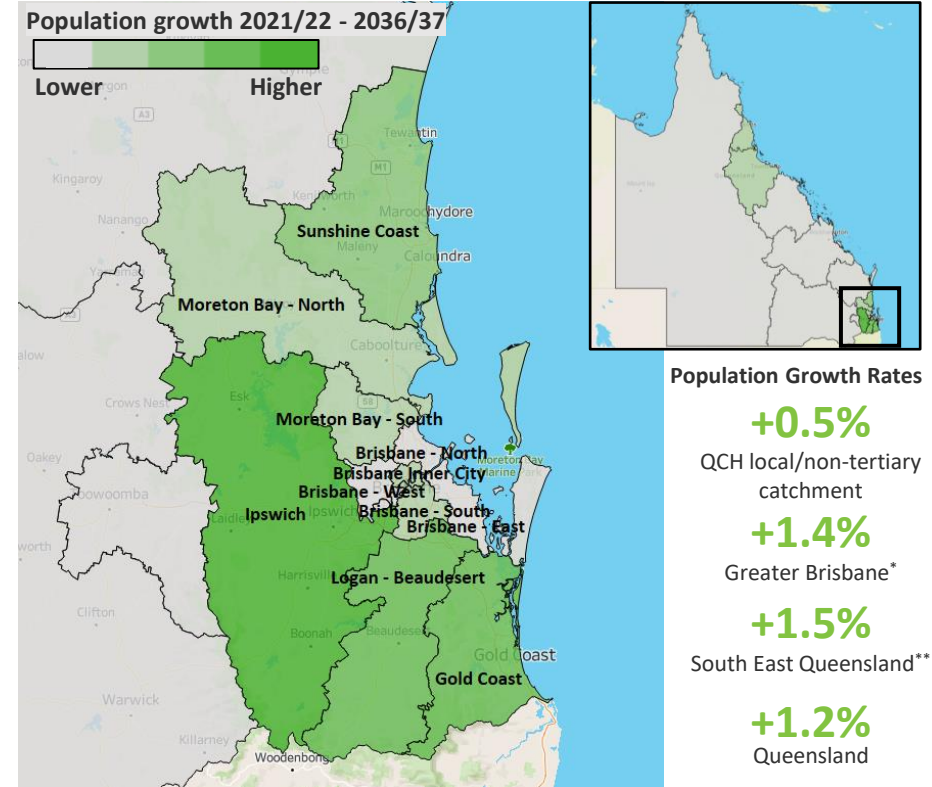
QCH's local non-tertiary catchment in inner Brisbane is relatively more socioeconomically advantaged than Queensland children as a whole (Figure 6), however a substantial number of children are living in social housing and experience vulnerability to developmental delay, both within inner Brisbane and across Queensland. As a leader in children's health services, CHQ needs to ensure our services are inclusive of these vulnerable children.

Figure 6: Social determinants of health for Queensland children



*Local/non-tertiary QCH Catchment

Figure 5: Population growth in Queensland (2021/22 – 2036/37)



Population Growth Rates

- +0.5%**
QCH local/non-tertiary catchment
- +1.4%**
Greater Brisbane*
- +1.5%**
South East Queensland**
- +1.2%**
Queensland

SA4s with the largest population growth from 2021/22-2036/37

1. Ipswich
2. Gold Coast
3. Logan - Beaudesert
4. Sunshine Coast
5. Moreton Bay – North
6. Townsville
7. Moreton Bay -South
8. Cairns
9. Brisbane - South
10. Brisbane Inner City

* Greater Brisbane includes the SA4s of Ipswich, Logan – Beaudesert, Brisbane – East, Brisbane – North, Brisbane – South, Brisbane – West, Brisbane Inner City Moreton Bay – North, and Moreton Bay – South.
** SEQ includes Greater Brisbane plus the Gold Coast and Sunshine Coast SA4s.



Strategic context informing the Master Plan

Defining the vision

CHQ strategic context and statewide reform agenda informing the Master Plan

Strategic context

This Master Plan has been informed by a range of existing strategic and operational planning documents as well as documents generated throughout the master planning process.

The Master Plan builds on the following strategies and documents:

- CHQ’s Strategic Plan 2020-2024
- Health and Wellbeing Services Plan 2018-2028
- Aboriginal and Torres Strait Islander Health and Wellbeing Plan 2018-2023
- CHQ Strategic Asset Management Plan (SAMP)
- CHQ Financial Sustainability Plan.

Strategic context and methodology

The Master Plan is an important enabling plan as part of the broader planning context within CHQ as a blueprint for the delivery of health infrastructure that will support CHQ achieving its vision for future children’s services.

Current infrastructure

Statewide reform agenda

The CHQ Master Plan also aligns with – and supports delivery of key statewide reform agendas. CHQ aims to be at the forefront of leading reform in health, and so has incorporated these directions into the Master Plan as a way of contributing to the progression towards the health system of the future in Queensland:

- Queensland Health has a statewide plan – *A great start for our children*, which outlines a vision and strategic direction for children and young people’s health services to 2026
- Queensland Health Virtual Care Strategy
- Queensland Health Non-admitted care reform strategy
- Queensland Health funding model reforms strategy
- Queensland Health System Priorities.

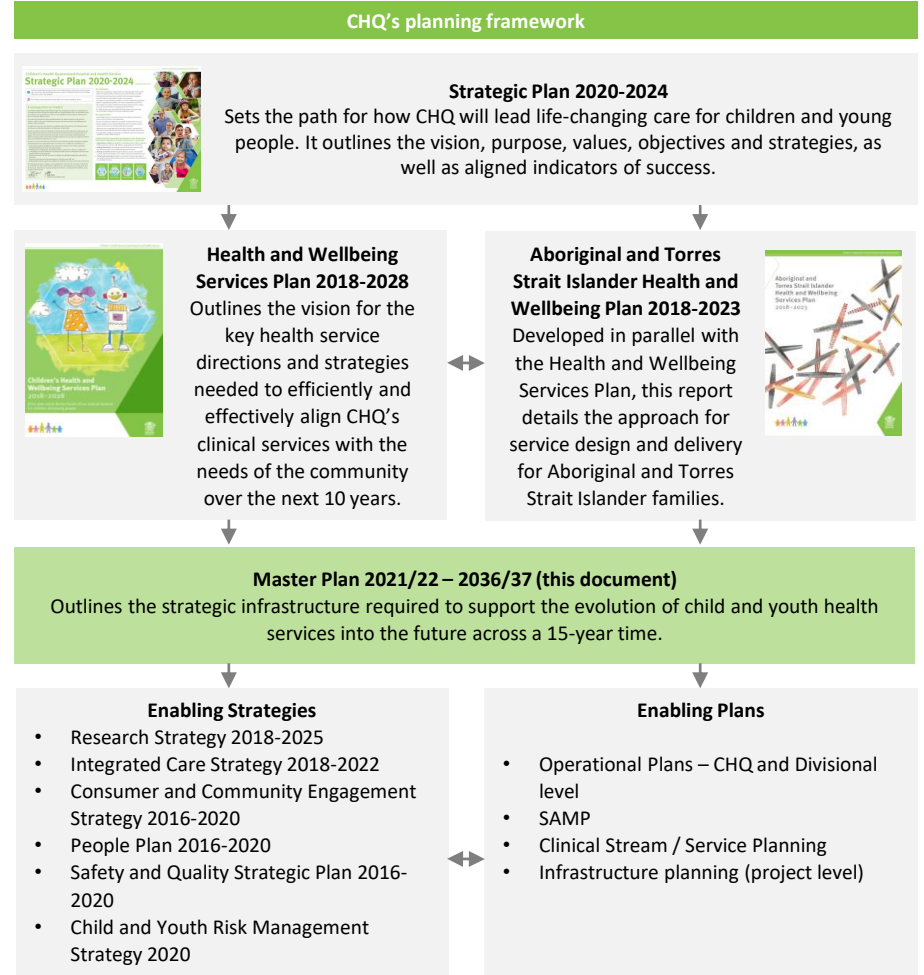
Case for change

Noting, the system level strategy has no overarching governance, reporting or implementation roadmap. There is also a lack of link to emergent commissioning approaches, such as Local Area Needs Assessment process and Statewide Services process.

Response strategies

Project roadmap

Figure 7: The Master Plan in context of existing strategies and plans.





CHQ's vision and strategy

CHQ's existing vision and service directions have been expanded on in the Master Plan through seven design principles.

How existing planning informs the Master Plan

CHQ's Strategic Plan and Health and Wellbeing Services Plan set the vision and strategic direction for CHQ's services. The Master Plan has been developed to support CHQ's vision of *leading life-changing care for children and young people – for a healthier tomorrow*. The service directions captured in the Health and Wellbeing Plan have also formed the basis for updating the activity and infrastructure projections developed as part of the Master Plan (using the latest data inputs from the Department of Health).

Statewide networked approach

A key response in this Master Plan is a sustainable network of paediatric services across the state which will require a clear statewide direction and mandate. Current statewide planning does not adequately model appropriate paediatric activity flows or clearly define system roles. The Master Plan attempts to take the first step towards a statewide plan and strategy for paediatric service flows and CHQ welcomes further work towards this outcome.

Figure 8: Master Plan design principles in the context of existing planning work.



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Master Plan methodology

Overview of the CHQ 15-year master plan approach and methodology

Methodology and approach

The Master Plan is the final component of a multi-stage master planning process. The approach and methodology is described below and in Figure 9.

Phase 1A – Current state infrastructure review

The current state review included a desktop analysis of each of CHQ’s owned assets to determine any planning constraints and opportunities to explore. This phase included the review of existing planning documents for each site, including condition assessment reports and previous infrastructure planning reports, as well as coordinated site visits primarily to CHQ’s owned facilities and a few leased facilities.

Phase 1B – Future state considerations and projections

The future state projections were developed after an extensive clinical consultation process and involved activity and infrastructure modelling for QCH and community-based services.

The output of this phase was a view of CHQ’s forward activity projections and infrastructure requirements based on current service models and known changes to service delivery including strategies to Transform, Optimise and Grow services.

Phase 1C – Future state options and recommendations

This phase developed an additional infrastructure projection for CHQ based on delivering care closer to home through a statewide network of paediatric health services. The service planning projections were used to develop infrastructure problem statements and potential solutions for consideration in the final Master Plan.

Phase 2 – Future state infrastructure options and recommendations

In this phase, six user group sessions were conducted involving more than 30 participants, along with two additional sessions with senior leaders. These user groups informed the design work and costing of the final options presented in this Master Plan.

Figure 9: Methodology, inputs and approach to developing the 15-Year Master Plan



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Stakeholder engagement

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The work presented in this chapter was supported by extensive engagement with CHQ clinicians, consumers and operational staff

Purpose of engagement

Stakeholder engagement – both internally within CHQ and with our partners – is critical to both informing the service and infrastructure options for the future; but also to gain buy-in and ownership of the outcome.

An extensive engagement process was undertaken to develop the Master Plan, to:

- Better understand the current state of CHQ's infrastructure including emerging flow and functionality issues (Phase 1A)
- Identify future service changes, emerging trends and models of care to inform adjustment of the future activity projections from the Department of Health to better reflect CHQ's paediatric service model (Phase 1B)
- Ensure consumer and family experiences inform the future delivery of services and infrastructure (Phase 1B)
- Engage with other HHSs and our external service delivery partners to discuss future services and strengthen our partnerships (Phases 1B and 1C)
- Plan for the future of CHQ's infrastructure informed by the clinical and operational experience of our staff (Phase 2 user groups).

Stakeholders consulted

A diverse range of stakeholders were consulted during development of the Master Plan, including:

- Operations managers
- Clinicians, both QCH-based and community-based (CYMHS and CYCHS)
- Consumers and carers
- CHQ Community Collaborative (an existing forum for CHQ's community service partners).



In addition to the formal, structured engagement process, a range of other sessions were held on an as-needs basis with other HHSs, Mater, and CHQ's leadership team.

The Project Steering Committee also included representation from the Department of Health (including System Planning Branch and Capital Assets Services), Metro North HHS, Metro South HHS, Townsville HHS, consumer and carer representatives, and CHQ.

Figure 10 summarises the stakeholders consulted throughout each stage of Master Plan development. A full list of stakeholder engagement meetings and attendees is available in Appendix C.

Figure 10: Stakeholder consultation throughout development of the Master Plan

Phase 1A: Current State Infrastructure Review

 Site visits were undertaken at **14 CHQ-owned community sites and QCH** (including Centre for Children's Health Research and the Foundation building) 

Phase 1B: Future State Considerations and Projections



1 Future of Health workshop with ELT and **1 Future Pathways workshop** with DDELT  **30 meetings** with QCH clinical areas with **over 50 attendees**  **1 joint workshop** held with CYCHS and CYMHS with **30 attendees**  **1.5 hour session** held with **7 consumers and carers**  **14 survey responses** from the **Community Collaborative**


 **Consultation** with the System Planning Branch to confirm modelling assumptions and methodology

Phase 1C: Future State Ops and Recommendations

 Meetings with the service planning leads at **Metro North and Metro South**  Presentation to the **Executive Directors Health Service Planning** group  Meetings with **Mackay and Townsville HHSs** to discuss future activity flows

Phase 2: Future State Infrastructure Options and Recommendations

 **6 infrastructure user groups** attended by **over 33 CHQ staff.**  **1 workshop** session with the **Executive Leadership Team** to confirm and prioritise options

Project governance and updates  **Regular meetings** were held throughout the project **with Operations Managers and the broader CHQ planning team.** **Monthly Project Steering Committee meetings** were held to guide the development of the Master Plan.

03 Current services and infrastructure



Current services and infrastructure – overview

An overview of children's health services across Queensland

Overview

This section provides an overview of the current state for services and infrastructure within CHQ. This includes detailing the operating context of paediatric services across Queensland, CHQ's current services and associated infrastructure.

Services

CHQ operates in both a statewide and local context. As such, the services overview has been split into two sections:

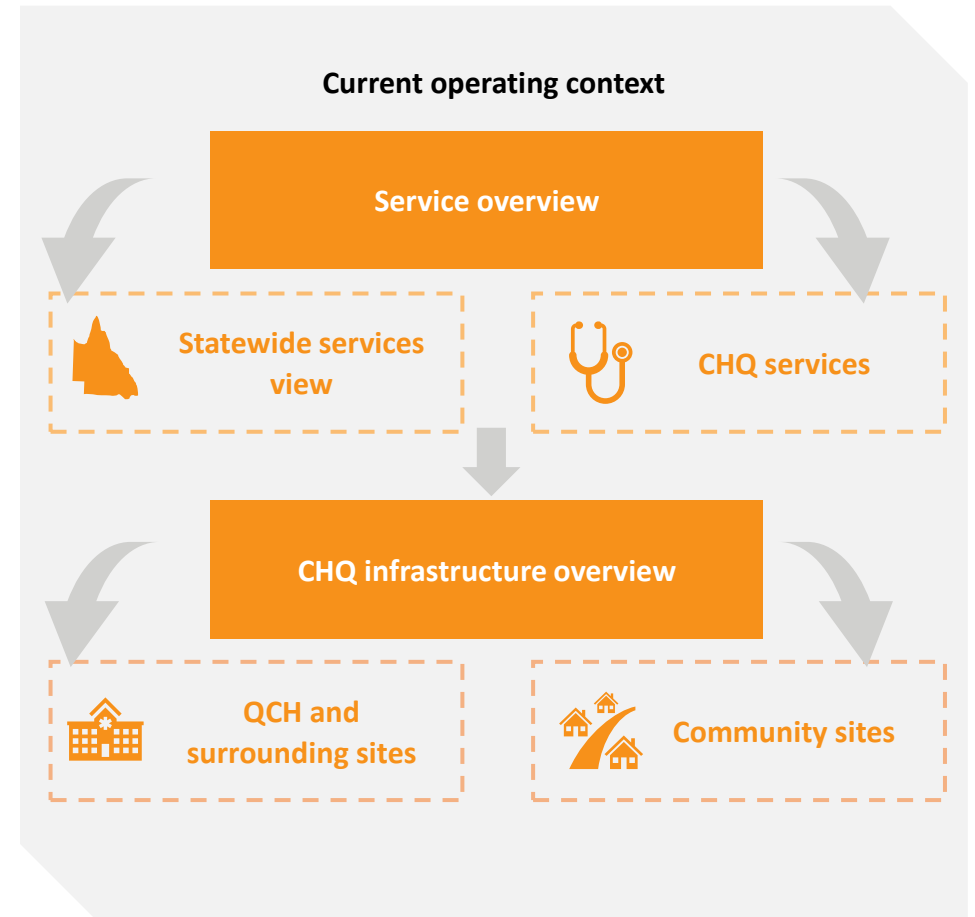
- **Statewide context** – An overview of children's health services across Queensland.
- **CHQ services** – An overview of CHQ's current role and services.

CHQ infrastructure

Similarly, CHQ's current infrastructure used to support these services have been split into the following sections:

- **QCH precinct** – The QCH precinct is located in South Brisbane and includes the QCH, the Centre for Children's Health Research (CCHR), the Foundation Building, and the Energy Plant.
- **Community sites** – CHQ provides community health and mental health services in community health centres, clinics, schools and shopping centres across the greater Brisbane area. Other sites delivering inpatient services in the community include the Ellen Barron Family Centre and Jacaranda Place.

Figure 11: Structure of current services and infrastructure overview





Current services – Statewide view

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An overview of statewide children’s health services across Queensland

Paediatric health services in Queensland

General paediatric health services are provided as a network of care by most of the sixteen HHSs across Queensland. In the north, some Clinical Service Capability Framework (CSCF) Level 5 services are provided at Cairns and Hinterland HHS, but the majority of higher level services are provided at Townsville HHS. In the south east corner, the Sunshine Coast HHS and Gold Coast HHS provide some CSCF Level 5 paediatric services, with plans for growth in capability at the Sunshine Coast HHS. CHQ provides the most complex, specialist paediatric care in the state (Level 6 CSCF), as the quaternary referral centre.

Metro North, Metro South, Cairns and Hinterland, West Moreton and Sunshine Coast HHSs all have plans to uplift their paediatric capability by 2026/27 (Figure 12). Many other HHSs have strategic planning or service planning that includes expansion or growth of self-sufficiency for local paediatric services.

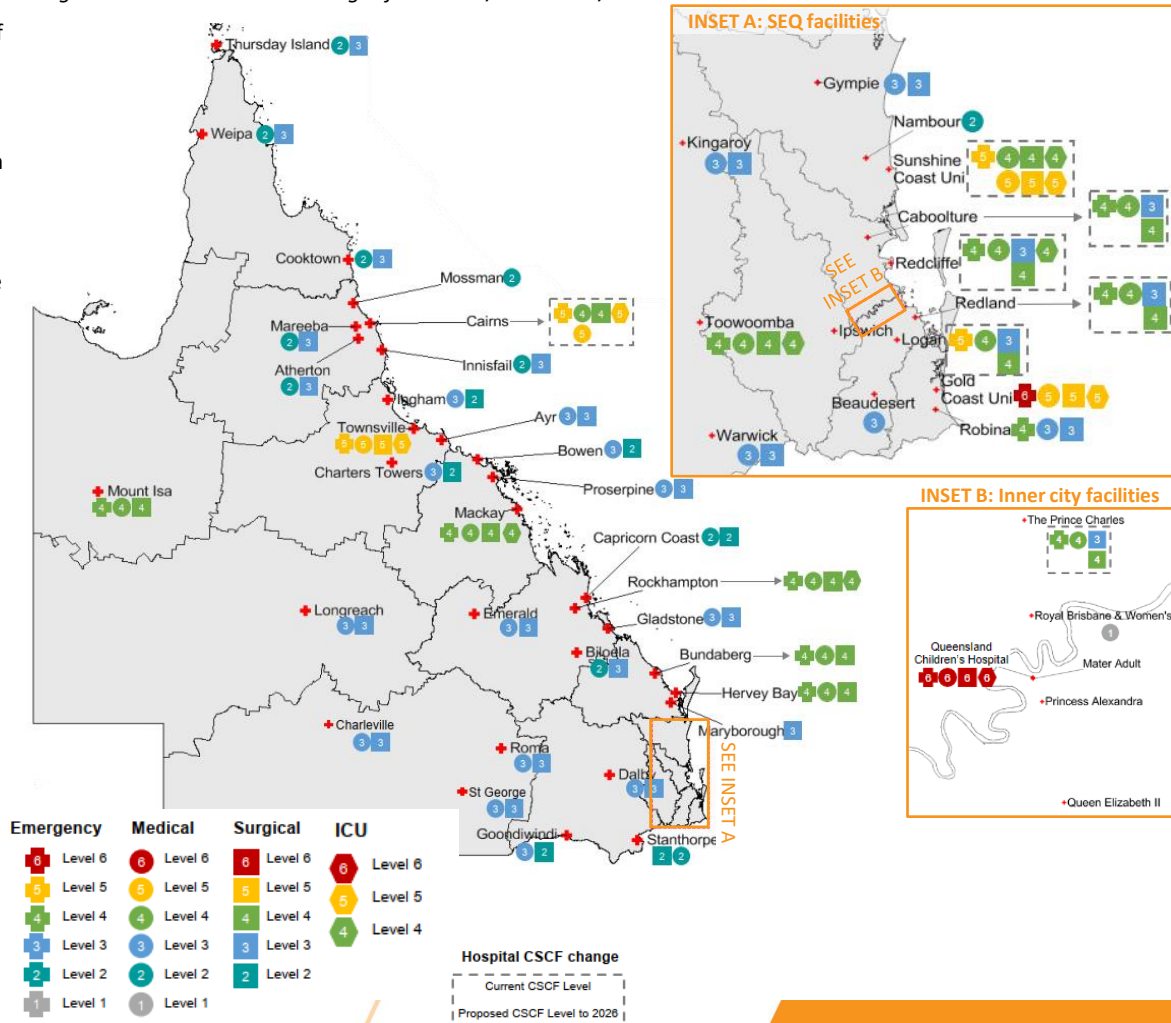
Statewide role of CHQ

In addition to providing services to a local catchment within Greater Brisbane, CHQ also plays a leadership role within the wider network for paediatric services in Queensland including:

- **Advocating for strategies to improve health and wellbeing:** CHQ has a system-wide role in population health, prevention, research and advocacy through its role as a trusted source of expert knowledge, a facilitator of partnerships, and leading paediatric health promotion and prevention.
- **Statewide system coordination** through integrated care, facilitating partnerships, building capacity and investment/commissioning.
- **Statewide service delivery** including highly specialised tertiary and quaternary services provided onsite at QCH, virtual in-reach services to support care at other HHSs and advisory services. In this role, CHQ provides leadership and direction to clinical services across the state and will be integral to HHSs building capability by providing support and education.

As outlined in Chapter 2, while there is an existing statewide level strategy in place, there is no active governance, monitoring or implementation roadmap. The statewide roles are not “mandated” or clearly defined (and agreed) in a Service Agreement and other arrangements and are not explicitly funded. Enhancing system-level commissioning will support an effective network of care (and delivery of this Master Plan).

Figure 12: Paediatric CSCF changes from 2020/21 to 2026/27.





Current services - CHQ

An overview of CHQ's current services

Services directly provided by CHQ

CHQ provides a wide range of hospital, research, education, administration and community-based services (Figure 13).

Acute hospital services (QCH)

QCH is operated by CHQ and is the only specialist children's hospital in Queensland. It is a tertiary-level teaching hospital and provides the full range of clinical services for children and adolescents.

The hospital provides care to the state's sickest and most critically injured children who require highly specialised care. QCH is also the local children's hospital for families who live in the inner Brisbane catchment area.

Research and education

CHQ's dedicated research infrastructure is located at the CCHR. The facility leverages partnerships between CHQ, the UQ and the Queensland University of Technology (QUT) and works in collaboration with the Translational Research Institute.

The facility is located in the QCH precinct and is Queensland's first fully-integrated research facility focused on child and adolescent health research.

CHQ is the primary provider of paediatric training and education for healthcare professionals in Queensland. Medical, nursing and allied health education is supported at CHQ with extensive, co-ordinated programs with the necessary accreditation.

Corporate Services

Most administration and corporate services are housed within the QCH precinct or located in close proximity in South Brisbane. This includes at CCHR and in additional office space leased at Grey Street and Russel Street which are within walking distance of the QCH precinct.

Community Health services (CYCHS and CYMHS)

CHQ provides community health and mental health services for children, young people and their families in community health centres, clinics, schools and shopping centres across the greater Brisbane area.

See over page for a detailed overview of the range of community services provided by CHQ.

Figure 13: CHQ's current services

Queensland Children's Hospital & surrounding site	Community sites	
Acute hospital services	Child and Youth Community Health Services	Child and Youth Mental Health Services
QCH	Child Health Service	Hospital-based Services
Centre for Children's Health Research	Child Development Program	Day Programs
Education across Medical, Nursing and Allied Health	Healthy Hearing Program	Community Clinics
Queensland Paediatric Emergency Care Education	Ellen Barron Family Centre	Zero to Four
Corporate Services	Centre for Children's Health and Wellbeing	Evolve Therapeutic Services
	Deadly Ears	Eating disorders clinic and day programs
	Primary School Nurse Health Readiness Program	Assertive Mobile Youth Outreach Service
	School-based Youth Health Service	Programs and Partnerships
	Family and Community Place (Yarrabilba)	Forensic Teams
	Navigate Your Health	Telepsychiatry
	Community Access	
	Bookings Service	
	Hearing Loss Family Support Service	
	Good Start Program	

Key:

- Services provided using the QCH hospital precinct
- Services provided wholly or partly using CHQ-owned infrastructure
- Services without CHQ-owned infrastructure
- Specialty Teams with a mixture of CHQ-owned infrastructure and leased infrastructure



Current services - CHQ

An overview of CHQ's current services

Community Health services (CYCHS and CYMHS) (cont.)

CHQ provides services in the community through the CYCHS and CYMHS divisions. A brief overview of the services provided by each division is given in the following section.

Child and Youth Community Health Services

CHQ's community services link multidisciplinary teams that consist of child and youth health nurses, Aboriginal and Torres Strait Islander and multicultural health workers, early intervention clinicians, doctors, allied health and other professional staff.

Services are provided at the following sites:

- **Ellen Barron Family Centre** – The Ellen Barron Family Centre provides education and support to enable families to develop practical skills and confidence in parenting. The service offers several inpatient programs for families with children aged zero to three years and services families in Queensland, northern New South Wales and the Northern Territory.
- **Child Health** – The Child Health Service provides prevention and early intervention services for children aged from birth to eight years and their families. This service operates from 33 locations across the greater Brisbane area in Child Health Clinics and community centres. Additionally, the services can be provided in the home.
- **Child Development** – The Child Development Program works with families, communities and professionals throughout the Greater Brisbane area to improve the health and well-being of children and young people experiencing developmental concerns. This service operates from 12 locations including a specialist outpatient clinic at the QCH for children with rare developmental conditions.
- **Healthy Hearing Program** – The Queensland Healthy Hearing Program offers free newborn hearing screening to all babies born in Queensland hospitals, including both public and private facilities. The program supports the pathway from screening to diagnosis, and early intervention. Children's Health Queensland Healthy Hearing sets the overall direction, monitoring, reporting, education and service development in relation to infant hearing loss detection.
- **Other programs and services** – Centre for Children's Health and Wellbeing, Deadly Ears, Good Start Program, Primary School Nurse Health Readiness Program, School-based Youth Health Service and the Navigate Your Health Community Access and Booking Service

Child and Youth Mental Health Services

The CYMHS helps children and young people up to the age of 18 and their families who have complex mental health needs. The service targets conditions that impact development, close relationships, activities, education or work. Common conditions include anxiety, depression, attachment-relationships, eating disorders, school refusal, psychosis, suicidal and self-harming behaviours and trauma.

CYMHS provides inpatient services at QCH as well as the following community-based services:

- **Community services** – Non-admitted CYMHS services are primarily provided using community-based infrastructure at a number of locations servicing suburbs across Greater Brisbane.
- **Jacaranda Place** – Jacaranda Place is a purpose-built subacute adolescent extended treatment centre. The program includes a 12-bed residential service and a 10-place Day Program delivered in partnership with the Department of Education to provide an integrated education and mental health treatment service. The program at Jacaranda Place has a statewide catchment.

Other Statewide Healthcare Services

- **CATCH** – CHQ has successfully implemented the Children's Advice and Transport Coordination Hub (CATCH) as a 24 hour / 7 days a week statewide service that coordinates access to life-changing care for children and families in northern New South Wales and all of Queensland. The CATCH service offers a system-level networked solution, delivering and facilitating quality and safe care, in the right place, at the right time to children and young people across Queensland. The service has enabled access to a paediatric specialist services across Queensland to address planned and unplanned care.
- **Project ECHO** – CHQ has established a guided practice model that exponentially increases access to best-practice care and reduces health disparities, through hub-and-spoke knowledge sharing networks, or communities of practice. Online, interactive case discussions provide a platform for collaborative learning by primary, secondary and tertiary care providers and other human service professionals (including those in education, child safety, disability services, police and many others), to empower providers to practice at the top of their scope.



Current infrastructure – Overview

An overview of CHQ's current infrastructure

Summary



18 owned sites
across Greater
Brisbane



7,964 m² of
commercially
leased space



74% of infrastructure
is neither leased nor
owned by CHQ



333 beds at
QCH

Table 1 shows CHQ's infrastructure locations and indicates the number of owned, leased or other arrangement types. The infrastructure summary on the following pages is of the owned sites visited as part of Phase 1A. A more detailed current state infrastructure view is available in Appendix A.

Owned sites

CHQ delivers services from 17 owned sites (Ferny Hills is currently vacant) throughout Greater Brisbane. As a part of the current state review, site visits were undertaken at all CHQ owned sites and three leased sites which were proximal to owned sites. This included a mix of CYCHS and CYMHS sites across Greater Brisbane and the QCH and surrounding sites in South Brisbane.

Commercially leased sites

The review identified that CHQ occupies up to 7,964 m² of leased space and that approximately 11 percent of CHQ sites are commercially leased. Leased spaces are used for a mix of clinical service and non-clinical support services, with those sites used for clinical service delivery used by CYCHS and CYMHS.

Other sites

Sites used by CHQ (neither leased nor owned) under agreements with other government agencies or service delivery partners make up the majority of CHQ's non-hospital infrastructure – 74 percent of the total number of sites utilised by CHQ. Many programs are delivered partly or wholly using infrastructure that is neither commercially leased nor owned (such as utilising space in Community Health Centres or similar, that are owned and operated by other HHSs). Such a high proportion of non-leased or non-owned sites is atypical of HHSs across the State and presents a level of risk of certainty of access and use to CHQ. A full list of sites accessed via non-commercial leasing agreements is provided in Appendix A.

Table 1: CHQ's owned and leased sites.

Infrastructure type	Infrastructure for admitted services	Community infrastructure	Office space
Owned infrastructure	<ul style="list-style-type: none"> • QCH • Energy Plant • CCHR** • Foundation Building • Ellen Barron Family Centre • Jacaranda Place 	<ul style="list-style-type: none"> • 5 CYCHS Centres • 1 Newborn Hearing Screening Program and Healthy Hearing Program Centre • 1 Family Therapy and Eating Disorders Service Centre • 3 CYMHS Centres • 1 Evolve Therapeutic Service Centre • 1 vacant building (Ferny Hills) 	<ul style="list-style-type: none"> • QCH • CCHR**
Leased infrastructure		<ul style="list-style-type: none"> • 7 CYCHS centres • 3 CYMHS centres 	Additional administrative services space: <ul style="list-style-type: none"> • Grey Street • Russell Street
Other infrastructure		<ul style="list-style-type: none"> • 67 non-leased and non-owned sites* 	

**Partially-owned



Current infrastructure – QCH precinct

An overview of CHQs current infrastructure within the QCH precinct

Summary



The precinct is part of a shared **Community Facilities Zone**



4 owned buildings within the precinct



2 leased sites within walking distance of the precinct



333 total beds

QCH precinct overview

The QCH precinct includes the QCH, the CCHR, the Foundation Building and the Energy Plant (Figure 14). CHQ owns these four buildings.

Most administration and corporate services are housed within the QCH and the CCHR although there is overflow office space leased at Grey Street and Russel Street which are within walking distance of the QCH precinct.

Part of the precinct, the QCH and the CCHR, are located within a 14.2 hectare Community Facilities Zone in South Brisbane which also includes the Mater campus in South Brisbane (public and private hospital facilities), as well as consulting rooms for private providers, and Ronald McDonald House.

The precinct is close to Sommerville House and St Laurence’s College as well as the South Bank Cultural Precinct. In addition to this, the site is in proximity to the M3 Riverside Expressway and two primary arterial roads connecting West End to Woollongabba.

According to a Car Park Study commissioned by Queensland Health and undertaken by Destravis in 2017, parking is constrained and the precinct experiences periods of full capacity and that an ongoing increase in the demand for parking is expected. The primary parking operator in the QCH precinct is Mater Health Services. The capacity review identified 4,129 spaces available on the QCH precinct. Of these 3,434 spaces were for patients visitors and staff, 462 were dedicated staff carparks, and 248 were restricted to patients.

An additional 2,450 spaces of off precinct parking are also available at local parking structures including Princess Parking, Secure Vulture Street, Secure South Point, South Bank Parklands and the Brisbane Convention Exhibition Centre. 1,293 spaces of street parking are also available though spaces are limited and significantly time restricted.

Figure 14: QCH precinct



- Key**
- Foundation Building
 - QCH
 - CCHR
 - Energy Plant



Current infrastructure – QCH precinct

An overview of CHQs current infrastructure within the QCH precinct



Site overview

- The QCH is a CHQ-owned site located in South Brisbane which provides specialist hospital services to children and young people across Queensland and northern New South Wales. QCH is also the local children's hospital for families who live in the inner Brisbane catchment area.
- The building provides over 110,000m² of accommodation across 12 clinical levels and four basement levels. QCH currently has a physical capacity of 261 overnight beds (including 36 PICU beds and 20 mental health beds), 56 same day beds, and 16 subacute beds (333 total beds). The Emergency Department has 18 short stay unit beds. 17 bed alternatives are utilised for procedures (chemotherapy and dialysis).

Building conditions

- QCH is seven years old and appears to be generally in good condition although the Condition Assessment report (2020) identified moderate maintenance needs.

Access

- The Emergency drop-off and ambulance entry are from Stanley Street on level one while the primary visitor drop-off is from Raymond Terrace on level two.
- Due to the inner-city location and neighbouring school, access roads are often congested.
- The site is serviced by three public carparks in South Brisbane. Parking is also available at the Mater Medical Centre carpark. There is no capacity for additional car parking on site. The site is further serviced by the Mater Hill bus station and the South Bank train station and ferry stop. Car parking / access is an ongoing concern for consumers.

Clinical service suitability and emerging issues

- **Emergency Department:** The Emergency Department (ED) layout is inefficient with areas of underutilisation, poor adjacencies and poor visibility. The emergency drop-off is compromised by a lack of signage resulting in difficulties for families finding the ED.
- **Outpatients:** Each outpatient department has its own entry and waiting room separated from other departments by large voids or paths. This inefficient use of space results in a mismatch between service volumes and physical capacity where some areas are overcapacity and other areas are underutilised. Many outpatient departments have rooms that cannot be used due to their irregular shape. There is also limited space for staff handover or multi-disciplinary consultations.

- **Pharmacy:** The pharmacy is undersize and does not have a pharmacy robot or space within its current footprint to add one.
- **Retrievals:** The store and preparation room is inappropriately located directly adjacent to the quiet suite for families of children who have passed or are at end of life.
- **Voids and atriums:** There are safety and acoustic considerations in travel areas.
- **External play areas:** There is a lack of easily accessible external play areas for children.
- **Wayfinding:** Internal wayfinding throughout the hospital is unclear. Staff indicated that patients and families often get lost within the building causing distress and delays.
- **Storage:** There is a significant lack of storage throughout the hospital driven by the originally designed 'just-in-time' logistics model. Subsequent changes to the ordering system and additional storage quantity requirements due to COVID-19 have put significant storage pressures on the site.
- **Car parking:** The QCH experiences periods of full capacity and an ongoing increase in demand for parking.

Figure 15: QCH





Current infrastructure – QCH precinct

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An overview of CHQs current infrastructure within the QCH precinct



CCHR

Site overview

- The CCHR is a CHQ-owned site which was opened in 2015 and accommodates 400 researchers from QUT, UQ and CHQ; as well as a large number of non-clinical CHQ services staff. CHQ has several major multidisciplinary research programs located within the building. Additional space is occupied by a number of research centres specialising in children's health research.



Building condition

- The CCHR is five years old and appears to be in good condition. The condition assessment conducted in 2020 identified the need to replace parts in some air-conditioning units.

Access

- CCHR is multi-storey building located to the south of QCH on the opposite side of Raymond Terrace. It is connected to QCH by an underground link.
- Due to the inner-city location and neighbouring school, access roads are often congested.
- The QCH precinct site is serviced by three public carparks in South Brisbane. Parking is also available at the Mater Medical Centre carpark. There is no capacity for additional car parking on site. The site is further serviced by the Mater Hill bus station and the South Bank train station and ferry stop. Car parking / access is an ongoing concern for consumers.

Clinical service suitability and emerging issues

- The facility is well suited to the research currently being undertaken.
- The site is heavily constrained and has little ability to accommodate further expansion. The spaces within the building are largely leased to various research organisations with two partners having contributed to the capital build and are committed to a long term presence in the building. This leaves little to no opportunity to relocate administrative or outpatient services from QCH to facilitate higher acuity expansion in the medium to long term. Three floors of commercial accommodation are being leased at 199 Grey Street to provide proximity to QCH for some teams.



The Foundation Building

Site overview

- The Foundation Building is a CHQ-owned site that was built in 1921 and originally housed the Bank of NSW. In 2010 an adaptive reuse project was undertaken for the staff and volunteers of the Queensland Children's Hospital Foundation. The building currently has been repurposed for use by CHQ teams and as an innovation and imagination space.
- The Foundation Building is located less than 100 metres from CHQ, on the opposite side of Stanley Street, and sits to the north of the broader hospital precinct. On the ground floor, space for 22 workstations is provided, with four workstations in reception and storage areas. The first floor accommodates, a mix of small offices, meeting rooms and staff amenities. Three car parks are provided on the site.



Building Conditions

- The building is generally in good condition. The Condition Assessment conducted in 2020 identified the need to replace the two air-conditioning chiller units, replace the roofing and guttering and repair / replace the existing rock wall in the carpark.

Access

- Building and parking is accessed from Stanley Street, directly opposite QCH. Traffic lights on Stanley Street (50 metres from the building) provides direct pedestrian connection to QCH.

Clinical service suitability and emerging issues

- While the building is ideally located, in close proximity to QCH, the access requires crossing the busy Stanley Street. Occupation is further limited by the size of the space available on the ground floor and the inability to remove the internal walls on the upper level. The heritage listing also impedes the use of this space for clinical purposes, specifically treating patients.



Current infrastructure – QCH precinct

An overview of CHQs current infrastructure within the QCH precinct



Grey Street Site Profile

Site overview

- The leased site currently accommodates clinical and non-clinical staff for the CYMHS and CYCHS.

Building conditions

- The building was completed in 2007 and a lobby refurbishment was undertaken in 2019-2020. The building appears to be in good condition. CHQ inherited the fit out which is dated and does not maximise accommodation; however appears to be in a reasonable condition.



Access

- The site is located within a seven to nine minute walk from QCH to the north west of the hospital precinct. The building is accessible by car via Grey Street with loading bays and visitor parking access from Tribune Street. The building has parking for approximately 160 vehicles, and the site is surrounded by public car parks and multiple public transport opportunities.

Clinical service suitability and emerging issues

- The fit out utilises furniture from a previous tenant and has not been adapted for CHQ. Desks are oversized and the layout provides little opportunity for group work and collaboration due to the high storage units dividing the spaces.
- The current fit out does not provide sufficient audio-visual hardware in meeting rooms and offices.
- There is a shortage of meetings rooms for the number of staff, leading to staff conducting private conversations, meetings and consultations from their desks.
- Most teams require spaces with high acoustic performance due to the sensitive nature of material discussed and patient confidentiality. A number of meeting spaces within the building offer no visual or acoustic privacy and are unsuitable for telehealth.
- Parking in the surrounding area is restricted and can be expensive.
- Distance from QCH is an issue for services that need to visit the hospital regularly.



Energy plant

Site overview

- The Energy Plant is a CHQ-owned site that provides plant functions (energy redundancy, engineering, chillers) to the QCH and CCHR sites.
- It is located 100 metres from QCH and is at the back of the CCHR building.

Suitability and emerging issues

- The Energy Plant building is seven years old and appears to be in good condition. The condition assessment conducted in 2020 identified the need to install a territory booster pump for air-conditioning
- No emerging issues with the Energy Plant were identified.





Current infrastructure – community sites

An overview of CHQ's community sites

Summary



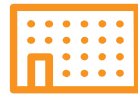
Sites are located across **Greater Brisbane**



14 CHQ-owned buildings



10 Leased sites



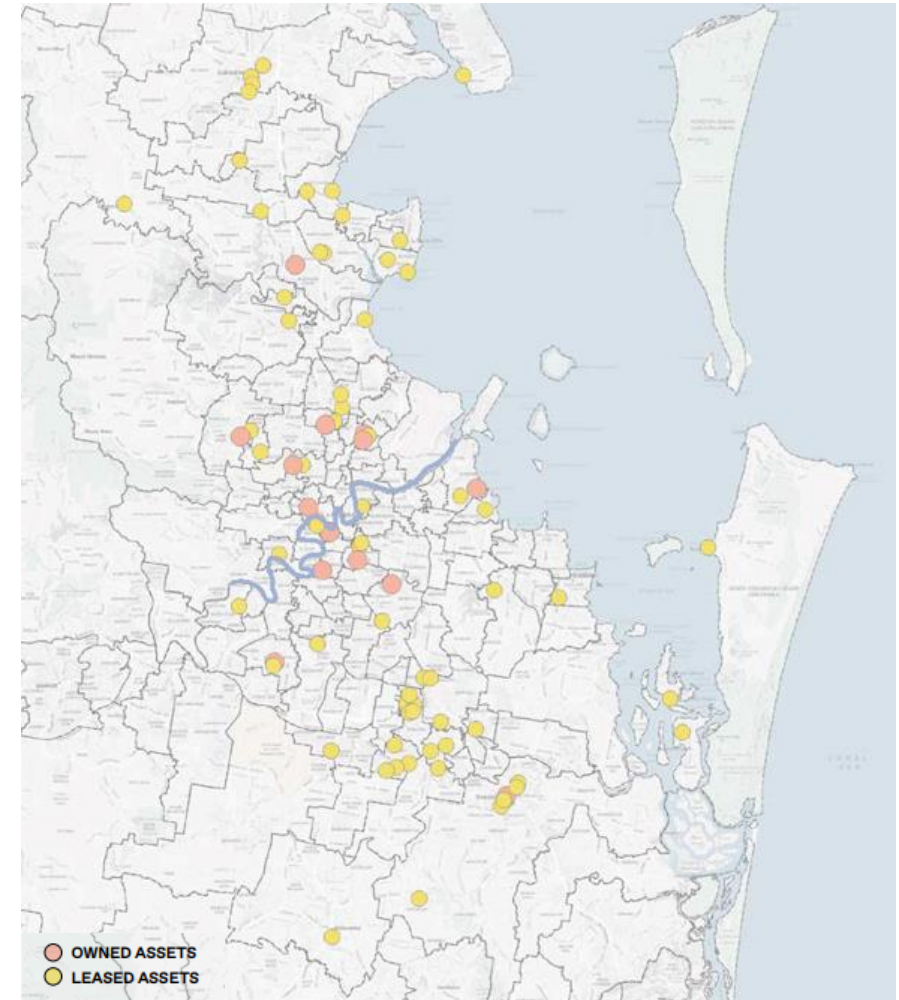
67 non-leased/partnership sites

Community sites overview

A number of consistent themes were identified from the current state infrastructure review for the CHQ-owned community sites.

- **Site characteristics:** The majority of community sites tended to be previously residential type houses converted to clinics, with each building providing about 80–270 sqm of accommodation. Notably, the Paddington Child Health centre was donated and opened in 1952 as a memorial to Edward 'Ned' Hanlon who played an important role in the provision of health services in Queensland. Historical and heritage overlays are an important consideration when planning the future allocation of CHQ's infrastructure profile.
- **Zoning:** The zoning of community sites limits the amount of development or redevelopment that can be undertaken, with most sites zoned as housing, and some with Dwelling House Character or Traditional Building Character.
- **Access:** Car parking for most sites is limited which presents access difficulties for parents with young children. Sites are mostly located near public transport.
- **Building conditions:** Facilities are generally in reasonable condition, although worn and dated with various sites having items identified for repair through the Condition Assessment Reports. Many sites have identified disability access and safety compliance issues.
- **Clinical service suitability and emerging issues:** The majority of facilities are not purpose-built for providing clinical services and the layouts and acoustics do not provide functionality or privacy required to optimally deliver services.

Figure 16: CHQ's community sites





Current infrastructure – community sites

An overview of CHQs community sites

Clinical service suitability and emerging issues (cont.)

- Site locations are generally close to amenities (such as shopping centre and schools) which is preferable for service delivery.
- Some sites are underutilised (opening around one to three days a week) due to the lack of available space to locate entire teams permanently and limited labour resources to increase hours. In contrast, other sites identified emerging capacity issues, especially those in growing areas or providing in-demand services.
- For many of the CYCHS sites visited, staff were primarily located at a leased facility within the catchment and attended the site for set consult or opening times. In addition to the issues with clinical functionality, these sites are also not used by staff for office space due to limited workstations and limited parking.
- Several sites identified a lack of indoor space for conducting group therapy sessions as an emerging issue. Some have put in place alternative arrangements with surrounding facilities (such as using a library or nearby leased accommodation).

Ellen Barron Family Centre

- **Site characteristics:** The Ellen Barron Family Centre is a CHQ owned building located on The Prince Charles Hospital (TPCH) campus owned by Metro North HHS.
- **Access:** The centre is easily accessible by car however there is limited on-site parking. Due to the statewide nature of the service not all families are within driving distance of the site and many access the facility via the airport. The site is well-served by public transport (buses). The building is accessible however the split nature of the building means ramp access is required between the two levels.
- **Building Condition:** The building is in generally good condition, however outdoor areas and equipment are worn and unshaded resulting in lack of use. Indoor lounge areas are also underutilised.



Clinical service suitability and emerging issues

- Families being treated at the Ellen Barron Family Centre facility are in residence for up to 10 days and are often dislocated from their homes and support networks and may not have access to a vehicle.

- Alternative service delivery models that provide support to families in the home or in the community may provide a more family-centred approach that is less disruptive to parents' jobs and more accessible for families most in need of the service. This could facilitate further growth and uptake but may result in different infrastructure requirements.

Jacaranda Place

- **Site characteristics** – The building is owned by CHQ and is located on The Prince Charles Hospital campus (owned by Metro North HHS). Jacaranda Place is located on the eastern edge of The Prince Charles Hospital site with inpatient rooms facing east overlooking a residential area. The building provides approximately 2,850 m² of internal clinical space and 1,870 m² of external space over a single level.
- **Access** – It is easily accessible by car and ample parking is provided on site (58 car parks for staff and visitors). A pick up and drop-off area is accessible from Farnell Street.
- **Building condition** – The building is less than two years old and is in excellent condition.



Clinical service suitability and emerging issues

- The acoustic properties of rooms could be improved across the facility. Clinical spaces do provide sufficient separation to conduct appointments with appropriate privacy.
- The facility is an exemplar for the future delivery of mental health services. The current location and facility is ideal for the delivery of inpatient and day program services and provides patients with a comforting, residential environment for treatment and learning during their stay.
- The facility provides extensive break-out, education and lounge spaces arranged around several courtyards in the centre which are lush and generously proportioned.
- Clinical areas, consult rooms and staff spaces are integrated throughout the facility with the main staff wing located to the west of the building. This approach provides opportunities for impromptu conversations and for casual staff and patient interaction throughout the day but also space for staff to retreat and work collaboratively.

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04 Case for change



Case for change overview

Defining the vision

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Based on the current state findings, the case for change is centred around three themes described below and in this section.

Case for change

The current state findings – based on the extensive analytical and consultation work undertaken – can be organised into three key themes that define the case for change for CHQ. These themes have informed the development of the service and infrastructure responses in this Master Plan.

The three themes identified are:

1. **Contemporary and evolving service models** for children’s health services require different infrastructure, including digital responses.
2. **Increasing demand for CHQ’s services** over the next 15 years will create infrastructure capacity gaps, increasing the need for new service models and technology solutions (as well as physical infrastructure).
3. There are several **functionality and performance** issues with CHQ’s current infrastructure.

Details of the infrastructure problem statements and the benefits of addressing each problem are detailed in this section of the Master Plan.

Each stage of the Master Plan development informed these statements as follows:

- **Current State infrastructure review and site visits** – identified flow and functionality issues at QCH and at community sites, which are ageing and do not support contemporary models of care. The detailed Current State Infrastructure Review report is available in Appendix A.
- **‘Status Quo’ (adjusted baseline) projections** – service planning stakeholder consultation identified key issues including existing infrastructure pressures across CHQ (especially at community sites that lack capacity, outpatient clinic spaces at QCH and the ED), increasing acuity and complexity of children who require hospitalisation, and service model trends focussing on keeping children out of hospital, same day service models, and a shift to ambulatory care. A detailed report outlining the service planning work is available in Appendix B.
- **‘Networked Approach’ (scenario) projections** – based on further consultation, scenario modelling applied planned changes to activity flows associated with paediatric capability uplift at Metro North, Metro South, West Moreton and Sunshine Coast HHSs. The adjusted baseline projections provide a minimum estimate of the additional capacity required at QCH. Details of the scenario modelling are available in Appendix C.

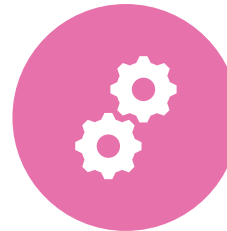
Figure 17: Themes defining the case for change.



Contemporary and evolving service models.



Increasing demand and infrastructure capacity caps.



Functionality and performance issues with current infrastructure.



Changing service models – clinical facing services

Extensive clinical engagement across QCH and community-based services identified emerging trends in child health and paediatric service delivery that will continue over the next 15 years.

Engagement with CHQ's clinicians identified several emerging trends in paediatric service delivery for two different cohorts of children:

- (1) Children who are better treated in ambulatory care-type settings either in hospital, in the community, or at home. These children may be beneficiaries of new treatments which increase their function (e.g. new drugs and treatments for cystic fibrosis) or new models of care.
- (2) Children with increasingly complex medical needs who require extensive medical intervention and ongoing tertiary-level care. These children often have multiple comorbid conditions and may require lifelong care.

The anticipated changes to service models for each of these cohorts is outlined below.

Changing service models and treatments for children with health conditions that can be managed outside of tertiary care settings

There has been an increased focus in paediatrics on keeping children out of hospital. This increases the ability of children to participate in schooling and their communities, and allows children who require healthcare to have experiences that are important for their development.

As a result of this focus, there has been a shift towards **models of care that rely less on acute hospital infrastructure** including:

- Fewer overnight admissions and more same day admissions
- Increased use of ambulatory care models for amenable conditions
- More care delivered in the community
- Growth in Hospital in The Home (HiTH) and home-based care.

Over the next 15 years, this shift away from hospital-based care is expected to continue and shift infrastructure requirements from acute hospital beds to same day wards, outpatient spaces, and community-based infrastructure.

Technology is also a key enabler of change. Growth in virtual care models has been accelerated by the COVID-19 pandemic response. In particular, the pandemic has demonstrated the benefits of telehealth for specialist outpatient appointments and virtual hospital models for remote monitoring of patients who would otherwise require a physical hospital bed. Over the next 15 years, these technology-enabled models of care will continue to grow in scope and volume, with investment in ICT infrastructure important to support these models.

Increasing acuity and complexity for children that require tertiary care

For the second cohort, increased survivorship of neonates and children with severe illnesses is increasing the complexity of the consumers CHQ treats both in hospital and in the community. Clinicians anticipate this trend will continue.

This will have a countervailing impact on average length of stay (ALOS) when compared to the shifts described for the first cohort of children. The need for hospitalisation for children with complex multimorbidity is expected to increase ALOS, especially at tertiary/quaternary facilities like QCH.

Increasing acuity for this cohort also means there is a greater need for CHQ to support other HHSs to treat children in their local community and manage flows to QCH. A better functioning hub and spoke model will enable QCH to provide higher acuity and/or novel interventions and 'step down' children to their local hospital service, and increase the delivery of paediatric care closer to home.

CHQ currently provides numerous statewide and paediatric advisory services and supports the care of children, especially children with complex healthcare needs, across Queensland. This will continue – with demands likely to increase on tertiary and advisory services, both from other HHSs, as well as through regulatory changes (in areas such as Child Protection) – particularly as the shift to a more sustainable statewide network of paediatric services progresses.

Appropriate care in the appropriate place

For both cohorts, clinicians expect that the evolution of service models over the next 15 years will place a greater emphasis on providing appropriate care in the appropriate place whether that is at home, in the community or an acute hospital setting.

A focus on same day admissions, ambulatory care, community-based and home-based care models will ensure the availability of tertiary hospital capacity to manage the complex needs of children who will require ongoing, higher complexity hospital care.

CHQ also sees a role for tertiary services in managing children closer to home in partnership with a child's home HHS. Over the next 15 years, CHQ will seek to strengthen existing partnerships through increased virtual monitoring, remote clinical supervision models of care for appropriate patients and increased clinical support from QCH to local clinicians across Queensland. This will reduce the growth in demand for beds at QCH, but will have a service impact and require new, improved digital infrastructure.



Changing service models – non-clinical facing services

The COVID-19 pandemic has amplified the future work trends, particularly for non-clinical facing roles.

Shift in working models due to COVID-19 pandemic

Traditional work models are being reviewed throughout the COVID-19 pandemic, which has amplified the rate of change to work models, challenging orthodoxies around workforce capability, configuration and flexibility. The focus has shifted to a more human approach to work by providing richness of choice, flexibility, and autonomy around when and where work is completed.

CHQ consultation identified that during the pandemic clinical staff have delivered more by telehealth and non-consumer facing time (e.g. clinical notes and administrative tasks) have been performed outside of a traditional clinical environment – from home or from alternative CHQ sites. For non-clinical staff, there has also been a shift with many staff choosing to work from home several days per week.

Flexible work arrangements, however are only the start. The practices and philosophy surrounding how work is done and how work fits into a broader life has shifted, accelerated by the pandemic response. The most sophisticated work models have rapidly progressed from flexible work arrangements such as job sharing, compressed working weeks, flexible schedules and remote work, into arrangements that emphasise complete trust and empowerment of employees. As outlined in Figures 18 and 19, Deloitte research and trend analysis has identified four key scenarios for future work models, aligned to the extent to which organisations provide flexibility around ‘When and Where’ and ‘How and What’ of work.

Figure 18: Future work model considerations

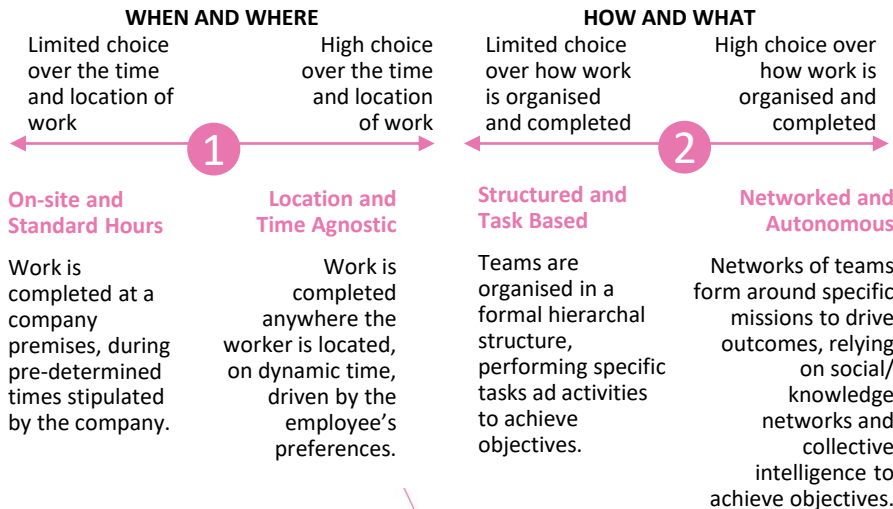
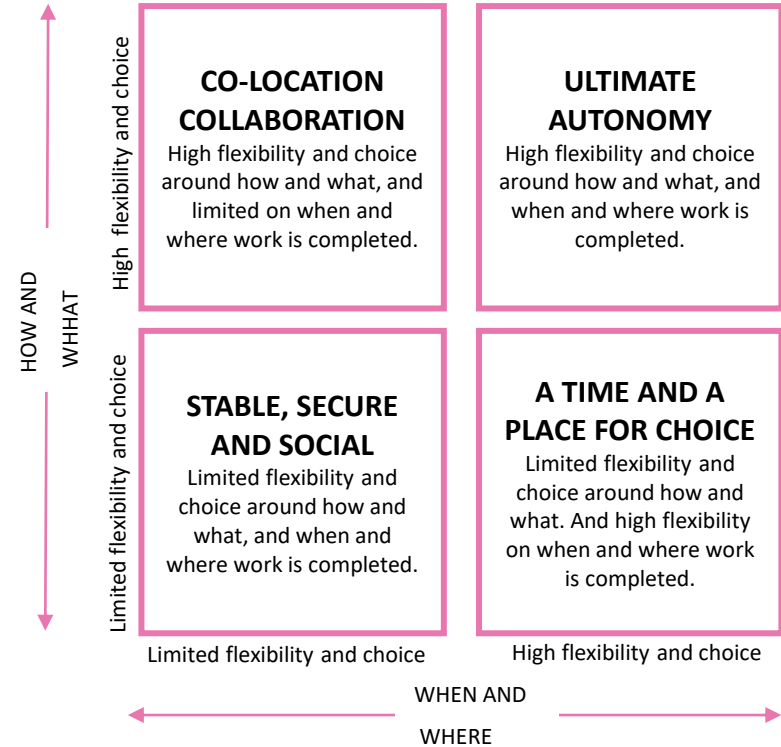


Figure 19: Future work model scenarios





Infrastructure functionality and performance

Improvements to the flow and functionality of existing infrastructure will enable CHQ's vision for future children's health services.

Existing infrastructure is under pressure

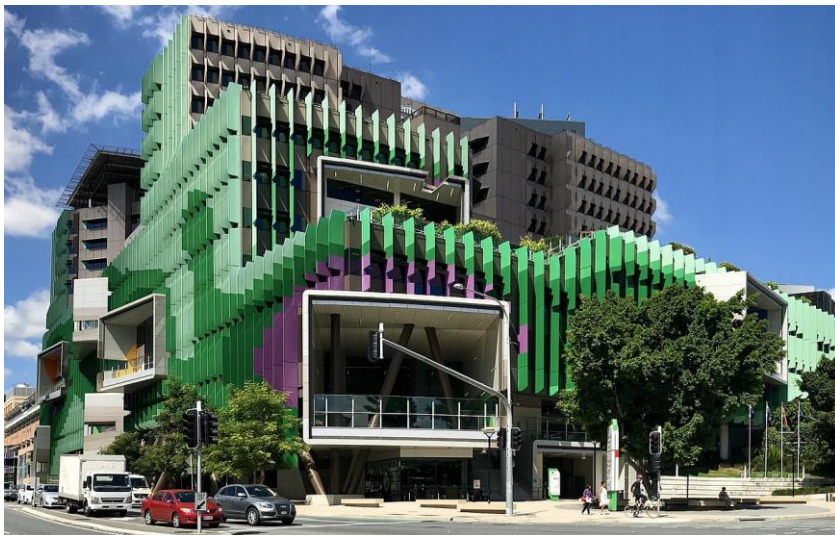
CHQ's current infrastructure is already under pressure. Space to grow services is limited on the QCH precinct and at community sites, both clinically and in terms of staff accommodation, storage, and supporting infrastructure (such as ICT and clinical support services). Addressing these pressures through improvements to flow and functionality is important across the QCH precinct and community sites.

QCH

At QCH, consultation as part of the Current State Infrastructure Review identified several key areas of current pressure:

- Outpatient departments are busy and have no capacity to expand.
- ED flow and functionality is limiting growth.
- Clinical and non-clinical support services like storage, kitchens, and pharmacy are significantly space constrained on the current site.
- Enabling services such as ICT core infrastructure and car parking are at capacity.

More detail on the emerging issues and areas of lower functionality within QCH is given in Chapter 3 of this report and in Appendix A.



Queensland Children's Hospital

Table 2: Impact of flow and functionality issues at QCH precinct

Area	Issue	Impact of change
ED	<ul style="list-style-type: none"> • ED waiting areas are undersized and have poor visibility • Some ED spaces are oddly shaped and are underutilised as a result • The mental health space is located near negative pressure rooms used to isolate infectious children and in a busy corridor that does not offer any privacy for children and families in distress. 	<ul style="list-style-type: none"> • Better utilisation and throughput in the existing ED space • Appropriate environment to manage mental health consumers • COVID-19 safety of consumers Improved consumer and carer experience.
Outpatient areas	<ul style="list-style-type: none"> • Outpatient clinics are busy and have no space to expand • Not all rooms are fit-for-purpose for consumers and their families • No dedicated private space for clinicians to deliver telehealth. 	<ul style="list-style-type: none"> • Well-equipped virtual spaces will increase capacity to deliver virtual care • Fit-for-purpose spaces with opportunities to delivery closer to home will improved consumer and carer experience.
Storage	<ul style="list-style-type: none"> • Insufficient storage for models of care resulting in clinical spaces (including some outpatient rooms and the ambulance bays) being utilised. 	<ul style="list-style-type: none"> • Better utilisation of existing infrastructure • Avoid safety issues created by temporary storage solutions blocking egress.
Kitchen	<ul style="list-style-type: none"> • While the current food service model works well, the kitchen was designed for a different model. 	<ul style="list-style-type: none"> • Enable more efficient food service delivery within current footprint • Improve the experience of kitchen staff.
Pharmacy	<ul style="list-style-type: none"> • Pharmacy footprint is undersized relative to QCH's current bed base (based on benchmarking) • Current pharmacy cannot increase on-site fabrication to support new therapies. 	<ul style="list-style-type: none"> • Enable CHQ to remain at the forefront of paediatric care by providing anticipated new services, like gene therapy • Allow growth and expansion of QCH's current bed base.
Car park	<ul style="list-style-type: none"> • Car parking is constrained across the precinct with periods of full capacity. 	<ul style="list-style-type: none"> • Improved consumer and carer experience
ICT	<ul style="list-style-type: none"> • Core ICT network is at capacity. 	<ul style="list-style-type: none"> • Improved connectivity and increased remote access.



Infrastructure functionality and performance

Improvements to the flow and functionality of existing infrastructure will enable CHQ's vision for future children's health services.

Community sites

For community-based services, ageing infrastructure is not fit-for-purpose or designed to support contemporary service models. Many of the facilities currently used to deliver CYCHS and CYMHS services are not owned by CHQ, and CHQ has limited control over the use and functionality of these spaces representing a major risk to services.

A need for flexible infrastructure that can respond to changing population demographics and community need was identified as important for the long-term provision of community-based services. The children of today become the adolescents of tomorrow, so multi-use spaces that support services growing and changing as the local catchment population changes would maximise functionality.

More detail on the emerging issues at the community sites is given in Chapter 3 of this report and includes some safety and compliance issues as well as issues related to building ageing.



Evolve Therapeutic Services North (Enoggera)



Mount Gravatt East Child Health

Enabling investment

The investment in the flow and functionality of CHQ's current infrastructure is an important enabler of achieving the vision outlined in Chapter 1 for paediatric health services.

In addition to investment in the right physical spaces, proactive investment in the right technology and ICT infrastructure is also a critical enabler for future service growth and new service models. Currently connectivity issues are slowing the uptake of new technology and virtual models of care.

Table 3: Impact of functionality issues at community sites

Issue	Impact of change
Safety and disability compliance	<ul style="list-style-type: none"> • Ensure the safety of staff and consumers • Provide equity of access • Ensure compliance of sites.
Building layouts not purpose-designed for access by children and families	<ul style="list-style-type: none"> • Improve the experience of accessing care for consumers and carers by providing adequate space for children and young people to attend clinics with their carers and siblings.
Lack of adequate spaces for group therapy	<ul style="list-style-type: none"> • Enable evidence-informed contemporary service models like group therapy (for consumers and for carers) • Improve and expand current service offerings.
Lack of adequate parking (at some sites)	<ul style="list-style-type: none"> • Improve equity of access • Improve the consumer and carer experience.
Privacy of consulting rooms and acoustics	<ul style="list-style-type: none"> • Improve the consumer experience by ensuring privacy during consultations (especially for mental health consumers).
ICT connectivity	<ul style="list-style-type: none"> • Enable the adoption of virtual healthcare models for CYCHS and CYMHS services • Improve the staff experience by enabling staff to work from home or from community sites closer to home by providing digital access to systems/records.
Adequate spaces for staff use	<ul style="list-style-type: none"> • Improve the staff experience and ensure staff safety by providing spaces delineated for staff use including office space and kitchen/break out space.
Location of sites are not necessarily aligned to service need	<ul style="list-style-type: none"> • Provide better access to care closer to home.



Increasing demand creates capacity gaps

Based on current activity growth and flow patterns, significant infrastructure capacity gaps will arise for CHQ over the next 15 years.

Demand for CHQ's services is growing

Demand for CHQ's services is growing above projected paediatric population growth within QCH's catchment, in Greater Brisbane and statewide. Figure 20 shows the projected growth rate in the paediatric population and projected activity growth rates based on a 'status quo' projection for inpatient, emergency, outpatient, and community-based services. Inpatient and outpatient services are expected to grow at approximately *three times* the population growth rate, and community services are expected to grow at approximately *five times* the population growth rate between 2021/22 and 2036/37.

Based on no changes to current system flows of paediatric activity, QCH will require a significant volume of additional beds by 2036/37. This is reflected in the status quo infrastructure modelling outlined in this chapter.

Shifting demographics

Most paediatric population growth in Greater Brisbane is occurring in the northern, western and southern outer suburbs of Brisbane, which fall outside of CHQ's current non-tertiary local catchment covering the inner suburbs of Brisbane. Growth is highest in Logan and Beaudesert, Caboolture, and Ipswich (Table 4).

Differential patterns of population growth across SEQ mean that of the 156,990 additional children that will live in Greater Brisbane in 2036, 125,953 (80 percent) will live outside QCH's non-tertiary local catchment area.

Providing care closer to home

These patterns of population growth create a challenge for CHQ in providing care closer to home; for many children in SEQ and across the state, care closer to home means care at another HHS.

QCH was originally designed to support a hub and spoke model that provided general paediatric care close to home at spoke hospitals, with QCH seeing the most complex patients and providing the most acute paediatric care within the state. Feedback from CHQ clinicians was this model has not eventuated, particularly within SEQ – however remains the most appropriate model (with the right enabling functions and governance). Some lower acuity activity that currently flows to QCH could be better managed by other HHSs, which would help to manage future demand. This networked approach to paediatric service delivery is modelled as an alternative infrastructure projection for CHQ.

For community services (including CYCHS and CYMHS services), catchments in the Greater Brisbane area creates confusion for consumers and their families, and between CHQ and the neighbouring HHSs – particularly with reference to referral pathways, access and transition. The community modelling reflects community need and is agnostic of service provider. Under the networked approach scenario projection, no change to community flows has been modelled.

Figure 20: Projected population and service growth from 2021/22 to 2036/37.

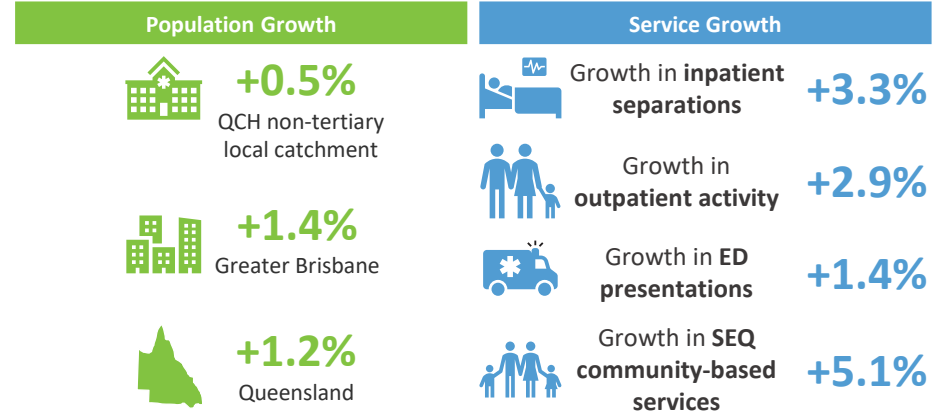


Table 4: Paediatric population growth in Greater Brisbane with shading to show regions where growth is above statewide growth.

SA4 (Region)	Population Estimate		Change	Compound Annual Growth
	2021/22	2036/37		
Brisbane - East	61,045	62,239	+ 1,195	0.1%
Brisbane - North	53,703	56,378	+ 2,674	0.3%
Brisbane - South	91,433	99,846	+ 8,413	0.6%
Brisbane - West	51,054	51,307	+ 253	0.0%
Brisbane Inner City	56,668	64,244	+ 7,576	0.8%
Ipswich	113,874	181,373	+ 67,499	3.2%
Logan - Beaudesert	108,153	146,332	+ 38,179	2.0%
Moreton Bay - North	67,233	87,508	+ 20,275	1.8%
Moreton Bay - South	65,954	76,880	+ 10,925	1.0%
Total	669,117	826,107	+ 156,990	1.4%

¹ Note: QCH, CYCHS and CYMHS services have different catchments across Greater Brisbane. The details of the areas included in each catchment are provided in Appendix B. For non-statewide or tertiary services, QCH's catchment broadly corresponds to the inner suburbs of Brisbane.



Increasing demand creates capacity gaps

Defining the vision
Strategic context and methodology
Current infrastructure
Case for change
Response strategies
Project roadmap

The Master Plan is based on two sets of infrastructure projections – a status quo projection and a networked approach projection based on changes to patient flows. The projection have been developed in consultation with CHQ, DoH (such as System Planning Branch) and other HHSs.

Projection 1: Status quo projection

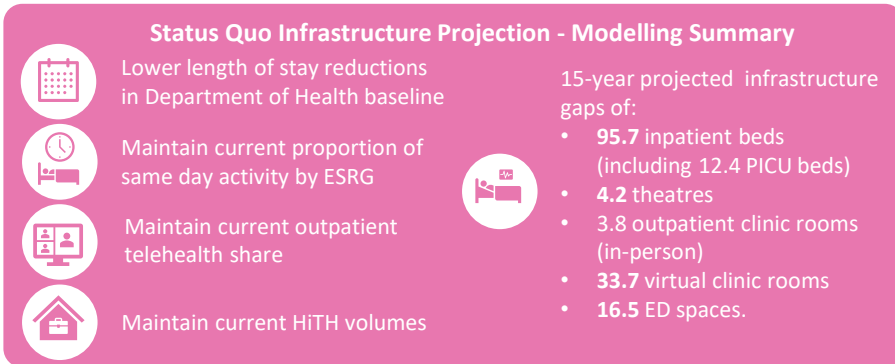
The status quo (adjusted baseline) is a projection of CHQ’s infrastructure requirements based on a continuation of current trends and in the absence of significant changes to service models.

Development of the status quo projection was based on extensive consultation with clinicians and consumers, and analysis of baseline activity projections from the Department of Health compared to the historical trends in CHQ’s activity data. This analysis identified several modelling tools to adjust the baseline projections provided by the Department of Health to better reflect CHQ’s current service trends, including:

- **Activity adjustments.** Adjustments were made to activity to reflect historical service delivery in 2021 including increasing separations delivered by same day models of care, increasing proportion of beddays delivered by HiTH and altering the length of stay assumptions in the Department of Health baseline projections to better reflect QCH’s current average length of stay. Growth rates and the base year for the outpatient and ED projections were also adjusted to reflect the growth CHQ has experienced since 2018/19.
- **Infrastructure conversion adjustments.** Standard service planning methodologies were adapted to better reflect the delivery of paediatric services, based on clinical consultation and analysis of historical service patterns and infrastructure throughput.

Based on the status quo projection, the infrastructure gap in the status quo projection is the ‘worst case’ scenario for QCH, with minimal mitigation strategies applied.

Figure 21: Status quo projection modelling assumptions



Projection 2: Networked approach projection

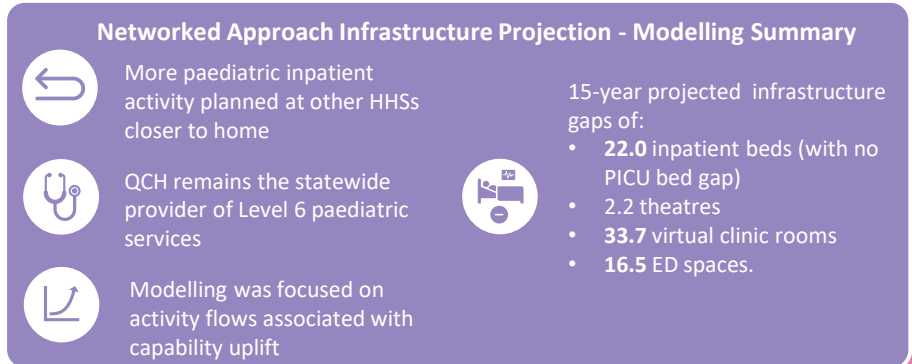
CHQ recognises that a whole-of-system, population health based approach to planning and delivering paediatric services is required to deliver effective, sustainable patient and family-centred care.

At a system level, Queensland Health’s statewide plan for children’s and young people’s health services to 2026 outlines a strategic direction for paediatric services in Queensland. Despite this statewide strategic plan, there is currently no system-wide planning of paediatric services and how these will evolve over the next 15 years. Optimisation of system-wide activity flows will enable more Queensland children to access care closer to where they live and better utilise existing paediatric capacity across the state, and is also critical for the sustainability of QCH’s current system role as the quaternary children’s hospital.

In the networked approach (scenario) projections, changes to inpatient activity flows from HHSs planning for paediatric capability uplift (Metro North, Metro South, West Moreton and Sunshine Coast) were modelled, resulting in a reduction in the bed gap projected for QCH under the status quo projection. This bed gap reduction represents a requirement for additional paediatric capacity within the overall system or network of paediatric services.

In the absence of coordinated planning of system-wide flows and adequate additional capacity and capability, the infrastructure requirements at QCH will vary between the networked approach scenario projection (22.0 overnight and same day beds) and the status quo scenario projection (95.7 additional overnight and same day beds). In this way, the networked approach projections represent a ‘best case’ scenario for CHQ.

Figure 22: Networked approach projection modelling assumptions





Increasing demand creates capacity gaps – QCH projections

Infrastructure projections for QCH

Projection 1: Status Quo – QCH infrastructure projection

Based on current service delivery and flow patterns, QCH will face significant capacity gaps by 2036/37 (Table 5) including:

- An **inpatient bed gap of 95.7 total beds** comprised of 42.8 overnight beds, 31.1 same day beds, 9.4 subacute beds, and 12.4 PICU beds.
- A requirement for **4.2 additional theatres, 3.8 additional outpatient clinic rooms** and **16.5 Emergency Department spaces**, as well as substantial growth in medical imaging infrastructure requirements.
- A requirement for **33.7 purpose-designed spaces for virtual care** to reduce the use of outpatient clinic rooms for virtual consultations.

Projection 2: Networked Approach – QCH infrastructure projection

Based on a networked approach to service delivery and flows of activity back to other HHSs, the projected infrastructure gaps at QCH reduce significantly:

- **22.0 inpatient bed gap** in the networked approach scenario decreases by 73.7 beds from 95.7 total beds in the adjusted baseline. This is comprised of:
 - **Overnight: No projected overnight bed gap** after planned changes to activity flows. Current capacity exceeds the projected bed required by 7.2 beds.
 - **Same day: 21.8 same day bed gap** which is a decrease of 9.3 beds from 31.1 beds.
 - **Subacute: 7.4 subacute bed gap** which is a decrease by 2.0 beds from 9.4 beds.
 - **PICU: No growth in PICU bed requirements** reduces the PICU bed gap from 12.4 beds to 0 beds.
- **2.2 theatre gap** in the networked approach scenario projection is a decrease (from 4.2 theatres) proportionally to the overall reduction in QCH beddays.
- During development of the projections, consultations identified a number of outpatient clinics that could potentially move off the QCH site to provide additional capacity. The networked approach projection addresses the on-site clinic room gap of 3.8 rooms in the status quo projection by **shifting 11.6 outpatient clinic rooms to an off-site location¹** as well as **utilising purpose-designed spaces/alternative models for virtual care.**

Details of the service planning work are available in the Future Considerations and Projections Paper (Appendix B) and the Future State Options and Recommendations Report (Appendix C).

Table 5: Infrastructure projections for QCH, status quo and networked approach.

Item	Actual 2020/21	Status Quo Projection (Scenario 1)		Networked Approach Projection (Scenario 2)	
		2036/37	Δ 2020/21 – 2036/37	2036/37	Δ 2020/21 – 2036/37
Inpatient	333.0	428.7	95.7	355.0	22.0
Acute	261.0	334.9	+73.9	275.5	+14.5
Overnight	205.0	247.8	+42.8	197.8	-7.2
Same Day	56.0	87.1	+31.1	77.8	+21.8
Subacute	16.0	25.4	+9.4	23.4	+7.4
Mental health	20.0	20.0	+0.0	20.0	0.0
PICU	36.0	48.4	+12.4	36.0	0.0
Operating Theatres					
Theatres	14.0	18.2	4.2	16.2	2.2
Recovery (Stage 1)		27.3		24.3	
Medical Imaging					
Computed Radiography	5.0	9.5	+4.5	8.5	+3.5
Computed Tomography	2.0	1.8	-0.2	1.6	-0.4
Magnetic Resonance Imaging	3.0	7.0	+4.0	6.2	+3.2
Nuclear Medicine	1.0	1.1	+0.1	1.0	-
Theatre – Imaging Intensifiers	3.0	2.0	-1.0	1.8	-1.2
Ultrasound	4.0	6.0	+2.0	5.4	+1.4
X-Ray Angiography	2.0	3.4	+1.4	3.0	+1.0
Procedures					
Chemotherapy same day beds	8.0	11.8	+3.8	11.8	+3.8
Dialysis chairs	9.0	6.7	-2.3	6.7	-2.3
Emergency Department					
Resuscitation bays	5.0	5.5	+0.5	5.5	+0.5
Treatment spaces	37.0	48.0	+11.0	48.0	+11.0
Short stay beds	18.0	22.8	+4.8	22.8	+4.8
Isolation rooms	3.0	3.7	+0.7	3.7	+0.7
Outpatient					
QCH Total	99.0	136.5	+37.5	136.5	+37.5
QCH on-site	99.0	102.8	+3.8	91.2	-7.8
Potential offsite ¹		-		11.6	+11.6
Virtual care spaces ²	0.0	33.7	+33.7	33.7	+33.7

¹ High level modelling was undertaken for the Master Plan. CHQ will need to undertake further planning work to confirm operational viability of moving Tier 2 clinics off-site.

² Additional virtual hospital space has been allocated in the QCH options schedules of accommodation outlined in Chapter 05.



Increasing demand creates capacity gaps – community

Infrastructure projections for community-based services

Scenario 1: Status Quo – Community infrastructure projection

For **CYCHS and CYMHS community-based services**, the status quo projection is based on current per capita service levels adjusted for population growth in CHQ's current catchment, and increasing utilisation of services over time based on historical trends and to account for a proportion of unmet need⁵.

Activity was converted to infrastructure requirements based on an estimate of consultation duration, consulting minutes per room per day, and the days of operation each year. The assumptions for infrastructure conversion were developed through consultation with CYCHS and CYMHS staff and assume a proportion of activity is delivered via group sessions. Details are available in Appendix B.

Due to the dispersed nature of CYCHS and CYMHS services and the multiple different infrastructure arrangements (owned, commercially leased and other arrangements), it was not possible to practically identify the number of rooms currently available to CHQ. As such, the total requirement (129.9 rooms for CYCHS and 74.2 rooms for CYMHS) is provided in Table 6.

Because of the population growth predicted in outer Brisbane (in areas outside CHQ's current catchment for community-based services) and issues with catchments creating confusion for children and families, a second projection of infrastructure requirements for the Greater Brisbane area was also produced (Table 7) using the population-based methodology. This estimates approximately 172.3 rooms are required for CYCHS and 135.8 rooms/room equivalents are required for CYMHS services in the Greater Brisbane area.

This analysis is agnostic of provider but based on CHQ's current service delivery models (i.e. services could be provided by other HHSs using a similar delivery model). Resolution of the complex catchments for community-based services should form part of a statewide plan for paediatric services.

For the Ellen Barron Family Centre, the status quo projection is based on statewide paediatric population growth applied to the current number of children under three attending the centre (a proxy for the number of family groups attending). The modelling includes a shift of activity to the Telehealth Parenting Education Program from the in-person programs offered at the centre, reducing overall in person infrastructure requirements by approximately six rooms in 2036/37. If this shift does not eventuate, the 5.8 virtual room equivalents would be required at the Ellen Barron Family Centre.

Scenario 2: Networked Approach – Community infrastructure projection

No changes to the status quo projections were made for community-based services.

Table 6: Infrastructure projections for CYCHS and CYMHS, status quo and networked approach (CHQ's current catchment).

Item	Actual	Status Quo Projection (Scenario 1)		Networked Approach Projection (Scenario 2)	
	2020/21	2036/37	Δ 2020/21 – 2036/37	2036/37	Δ 2020/21 – 2036/37
Ellen Barron Family Centre					
Total In Person	20.0	19.5	-0.5	19.5	-0.5
Total Virtual (Room equivalents)		5.8	-	5.8	-
Community					
CYCHS	-	129.9	-	129.9	-
CYMHS	-	74.2	-	74.2	-
In Person	-	42.6	-	42.6	-
Virtual	-	31.6	-	31.6	-

Table 7: Infrastructure projections for CYCHS and CYMHS, status quo and networked approach (expanded Greater Brisbane catchment).

Item	Actual	Status Quo Projection (Scenario 1)		Networked Approach Projection (Scenario 2)	
	2020/21	2036/37	Δ 2020/21 – 2036/37	2036/37	Δ 2020/21 – 2036/37
Ellen Barron Family Centre					
Total In Person	20.0	19.5	-0.5	19.5	-0.5
Total Virtual (Room equivalents)		5.8	-	5.8	-
Community					
CYCHS	-	172.3	-	172.3	-
CYMHS	-	135.8	-	135.8	-
In Person	-	76.6	-	76.6	-
Virtual	-	59.3	-	59.3	-

5. The methodology does not quantify the volume of unmet need in the community, but adjusts the growth rates for community-based services assuming some proportion of unmet need is treated in the future. Details are available in Appendix B.



Benefits of change

Future service delivery models and investment in the right enabling infrastructure will improve the health, wellbeing and experience of children and families

Benefits for addressing the problems/opportunities identified in the Master Plan

Key benefits of addressing the problems/opportunities identified include:

- Ensuring CHQ remains at the forefront of contemporary clinical service delivery through an infrastructure strategy that supports emerging models of care (HiTH, ambulatory care models, telehealth/virtual care models).
- Maximising the use of infrastructure across the health system and reducing the projected capacity gaps at QCH through preferred investment in changes to service models and patient flows, rather than traditional capital investment.
- Addressing existing flow and functionality constraints at QCH and community sites to enable service model changes and deliver more care in the community where it is most accessible to children and their families. This will also streamline the operational and clinical performance of the hospital.
- Improving the consumer and carer experience of paediatric healthcare by co-designing infrastructure with consumers and delivering more care closer to home.



Care closer to home – a patient’s perspective

Fitting appointments into families’ already hectic lives, together with the difficulties of finding parking spaces, catching public transport, and long waiting times in a noisy and frenzied hospital contributes to feelings of stress and anxiety for families attending outpatient appointments. Community-based clinics allow families to carry on their lives as normal, without causing significant disruption to their daily routine.

“It was friendly, really bright, it wasn’t scary. The hospital I find can be quite daunting especially for my daughter; it’s very noisy and echoey, lots going on. It’s quite calm at the children’s centre, even though there are people doing different things, you know, everyone smiles and says hello and it’s just a welcoming atmosphere, which I think puts my daughter at ease definitely. You go to the reception and sign in and then they tell us whether we are running on time or if the doctor is running a bit late and then we just go and take a seat and wait for the doctor to call us.” (Parent)

“It’s really handy, it means my husband can get out of work because he works nearby, and we don’t have to take our daughter out of school all day. But if we go to the Children’s Hospital, it is a journey there, the journey back, it takes up most of the day. So, it’s nice and handy with the other children, with nursery it means we can fit it all round, so it’s really handy.” (Parent)

“Going to the Children’s hospital was hard because I missed a lot of my school time and because of that and, if you miss an hour or one lesson, then you miss a lot of work so I had to catch up on that which made me feel bad because everyone else were ahead of me and I was behind. Going to the clinic close to my home means I miss less of school and that’s good.” (Young person)

“It’s part of my community. It’s just around the corner and, like, when you go to school or something, you go past it, you see it and I’m used to it being there.” (Young person)

05 Response strategies



5.1 Response strategy framework development

Defining the vision
Strategic context and methodology
Current infrastructure
Case for change
Response strategies
Project roadmap

Overview

This section provides an overview of the CHQ future state response strategies for services and infrastructure across the 15-year time horizon. The identified potential responses have been developed to address the services and infrastructure issues, gaps and opportunities identified in Phase 1A (Appendix A), Phase 1B (Appendix B) and Phase 1C (Appendix C) of the master planning process.

The overarching problem and opportunity themes as outlined in Chapter 4 include:

1. **Contemporary and evolving service models** for children’s health services require different infrastructure, including digital responses
2. **Increasing demand for CHQ’s services** over the next 15 years will create infrastructure capacity gaps, increasing the need for new service models and technology solutions (as well as physical infrastructure)
3. **Several functionality and performance** issues with CHQ’s current infrastructure.

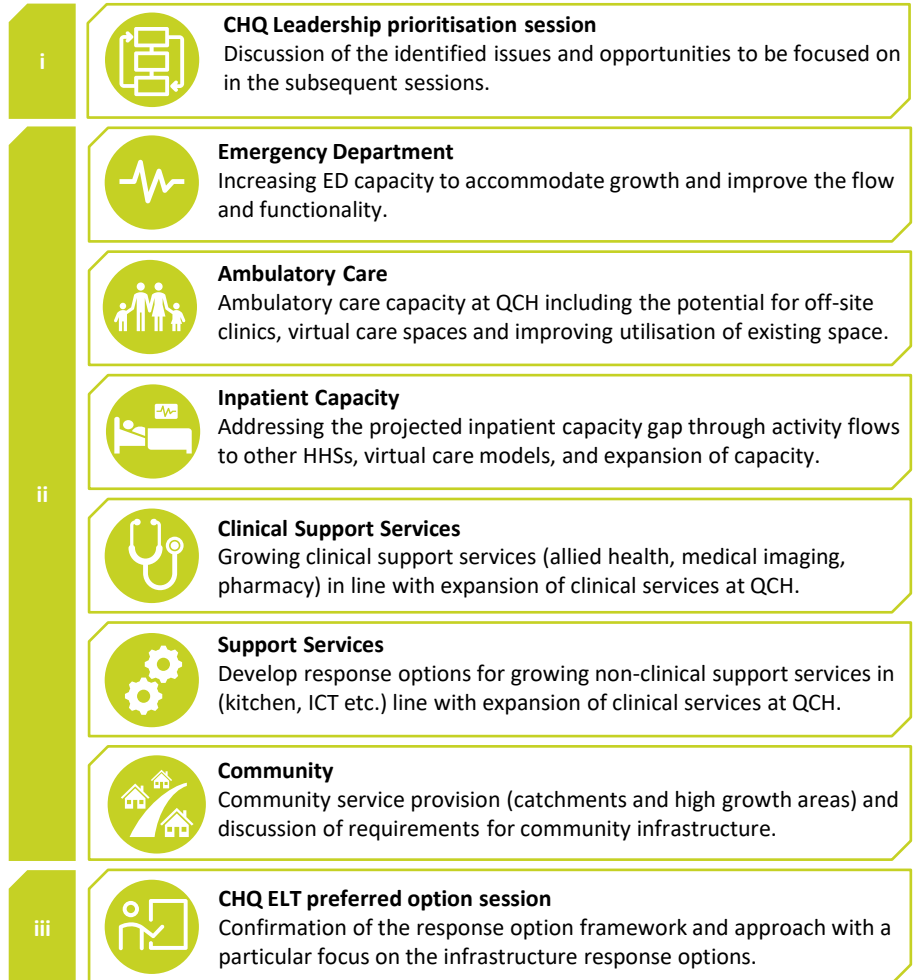
Consultation process

A series of user groups were held to confirm the current state and to test and inform the response option strategies. The sessions were facilitated by Deloitte and/or BVN architects and attended by CHQ, consumer and carer representatives.

Three rounds of user groups were held to discuss the response options:

- i. **CHQ leadership prioritisation session** with an Executive User Group to discuss the identified issues and opportunities to be focused on in the subsequent sessions
- ii. **Multiple user group sessions** with representation from the QCH emergency department, QCH ambulatory care, QCH inpatient care, QCH clinical support services, QCH support services and community-based services
- iii. **A session with the ELT to identify a preferred option** which confirmed the response option framework and approach with a particular focus on the infrastructure response options.

Figure 23: Response strategy consultation sessions





5.1 Response strategy framework overview

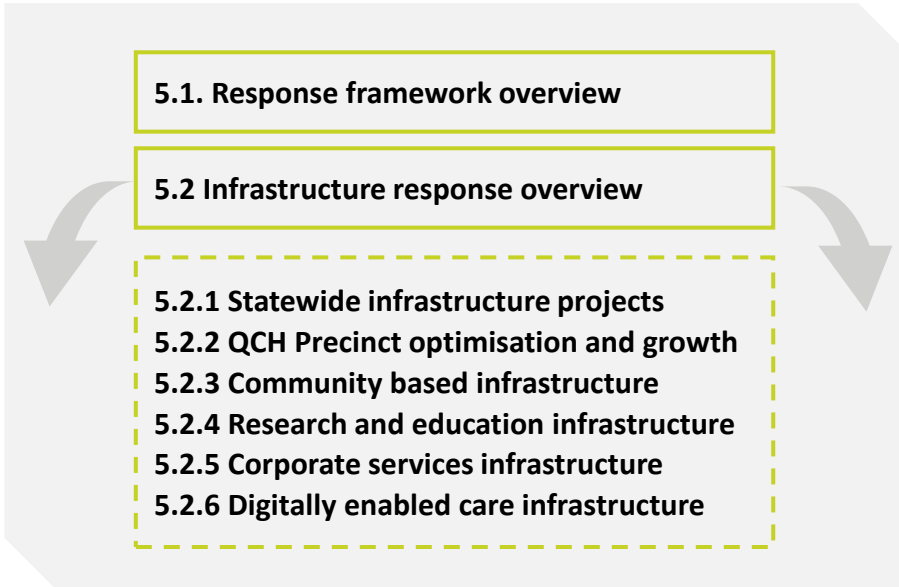
Overview of the response strategy framework.

Response strategy framework

The Master Plan response strategy framework has been developed to challenge the status quo and reimagine the future health system for children across Queensland. As such, the future response strategies are not simply focused on traditional infrastructure (i.e. CHQ-owned bricks and mortar) but starts with service model responses. The responses also consider the role of technology and the broader statewide network that can support our vision for children’s health services – [to lead] life-changing care for children and young people – for a healthier tomorrow.

The response strategy framework has been developed in consideration of the Master Plan design principles outlined in Chapter 1 and the problem and opportunities outlined in Chapter 4. Figure 24 outlines the section navigation for this chapter.

Figure 24: Structure of the response strategies chapter



The response strategy framework includes priorities, service responses and infrastructure responses. This is outlined in further detail on the following page.

Figure 25 shows the link between service and infrastructure responses, and three enablers that are at the heart of our response framework:




-  **Consumers.** Alignment of the responses to the health needs of consumers based on evidence and ensuring equitable access to safe, high quality care. Ensuring “that every decision made is seen through the lens of the patient and that consumers are involved at every level from the bottom up...” (CHQ Health and Wellbeing Services Plan).
-  **Partnerships.** Enabling and supporting partnerships at all levels to ensure the most appropriate response – whether it is in regards to who is best placed to operate a service and/or own or lease infrastructure.
-  **Innovation.** Embedding innovation in response strategies across all facets including but not limited to clinical, research, workforce, technology, administration, non-clinical support, etc.

Figure 25: Response strategy framework



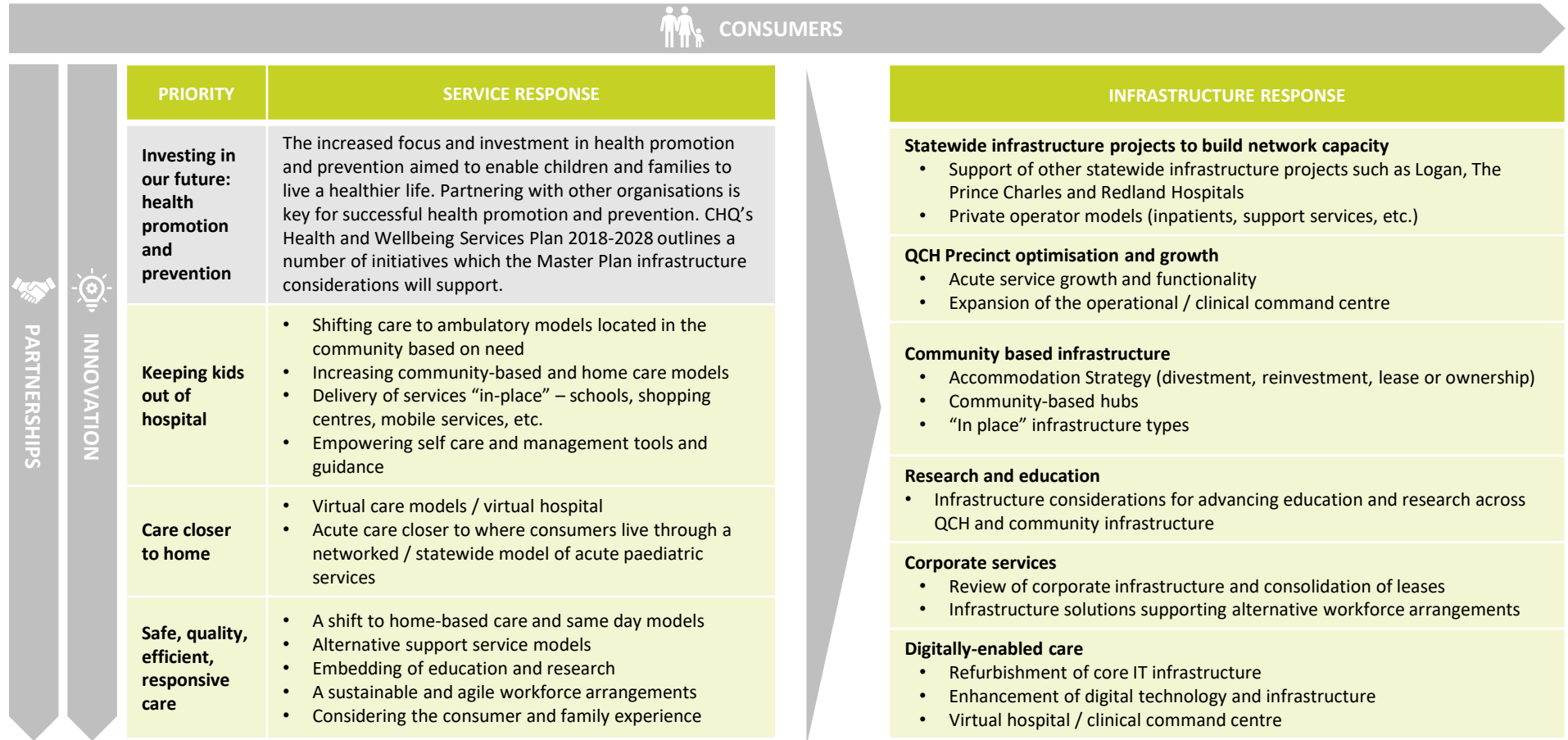


5.1 Response framework summary

Summary of the Master Plan response strategy framework.

Figure 26 provides a summary of the Master Plan response strategy framework. Section 5.2 of this chapter provides further details of each of the infrastructure response themes.

Figure 26: Master Plan response strategy framework summary



Defining the vision
 Strategic context and methodology
 Current infrastructure
 Case for change
 Response strategies
 Project roadmap



5.2 Infrastructure response strategies overview

Overview of the infrastructure response strategies.

Six infrastructure responses themes were identified to address our priorities and support delivery of the service responses. The infrastructure response strategies are outlined in section 5.2 of this chapter (this section).

5.2.1 Statewide infrastructure projects to build network capacity

CHQ recognises that a whole-of-system, population health based approach to planning and delivering paediatric services is required to deliver effective, sustainable patient and family-centred care. Optimisation of system-wide activity flows will enable more Queensland children and young people to access care closer to where they live and better utilise existing paediatric capacity across the state. A statewide network of paediatric services is also critical for sustainability of QCH's role as the tertiary children's hospital.

Despite this, there is currently no system-wide planning of paediatric services and how these will evolve over the next 15 years.

The Master Plan outlines the critical need for a networked approach to paediatric services, considering both service delivery and with that, infrastructure planning.

As a result, CHQ supports the need for infrastructure projects within other HHSs across Queensland, including projects and clinical service capability uplift in key areas (Metro North, Metro South, West Moreton, Gold Coast and Sunshine Coast HHSs).

To enable this however, it is critical that a Statewide Paediatric Health Services Strategy and Plan is developed, with clear articulation of the roles and responsibilities of various stakeholders (including CHQ); and a clear mandate from the Department of Health for CHQ's ongoing statewide role.

5.2.2 QCH Precinct optimisation and growth

Changes to QCH infrastructure to support increasing demand across the 15-year time horizon and improve current functionality and flow issues. Strategies include:

- Optimisation of a number of clinical and non-clinical support services to improve functionality and flow, such as the ED and the kitchen.
- Additional clinical infrastructure such as inpatient beds, emergency department treatment spaces, and operating theatres to address the growth in service demand.
- Expansion of the existing clinical and non-clinical support service infrastructure such as operational / clinical command centre, pharmacy and medical imaging.
- Relocation of a significant amount of outpatient clinics and administration to enable the above strategies, whilst also improving accessibility for consumers and families.
- Car parking considerations based on changes outlined above and current demand pressures (to be considered as a precinct strategy in collaboration with the Mater).

5.2.3 Community based infrastructure

The service response shifts to keeping kids out of hospital and care closer to home will result in the need for additional and more fit-for-purpose, age-appropriate, community based infrastructure. Several infrastructure responses will be required to be implemented in combination, these include:

- Sale and reinvest, and/or refurbishment/redevelopment of existing infrastructure to provide better fit-for-purpose infrastructure in areas of need.
- Standard leasing models for "in place" infrastructure such as shopfronts, schools, mobile vehicles, etc.
- Community Health Hubs with a combination of flexible and suitable community clinical spaces, work spaces for staff and partner spaces across a number of CHQ services. Hubs are supported by "in-place" infrastructure to enable greater flexibility of service delivery close to home.

5.2.4 Research and education infrastructure

Ensuring infrastructure supports the advancement and further embedding of research and education across QCH and community sites, aligned to CHQ's research and education strategic and operational planning.

5.2.5 Corporate services infrastructure

Optimisation and consolidation of corporate service spaces such as office based services to be considered through mixed strategies of:

- Site consolidation (lease and owned) and alignment with need.
- Flexible working strategies such as working from home, or from other CHQ or partner sites.

5.2.6 Digitally-enabled care infrastructure

Technology will provide greater opportunities to deliver care closer to home and in alternative settings; this will include both digitally-enabled care models (and interfaces for consumers and their families), as well as the technology infrastructure that underpins this (supporting our workforce, operations and direct clinical services). Considerations include:

- Refurbishment of core ICT infrastructure
- Enhancement of digital technology and infrastructure
- Virtual hospital / clinical command centre
- Technological health solutions, e.g. wearables, implantables, etc.



5.2.1 Statewide infrastructure projects to build network capacity

Overview of the statewide infrastructure response strategies to enable a networked approach.

Context

CHQ's Strategic Plan 2020-2024 and Health and Wellbeing Services Plan 2018-2028, as well as system-level strategies and planning all highlight the need for services to be provided closer to where people live. Providing care closer to home is also a key design principle of this Master Plan.

QCH was planned and developed on the basis of a statewide network of paediatric services – with more general, and some specialised paediatric services being provided in local hospitals around the State (particularly hospitals such as Logan, Redland, Caboolture, The Prince Charles, Ipswich and major regional centres), with QCH as the statewide tertiary provider. Taking a partnership approach to services and infrastructure is also a fundamental design principle of the Master Plan to ensure a consumer and family-centred care is delivered by the most suitable service provider in the most suitable location.

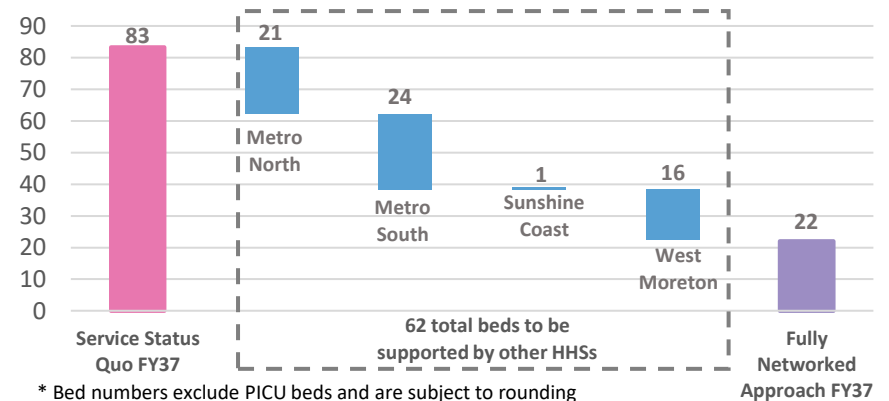
Infrastructure response

Aligned with CHQ and system-level strategies, the preferred direction for the Master Plan is for the growth in hospital and community capacity to occur within the local HSSs where there is significant population growth – to provide care closer to home.

This means the CHQ Master Plan supports the need for specific infrastructure projects in key areas to ensure the appropriate capacity is provided to support growth in paediatric services. Without these projects, the preferred option presented for QCH will not be possible – with the Status Quo (or Partially Networked Approach) scenario being required to ensure the needs of children are met.

Figure 27 outlines the projected FY37 bed gap under the Status Quo and Fully Networked Approach scenarios. The Fully Networked Approach highlights that 62 additional beds are assumed to be supported by statewide infrastructure projects and 22 additional beds are assumed to be supported by QCH, noting that the assumed statewide infrastructure projects are based on the projected uplift CHQ requires to be supported by the system and not the total number of paediatric beds projected for these hospitals. It should also be noted that these figures are projected beds based on service need rather than proposed physical beds which take into account the physical space and operational staffing considerations.

Figure 27: Projected FY37 acute and subacute bed gap



Service and other considerations

Infrastructure alone will not address the need for growth in paediatric services outside of QCH. Growth in clinical service capability – particularly in workforce and support services – is also critical to ensuring these services can commence and operate sustainably. Whilst private operating models may support part of this growth, a statewide approach is required. Consultation with stakeholders (both CHQ and across the system) identified the Fully Networked scenario as the preferred approach. It was noted, however, that the current system operations is not fully achieving this intent. As such, to ensure the Networked Approach is sustainable (and therefore avoiding the need for complex and costly infrastructure expansion at QCH), a number of programs of work need actioning and issues considered:

- Development of a Statewide Paediatric Services Strategy and Plan
- Detailed development and operating model for the statewide network of services – particularly outlining clearly governance arrangements, and roles and responsibilities between the Department of Health, CHQ, and other HSSs
- Clear mandate of roles and responsibilities from the Department of Health through the Service Agreement process (or other appropriate arrangement)
- Consideration of the evolution of CHQ's role in the system, to support (or potentially lead) commissioning of children's health services statewide.



5.2.2 QCH Precinct optimisation and growth

Overview of the QCH Precinct infrastructure response strategies.

Context recap

As outlined in Chapters 3 and 4, while QCH is relatively new, there are:

- **Functionality and flow optimisation opportunities** (e.g. ED, outpatients, kitchen, pharmacy, car parking, storage, ICT).
- **Growing demand** for paediatric inpatient services across the 15-year time horizon.

The demand projections outlined in Chapter 4 have formed the basis for the infrastructure response options considered. A recap of the demand projections are:

- **Status Quo** – This scenario projection assumes that centralised services will continue to be delivered from QCH and that it will need to expand to meet all growth.
- **Networked Approach** – This scenario assumes a system-wide approach is taken to support the uplift in paediatric capability in other HHSs with a smaller amount of growth addressed at QCH (compared to the Status Quo). This scenario relies heavily on a statewide paediatrics network and growth at other HHSs in the system.

Response options

In consultation with ELT, it was noted that the Networked Approach will require system-wide infrastructure and several service model changes to ensure it is sustainable long-term. There are a number of critical dependencies to this solution such as:

- Development of a Statewide Paediatric Services Strategy and Plan
- Review and update of networked / statewide model of acute paediatric services to enable care closer to home
- Other system-wide infrastructure projects (e.g. Logan Hospital, TPCCH and Redland Hospital, etc.) receiving funding and approval to provide the additional paediatric service infrastructure to enable care closer to home
- Review and development of virtual care models / virtual hospital models.

Due to the critical nature of these dependencies and the level of risk associated, a full and partial networked scenario was considered. This includes:

- **Full Networked Approach.** This scenario is per the Networked Approach outlined above and in Chapter 4. Refer to Table 8 for a summary of the projected requirements.
- **Partial Networked Approach.** This scenario considers that roughly two thirds of the networked inpatient services planned are required to be met at QCH rather than across the network. This is a risk mitigation scenario for the purposes of the Master Plan development, to appropriately account for the situation where the full uplift of capability and capacity in other parts of the system does not eventuate.

Table 8: Summary of infrastructure gaps targeted

Change in infrastructure (2020/21 – 2036/37)	Status Quo (QCH)	Partial Networked Approach		Full Networked Approach	
		QCH	System	QCH	System
Inpatient beds	95.7	60.0	23.3	22.0	61.3
Acute and subacute	83.3	60.0	23.3	22.0	61.3
PICU	12.4	0.0	0.0	0.0	0.0
Operating Theatres					
Theatres	4.2	3.2	1.0	2.2	2.0
Medical Imaging					
Computed Radiography	9.5	8.5	1.0	8.5	1.0
MRI	7.0	6.2	0.8	6.2	0.8
ED					
Treatment Spaces	11.0	11.0	0.0	11.0	0.0
Short Stay Beds	4.8	4.8	0.0	4.8	0.0

Through user group consultation, a long list of infrastructure options were developed and tested through a workshop with the ELT. The options comprised of multiple dimensions:

- **Service need** – illustrated by the infrastructure projections, with multiple scenarios as described above):
 - Status Quo
 - Full Network
 - Partial Network.
- **Infrastructure solution/s** – various solutions to meet each of the different service need scenarios:
 - Reorganisation within the existing QCH footprint only; with significant relocation of services offsite (primarily outpatients and administration space)
 - Expansion of QCH footprint into space within the QCH precinct not currently owned or occupied by Queensland Health (with minimal reorganisation within QCH and some relocations)
 - New, second QCH campus.

The combination of these dimensions results in a long list of seven infrastructure options, which are outlined on the following page.



5.2.2 QCH Precinct optimisation and growth

Overview of the QCH Precinct infrastructure response strategies.

Table 9: Long list of options assessment

#	Service need projections	Infrastructure solution	Assessment rationale
1A	Status quo (96 beds, etc)	Significant reorganisation within existing QCH and relocation of outpatients and administration offsite.	<ul style="list-style-type: none"> While possible from a design perspective, will have significant disruption to existing QCH services, and likely high cost.
1B	Status quo (96 beds, etc)	Expansion across QCH precinct with minimal reorganisation within existing QCH and some relocation of outpatients and administration offsite.	<ul style="list-style-type: none"> Less disruption and cost (compared to Option 1A). Provides sufficient capacity, and acts as a 'backup' option should the preferred option (2B Fully Networked QCH Precinct Expansion) not eventuate.
1C	Status quo (96 beds, etc)	New, second QCH campus.	<ul style="list-style-type: none"> Not appropriate or realistic option.
2A	Partially Networked (60 beds, etc)	Reorganisation within existing QCH facility with some relocation of outpatients and administration offsite.	<ul style="list-style-type: none"> 'Backup' service option in the situation where the development of a formal statewide network only partially eventuates. Not preferred infrastructure response due to disruption.
2B	Partially Networked (60 beds, etc)	Expansion across QCH precinct with minimal reorganisation within existing QCH and some relocation of outpatients and administration offsite.	<ul style="list-style-type: none"> 'Backup' service option in the situation where the development of a formal statewide network only partially eventuates. Provides sufficient physical capacity, with less disruption to QCH services, and lower cost.
3A	Fully Networked (24 beds, etc)	Reorganisation within existing QCH facility with some relocation of outpatients and administration offsite.	<ul style="list-style-type: none"> Favourable service approach, but still likely to result in significant disruption to existing QCH services. Technically possible from a design perspective should arrangements with precinct partners not eventuate.
3B	Fully Networked (24 beds, etc)	Expansion across QCH precinct with minimal reorganisation within existing QCH and some relocation of outpatients and administration offsite.	<ul style="list-style-type: none"> Preferred service and infrastructure response option. Provides for networked approach; appropriate outcomes for consumers and families (care closer to home); minimises disruption to QCH services; provides for expanded footprint, and likely less cost.

Key: ■ Proceed ■ Do not proceed

Response options

Table 9 outlines the long list of infrastructure options which were developed. Note Options 1A, 2A and 3A are theoretically possible based on analysis undertaken by BVN architects, however, are not considered feasible due to the extent of disruption and potential cost (this is explained further on the following page).

Three options were shortlisted and agreed by ELT to progress for presentation in the Master Plan, including initial cost estimates. These include:

1. Option 1B – Status Quo, QCH Precinct Expansion
2. Option 2B – Partially Networked, QCH Precinct Expansion
3. Option 3B – Fully Networked, QCH Precinct Expansion.

These options are presented in further detail in this Chapter.

ELT identified Option 3B (Fully Networked QCH Precinct Expansion) as the preferred option; based on the system-wide approach to service delivery and precinct approach for additional infrastructure required at QCH which reduces the disruption to the existing QCH facility and services.



5.2.2 QCH Precinct optimisation and growth

Overview of the QCH Precinct facility solutions explored to address the QCH infrastructure gaps.

QCH building

The primary driver of the QCH precinct approach, rather than QCH facility reorganisation, is due to the significant level of disruption to services to restack the QCH facility. This is as a result of the limited space available for future proofing in the original design, and the bespoke nature of the QCH building design which makes modifications challenging, expensive and disruptive at best, and at worst, not viable or realistic. There is no space on the QCH site for expansion of the existing hospital building which means refurbishment of existing areas will only be achievable through relocating services offsite requiring dislocation of services and staging.

Analysis by BVN architects shows that it is technically possible to reorganise QCH to achieve Options 1A, 2A and 3A. However, under these options there would be extensive decanting, refurbishment and relocation required across 5 to 10 stages, comprising between 15 and 25 services to be moved or impacted and work to be completed over 5 to 10 years (albeit possibly not continuous). Figure 28 provides an example of the areas to be reorganised within QCH to achieve the additional infrastructure required under Option 1A (Status Quo QCH Reorganisation).

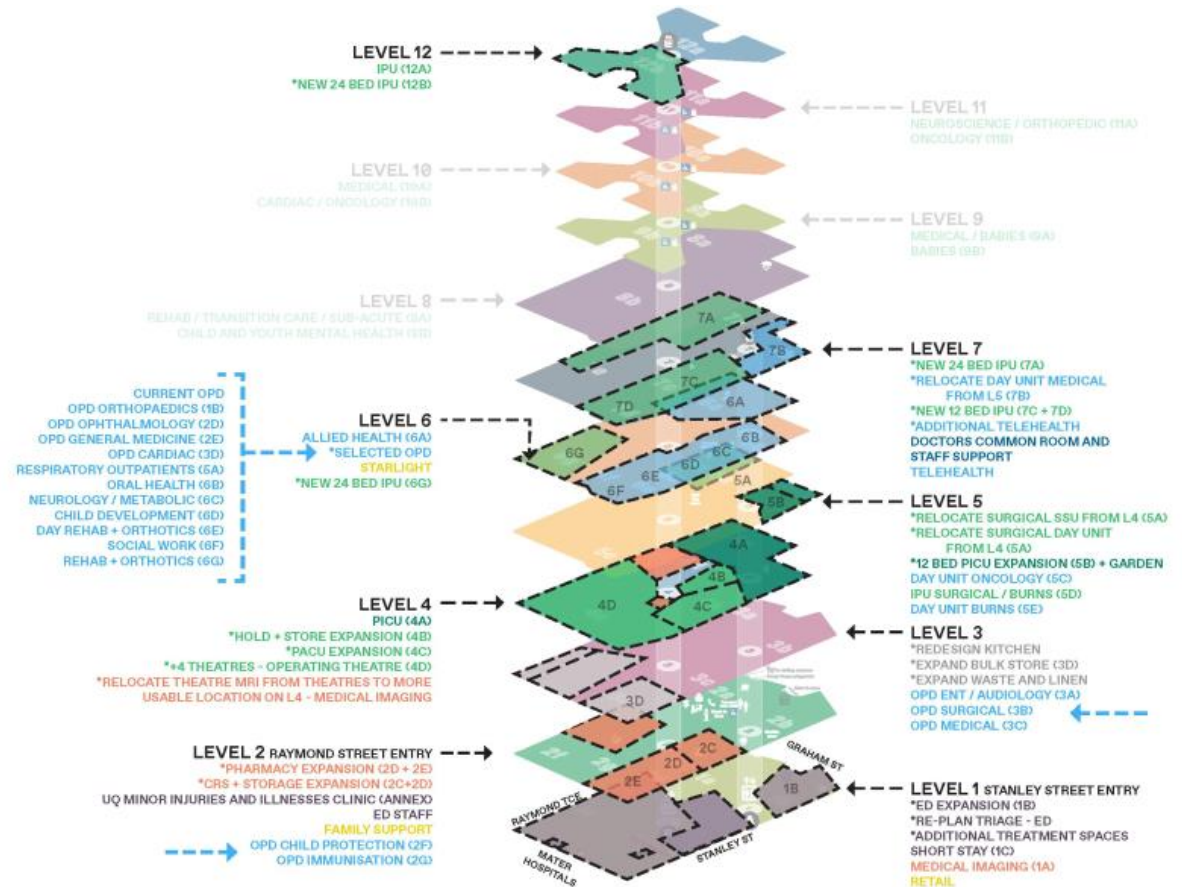
New children's hospital site

A second QCH on a new campus was determined not to be appropriate or realistic due to a range of considerations, including duplication of services, previous service model with two paediatric hospitals, and likely availability of funding.

QCH Precinct

Due to the reasons outlined above, the QCH Precinct expansion approach is the preferred infrastructure solution for growth at the QCH site. This would result in an expanded footprint on the South Brisbane campus, into space not currently owned or occupied by Queensland Health. Initial discussions with Mater Health Services has identified this as a favourable option, noting further exploration would be required. The following page outlines the other facilities considered within the QCH Precinct.

Figure 28: Option 1A – Status Quo QCH Reorganisation stacking diagram





5.2.2 QCH Precinct optimisation and growth

Overview of the QCH Precinct facility solutions explored to address the QCH infrastructure gaps.

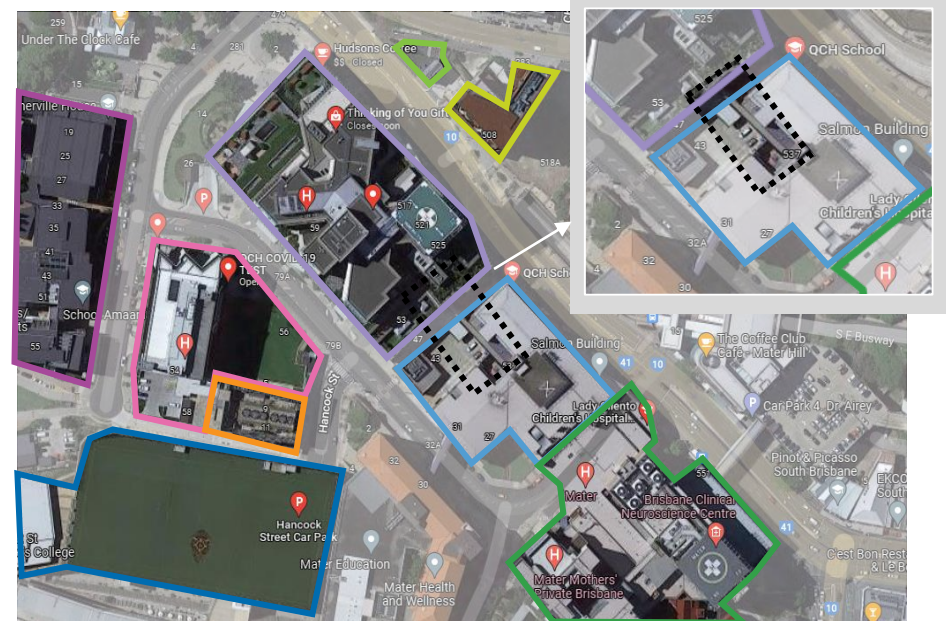
QCH Precinct facilities

The shortlisted and preferred option requires CHQ to expand across the QCH Precinct. As the precinct is highly constrained, there is extremely limited development and expansion opportunities, particularly given the scale of growth and expansion required under the Status Quo scenario projections. Initial considerations of refurbishment or expansion opportunities for facilities within the precinct have included:

- CCHR and adjacent undeveloped land.** Whilst the opportunity to expand CCHR may be possible above the loading dock area, further investigation and feasibility is required. This expansion is likely to be costly and disruptive for minimal space gain. Similarly, the small and irregular shape of the undeveloped land adjacent to the CCHR and QCH results in limited opportunity for use due to considerations such as set back from the street and existing buildings aspects (ventilation, fire safety, etc). The expected area from the CCHR and adjacent land expansion is unlikely to be easily developed, with significant disruption across the Precinct, and is likely to be costly for the minimal area gained. The scale of growth and expansion required under the scenario projections is not likely to be achieved through this expansion.
- Foundation Building.** There is an opportunity to utilise this dedicated or flexible drop in workspace. It would be most suitable for services such as Administration or Executive offices. Due to the size of the building, this would need to be utilised in conjunction with other facilities.
- Mater.** The Mater owns a number of buildings within the Precinct. Based on a desktop review, the building with closest proximity to QCH is the Salmon Building, which provides clinical services (and possibly non-clinical services) and includes three horizontal connections with QCH - level 2 and 3 (covered only) and level 4 (fully enclosed). While initial consultation was conducted with Mater and there was appetite to consider opportunities across the Precinct, further consultation and investigations would be required. As such, no detailed investigation of the opportunities or space has been completed. If this is pursued, CHQ will need to further engage with the Mater to determine what opportunities are available. A detailed review of available spaces and how they align with the needs of QCH would need to be undertaken. This exercise could minimise works within the existing QCH.

Given the scale of growth and expansion required, and the limited opportunities to address this through expanding CHQ owned sites within the precinct, the most viable solution is likely to be a partnership with the Mater. This could include either the purchase or lease of facilities to expand services.

Figure 29: QCH Precinct



Key

CHQ Facilities

- Foundation Building
- QCH
- CCHR
- Energy Plant

Adjacent Facilities

- Link between QCH and Salmon Building
- Somerville House
- Mater Hospital Brisbane
- Mater Salmon Building
- Ronald McDonald House
- St Laurence's College



5.2.2 QCH Precinct optimisation and growth – Option 1B

Option 1B – Status Quo QCH Precinct Expansion

Description

This shortlisted option involves expansion across the QCH Precinct to address all of the planned growth of inpatient services rather than across the system (statewide network of paediatric services). This option does not rely on the statewide network to support any uplift of inpatient services.

Circa 26,000m² of refurbishment and fit out within the QCH Precinct to achieve:

- 84 additional inpatient beds
- 12 additional PICU beds
- 4 additional operating theatres
- 12 additional ED treatment spaces from expansion and reorganisation of the QCH ED. Reorganisation includes changes to the ED entry, waiting, triage and fast track areas to improve efficiency and improve space utilisation. Noting the gap of five short stay beds was not able to be resolved given the limited expansion space available
- 1 additional MRI and relocation of the interoperative medical image machine. Extended hours and more multi-purpose machines was agreed to manage the projected service gap through consultation.
- Expansion of the pharmacy
- Expansion and redesign of the kitchen
- Expansion and relocation of the bulk store
- Relocation of the Surgical Day Unit and Surgical SSU to facilitate theatre expansion
- Relocation of Administration and Ambulatory Care Services
- Expansion of telehealth and the operational / clinical command centre
- Virtual hospital space.

Consideration for additional car parking to be addressed through a Precinct wide strategy with the Mater.

Further details can be found in Appendix D.

Key dependencies

- Purchase or lease of additional QCH Precinct facilities.

Advantages

- Does not rely on other system-wide projects to be funded and approved.

Disadvantages

- Care is not provided closer to home
- Significant disruption and staging.

Cost summary

Table 10 provides a summary of the estimated capital costs with further details provided in Appendix E. Costs have been estimated in FY22 dollars and exclude escalation, decanting, staging and car parking costs.

Table 10: Option 1B estimated capital costs (FY22 dollars)

Description	Capital cost (\$FY22 excl. GST)
ED and Medical Imaging	\$ 4,369,700
Pharmacy and CRS	\$ 2,679,600
Kitchen, Bulk Store, Waste/Linen	\$ 4,571,800
Operating theatre (incl. MRI)	\$ 10,090,800
PICU beds	\$ 3,560,000
IPU bed	\$ 21,149,100
Outpatient clinic relocation	\$ 22,589,200
Administration relocation	\$ 13,262,900
Virtual hospital, telehealth, command centre	\$ 2,673,600
Net construction costs	\$ 84,946,700
Preliminaries and margins	\$ 21,661,409
Gross construction costs	\$ 106,608,109
Professional, statutory and client fees	\$ 22,380,402
FF&E	\$ 19,295,215
ICT	\$ 27,978,061
Contingency	\$ 52,878,536
Total project cost	\$ 229,140,323

Source: AECOM, 2022



5.2.2 QCH Precinct optimisation and growth – Option 2B

Option 2B – Partially Networked QCH Precinct Expansion

Description

This shortlisted option involves expansion across the QCH Precinct to address two thirds of the planned growth of inpatient services at QCH rather than across the network. This relies on the statewide network to support the remaining uplift of inpatient beds, theatres and associated support spaces.

Circa 18,500m² of refurbishment and fit out within the QCH Precinct to achieve:

- 60 additional inpatient beds
- 2 additional operating theatres
- 12 additional ED treatment spaces from expansion and reorganisation of the QCH ED. Reorganisation includes changes to the ED entry, waiting, triage and fast track areas to improve efficiency and improve space utilisation. Noting the gap of five short stay beds was not able to be resolved given the limited expansion space available
- 1 additional MRI and relocation of the interoperative medical image machine. Extended hours and more multi-purpose machines was agreed to manage the projected service gap through consultation
- Expansion of the pharmacy
- Redesign of the kitchen
- Relocation of the Surgical Day Unit and Surgical SSU to facilitate theatre expansion
- Relocation of significant amounts of outpatient clinics
- Relocation of Executive offices and Administration
- Expansion of telehealth and the operational / clinical command centre
- Virtual hospital space.

Consideration for additional car parking to be addressed through a Precinct wide strategy with the Mater.

Further details can be found in Appendix D.

Key dependencies

- System-wide infrastructure uplift of 24 inpatient beds and 2 operating theatres
- Purchase or lease of additional QCH Precinct facilities.

Advantages

- Allows some care to be provided closer to home (albeit less than Option 3B).

Disadvantages

- Major disruption and staging
- Relies on other system-wide projects to be funded and approved (albeit less than Option 3B).

Cost summary

Table 11 provides a summary of the estimated capital costs with further details provided in Appendix E. Costs have been estimated in FY22 dollars and exclude escalation, decanting, staging and car parking costs.

Table 11: Option 2B estimated capital costs (FY22 dollars)

Description	Capital cost (\$FY22 excl. GST)
ED and Medical Imaging	\$ 4,369,700
Pharmacy and CRS	\$ 2,679,600
Kitchen, Bulk Store, Waste/Linen	\$ 1,881,800
Operating theatre (incl. MRI)	\$ 10,090,800
PICU beds	\$ -
IPU bed	\$ 15,479,500
Outpatient clinic relocation	\$ 11,234,600
Administration relocation	\$ 13,262,900
Virtual hospital, telehealth, command centre	\$ 2,673,600
Net construction costs	\$ 61,672,500
Preliminaries and margins	\$ 16,959,938
Gross construction costs	\$ 78,632,438
Professional, statutory and client fees	\$ 16,507,427
FF&E	\$ 14,231,842
ICT	\$ 20,636,171
Contingency	\$ 39,002,363
Total project cost	\$ 169,010,241

Source: AECOM, 2022



5.2.2 QCH Precinct optimisation and growth – Option 3B

Option 3B – Fully Networked QCH Precinct Expansion

Description

This preferred shortlisted option involves expansion across the QCH Precinct with a high level of reliance on the statewide network to support the uplift of inpatient beds, theatres and associated support spaces. This enables more services to be delivered closer to home.

Circa 15,500m² of refurbishment and fit out within the QCH Precinct to achieve:

- 24 additional inpatient beds
- 2 additional operating theatres
- 12 additional ED treatment spaces from expansion and reorganisation of the QCH ED. Reorganisation includes changes to the ED entry, waiting, triage and fast track areas to improve efficiency and improve space utilisation. Noting the gap of five short stay beds was not able to be resolved given the limited expansion space available
- 1 additional MRI and relocation of the interoperative medical image machine. Extended hours and more multi-purpose machines was agreed to manage the projected service gap through consultation
- Expansion of the pharmacy
- Redesign of the kitchen
- Relocation of the Surgical Day Unit and Surgical SSU to facilitate theatre expansion
- Relocation of significant amounts of outpatient clinics
- Relocation of Executive offices and Administration
- Virtual hospital space and expansion of telehealth and the operational / clinical command centre.

Consideration for additional car parking to be addressed through a Precinct wide strategy with the Mater. Further infrastructure details can be found in Appendix D.

Key dependencies

- System-wide infrastructure uplift of 60 inpatient beds and 2 operating theatres
- Purchase or lease of additional QCH Precinct facilities.

Advantages

- Allows care to be provided closer to home
- Reduced disruption across QCH Precinct (compared to other options).

Disadvantages

- Relies on other system-wide projects to be funded and approved.

Cost summary

Table 12 provides a summary of the estimated capital costs with further details provided in Appendix E. Costs have been estimated in FY22 dollars and exclude escalation, decanting, staging and car parking costs.

Table 12: Option 3B estimated capital costs (FY22 dollars)

Description	Capital cost (\$FY22 excl. GST)
ED and Medical Imaging	\$ 4,369,700
Pharmacy and CRS	\$ 2,679,600
Kitchen, Bulk Store, Waste/Linen	\$ 1,881,800
Operating theatre (incl. MRI)	\$ 10,090,800
PICU beds	\$ -
IPU bed	\$ 5,371,200
Outpatient clinic relocation	\$ 11,390,000
Administration relocation	\$ 11,459,300
Virtual hospital, telehealth, command centre	\$ 1,710,000
Net construction costs	\$ 48,952,400
Preliminaries and margins	\$ 13,461,910
Gross construction costs	\$ 62,414,310
Professional, statutory and client fees	\$ 13,102,731
FF&E	\$ 11,296,491
ICT	\$ 16,379,912
Contingency	\$ 30,958,033
Total project cost	\$ 134,151,476

Source: AECOM, 2022



5.2.2 QCH Precinct optimisation and growth

Table 13: Summary of QCH Precinct shortlisted infrastructure options

Shortlisted option	Option 1B – Status Quo QCH Precinct Expansion	Option 2B – Partially Networked QCH Precinct Expansion	Option 3B – Fully Networked QCH Precinct Expansion
Description	Expansion across the QCH Precinct to address all of the planned growth of inpatient services rather than across the network. This option does not rely on the statewide network to support any uplift of inpatient services.	Expansion across the QCH Precinct to address part of the planned growth of inpatient services at QCH rather than across the network. This relies on the statewide network to support the remaining uplift (albeit less than Option 3B) of inpatient beds, theatres and associated support spaces.	This preferred option involves expansion across the QCH Precinct with a high level of reliance on the statewide network to support the uplift of inpatient beds, theatres and associated support spaces. This enables greater services to be delivered closer to home.
Key infrastructure changes*	<ul style="list-style-type: none"> 84 additional inpatient beds 12 additional PICU beds 4 additional operating theatres 12 additional ED treatment spaces through expansion and reorganisation of the QCH ED 1 additional MRI and relocation of the interoperative medical image machine Expansion, redesign and/or relocation of the pharmacy, kitchen and bulk store Relocation and/or reorganisation of several services such as the Surgical Day Unit, Surgical SSU, and Administration Expansion of telehealth, operational / clinical command centre, and virtual hospital space 	<ul style="list-style-type: none"> 60 additional inpatient beds 2 additional operating theatres 12 additional ED treatment spaces through expansion and reorganisation of the QCH ED 1 additional MRI and relocation of the interoperative medical image machine Expansion/redesign of the pharmacy and kitchen Relocation of outpatient clinics Relocation and/or reorganisation of a number of services such as the Surgical Day Unit, Surgical SSU, Outpatient clinics, Executive and Administration Expansion of telehealth, operational / clinical command centre, and virtual hospital space 	<ul style="list-style-type: none"> 24 additional inpatient beds 2 additional operating theatres 12 additional ED treatment spaces through expansion and reorganisation of the QCH ED 1 additional MRI and relocation of the interoperative medical image machine Expansion/redesign of the pharmacy and kitchen Relocation of outpatient clinics within QCH Relocation and/or reorganisation of a number of services such as the Surgical Day Unit, Surgical SSU, Outpatient clinics, Executive and Administration Expansion of telehealth, operational / clinical command centre, and virtual hospital space
Key dependencies	<ul style="list-style-type: none"> Purchase or lease of additional QCH Precinct facilities 	<ul style="list-style-type: none"> System-wide infrastructure uplift of 24 inpatient beds and 2 operating theatres Purchase or lease of additional QCH Precinct facilities 	<ul style="list-style-type: none"> System-wide infrastructure uplift of 60 inpatient beds and 2 operating theatres Purchase or lease of additional QCH Precinct facilities
Advantages	<ul style="list-style-type: none"> Does not rely on other system-wide projects to be funded and approved 	<ul style="list-style-type: none"> Allows some care to be provided closer to home (albeit less than Option 3B) 	<ul style="list-style-type: none"> Allows care to be provided closer to home Reduced disruption across QCH Precinct (compared to other options)
Disadvantages	<ul style="list-style-type: none"> Care is not provided closer to home Significant disruption and staging 	<ul style="list-style-type: none"> Major disruption and staging Relies on other system-wide projects to be funded and approved (albeit less than Option 1) 	<ul style="list-style-type: none"> Relies on other system-wide projects to be funded and approved
Est. cost (FY22)	<ul style="list-style-type: none"> \$229 million 	<ul style="list-style-type: none"> \$169 million 	<ul style="list-style-type: none"> \$134 million

*Physical capacity changes

Defining the vision
 Strategic context and methodology
 Current infrastructure
 Case for change
 Response strategies
 Project roadmap



5.2.3 Community-based infrastructure

Overview of the community based infrastructure response strategies.

Context recap

As outlined in Chapters 3 and 4, **community-based infrastructure** is generally **aged and not fit-for-purpose** or designed to support contemporary service models. Current community facilities have been used for many years and, during this time, models of care and design standards have changed to the extent that they cannot be modified to meet current requirements. In addition, CHQ's current community-based infrastructure is a mix of owned and leased sites, as well as the use of other HHSs and partner organisations' facilities (which come with their own challenges and opportunities).

The concept of small centres, primarily in converted houses, has enabled services to be offered closer to home. The need to deliver care closer to home is still relevant, however, a new solution for the supporting infrastructure is required to deliver services in a contemporary, compliant and safe environment for staff and consumers.

Infrastructure response options

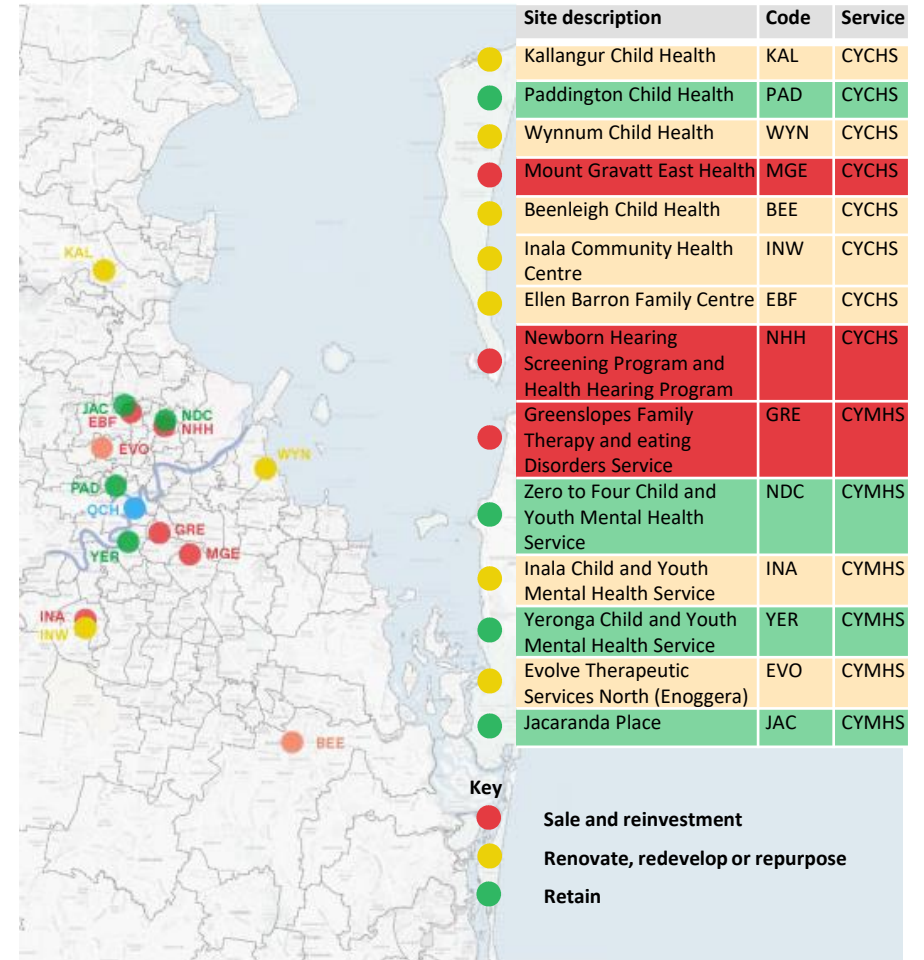
CHQ operates from 88 community locations across primarily SEQ – 77 of these sites are not owned by CHQ and 87% of the non-owned sites are not leased on commercial terms. The high proportion of non-owned facilities without a clear lease agreement (which is atypical across the state) presents operational risks as facilities can be reclaimed or repurposed resulting in CHQ services being displaced or operating from facilities which are not fit-for-purpose.

A mixed approach to ownership of infrastructure (owned and leased) will continue to be required. Key recommendations include:

- **Sale and reinvest.** Consider disposing of certain owned infrastructure to provide better fit-for-purpose infrastructure in areas of need. Many of the existing owned assets are not suitable for redevelopment and are not necessarily located in the most suitable areas based on need.
- **Renovate and/or redevelop.** For select owned assets, consider renovation and/or redevelopment to provide better fit-for-purpose infrastructure in areas of need.
- **Lease.** This will continue to play a key role in the delivery of services for CHQ especially in facilitating flexibility to continue to deliver services in response to changing needs and demographics. A review of the leased sites is recommended given the volume and the varied nature of agreements and terms, with a view to standardising and streamlining the various leasing arrangements in place.

A more detailed review of the leasing and ownership strategy and plan is recommended to be completed as a next step to further validate and test the proposed sites for sale, renovation and leasing. Figure 30 provides initial recommendations based on the community sites assessment through the Master Plan process.

Figure 30: Recommended strategy for CHQ community infrastructure assessed





5.2.3 Community-based infrastructure

Overview of the community based infrastructure response strategies.

Infrastructure response options

A combination of services and multi-disciplinary teams are proposed to be collocated within the community setting. These may include (but are not limited to) CYCHS, CYMHS, outpatients, researchers and partner organisations such as non-government organisations, primary health care, education providers, etc.

Consultation identified that a number of current QCH-based outpatient services which have the potential to be provided within the community setting. The characteristics of these services includes:

- Limited or no access required to specialist equipment / infrastructure / testing and/or other speciality services typically available in an inpatient setting.
- Sufficient volume of consumers (and/or regularity of check-ups or attendance at a physical clinic) to enable a suitable number of clinics in the community to support efficient scheduling and limit travel time between facilities.
- Workforce rostering and availability to deliver a suitable number of clinics in the community. Typically, services where staff have limited requirements to provide cover to inpatient services; and/or high volume, larger specialties with larger workforces (that can cover multiple locations – i.e. not single-Consultant sub-specialties where hospital cover is required as well).

Whilst further consultation and detailed planning is required, the master plan consultation identified potential opportunities to explore the suitability of providing part or all of the following services in a community setting - medical outpatients (e.g. dermatology and endocrinology), child protection, cardiac outpatients, allied health (e.g. audiology, physiotherapy and psychology), oral health, neurology metabolic, child development, rehabilitation and podiatry.

The infrastructure responses proposed for the future community-based facilities are:

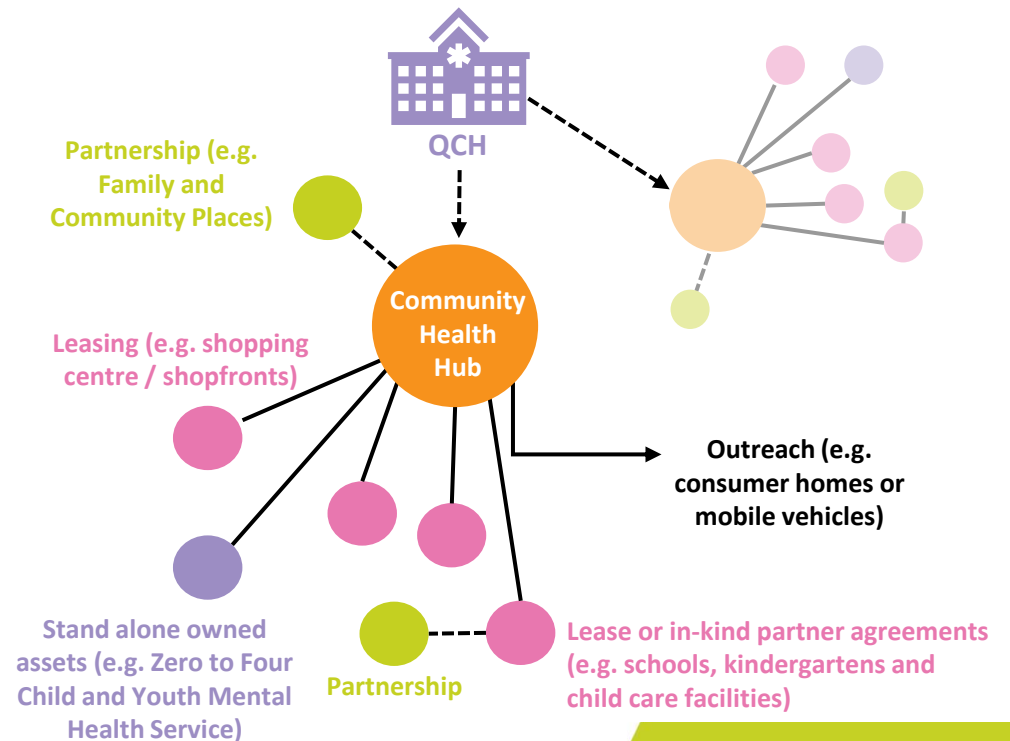
- **Community Health Hubs** which include a combination of flexible and suitable community clinical spaces, work spaces for staff and partner spaces across a number of CHQ services. These places could continue to expand into community areas and be supported through referral where appropriate.
- **Infrastructure to support “services in place”** which will require a mix of places such as shopfronts, schools, mobile vehicles, etc. These are most likely to be leased infrastructure due to the number and size, and allow for flexibility to change based on service models and community need / demographics.

Figure 31 provided a visual representation of this concept with further details of the responses outlined on the follow pages.

Infrastructure response options (continued)

As it is acknowledged that improving the health and wellbeing of children and their families is not CHQ’s responsibility alone, partnering to provide community health services is key. It is envisioned that the hubs and places will likely be a partnership with a combination of non-government organisations, primary health care, the private sector, education providers, and other human services organisations. Taking a partnership approach will mean, in some instances, CHQ will lead (e.g. CHQ will own and run the facility and lease / provide space to partners), and support in others (e.g. lease / occupy partner space).

Figure 31: Concept of the hub and spoke approach





5.2.3 Community-based infrastructure

Overview of the infrastructure response strategies.

Community Health Hubs

Several Community Health Hubs are proposed to be developed in strategic locations throughout the greater Brisbane area. The population growth corridors over the next 15- years are:

- South Western suburbs such as Ipswich and Inala
- Southern suburbs such as Logan and Beaudesert
- Northern suburbs such as Caboolture and Morayfield
- Eastern suburbs such as Redland Bay and Wynnum
- Central suburbs within the inner city of Brisbane.

Noting that there are also population growth corridors outside of greater Brisbane such as the Sunshine Coast and the Gold Coast regions.

Figure 32 shows the proposed locations which have been based on the need for services (population growth, demographics and demand) and the current asset locations and condition. Hubs will enable services to be consolidated where appropriate and provide a base from which to support outreach and smaller clinics.

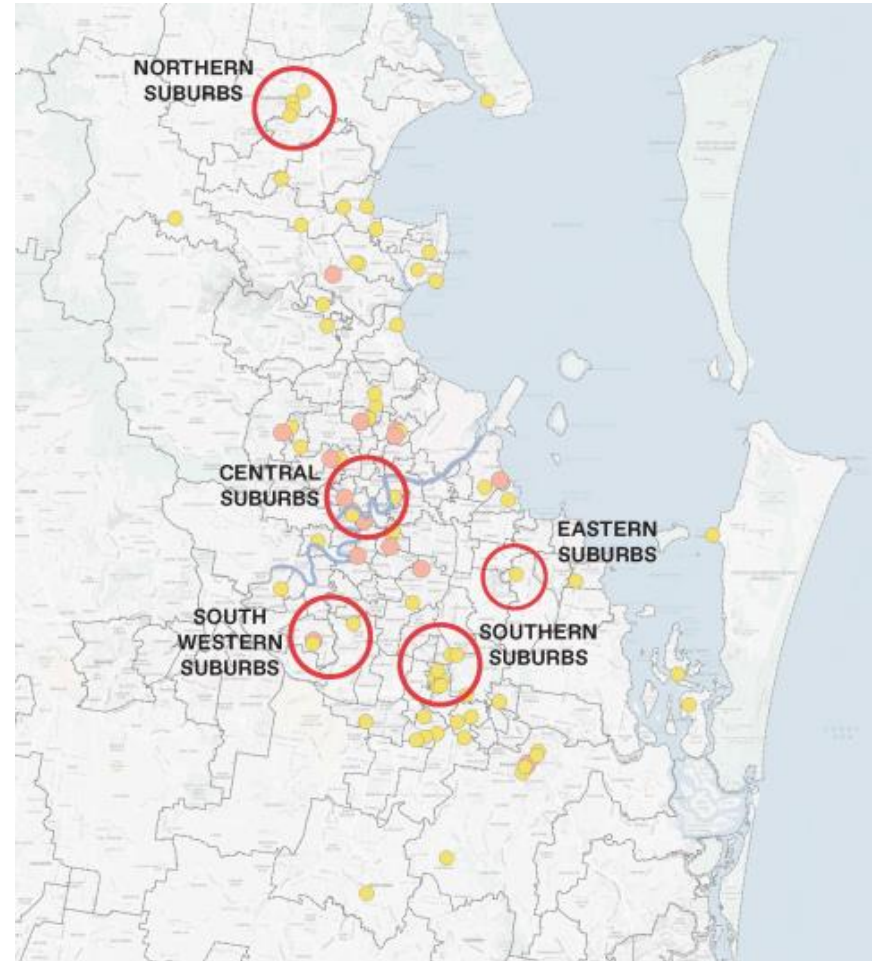
The construction cost of the hubs could be partially funded by the sale of existing buildings, which could be progressively sold on the basis of their suitability and value. Figure 30 (on page 53) identifies which of the current CHQ community assets could be sold to help facilitate investment in new facilities.

Hubs could be constructed in response to need and availability of funding. They can be prioritised in response to the demand for services and the condition and appropriateness of existing facilities. Key considerations for prioritisation in future planning stages could include the condition of existing infrastructure, health need, partnership opportunities, etc. Further detailed planning and consultation relating to community health services is required.

Potential benefits of the Community Health Hubs generally include:

- Better experience and engagement with consumers and families
- Improved accessibility and visibility for consumers and families
- Improved health outcomes and personal safety
- Increased partnership and collaboration to provide better outcomes
- Better utilisation of resources.

Figure 32: Proposed locations for Community Health Hubs





5.2.3 Community-based infrastructure

Overview of the Community Health Hub infrastructure response strategy.

Community Health Hubs

While the primary focus is on community health services, flexible, bookable spaces for others such as acute services, corporate services, and Executive may be considered.

The types of infrastructure functions within the hub may include:

- Welcoming entry with café and outdoor waiting areas
- Suitable waiting space that is comforting, easily accessible and also provides visibility for staff
- Separate discrete entry for CYMHS as required
- Provision of breakout spaces to work with and provide relief from stressful treatment
- Multi-purpose clinic / consulting spaces for flexible use by different community teams
- A range of bookable meeting and research, education / training spaces that could be used by different groups
- Tenant space such as General Practice (GP) type clinics, non-government organisations, research and education partners, etc.
- Open plan workspace areas with desks and offices delineated from the clinic / public-facing areas
- Shared and bookable telehealth spaces
- Adequate storage for different teams to make the areas more multi-disciplinary and flexible
- External informal meeting and play areas with adequate shade, seating, privacy and gardens for families
- Adequate car parking for visitors, staff, fleet vehicles and large vehicles such as community visit vans.

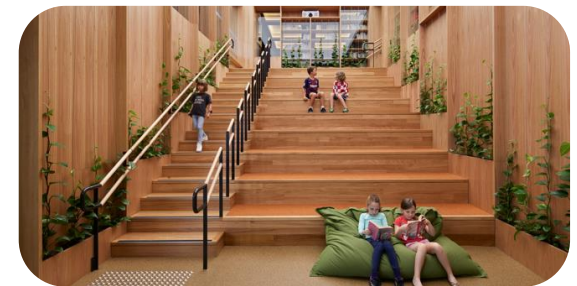
Welcoming and inviting – Welcoming and inviting entry and waiting areas with outdoor waiting and play areas.



Ease of access – parking, disability compliance, and public transport.



Spacious, friendly and compliant – family friendly environments with a mix of formal / informal and inside / outside space, natural light, etc.





5.2.3 Community-based infrastructure

Overview of the infrastructure response strategies.

Cost estimate overview

While several potential services have been identified through initial master planning consultation (refer page 54), further planning will be required to determine the exact services and infrastructure required for the Community Health Hubs. Two example schedules of accommodation have been developed (refer Appendix D) to inform a low and high cost estimate. Table 14 provides a summary of the types of areas, functions and car parks. The key difference is that Option 2 includes additional consultation and meeting rooms and space for partner organisations such as education and other health providers. Table 15 provides an overview of the cost summary for the two options. Costs have been presented per facility, noting the recommendation to develop several facilities across the 15-year time horizon. The cost estimates are presented in FY22 dollars and exclude land acquisition and demolition costs. Further details of the cost assumptions can be found in Appendix E.

Table 14: Summary of scheduled area and car parking

Type of area	Description of functions	Area (m ²)	
		Option 1	Option 2
Public facing areas	Café, entry, multi-purpose clinic rooms, CYMHS treatment rooms, meeting rooms and amenities.	2,250	2,000
CHQ staff areas	Workstations and offices, telehealth spaces, research (non-laboratory), education and training rooms, storage, staff amenities.	2,250	2,000
Partner areas	GP clinic, NGO space, multi-purpose clinic, research and education partner space, amenities.	-	4,000
External areas	Garden with seating and shade, informal consultation areas, play space.	500	500
Total area (m²)		5,000	8,500

Type of area	Description of functions	# of parks	
		Option 1	Option 2
Car parking	At-grade car parking spaces	180	325
Mobile vans	Enclosed shed	2	2

Source: BVN, 2021

Table 15: Community Health Hub cost estimate range

Description	Estimated cost per facility (\$FY22 excl. GST)	
	Option 1	Option 2
Clinic areas	\$ 4,650,000	\$ 4,055,000
Staff areas	\$ 3,520,000	\$ 3,425,000
Partner space	\$ -	\$ 3,490,000
Shell and core	\$ 10,680,000	\$ 16,780,000
Travel, engineering and plant	\$ 1,230,000	\$ 2,210,000
Outdoor areas	\$ 660,000	\$ 660,000
At-grade car park and exterior shed/garage	\$ 960,000	\$ 1,685,000
Net construction costs	\$ 21,700,000	\$ 32,305,000
Preliminaries and margins	\$ 4,562,800	\$ 6,736,400
Sub-total gross construction costs	\$ 26,262,800	\$ 39,041,400
Professional, statutory and client fees	\$ 5,311,855	\$ 7,842,286
FF&E	\$ 4,579,604	\$ 6,761,210
ICT	\$ 6,640,426	\$ 9,803,754
Contingency	\$ 12,550,406	\$ 18,529,095
Total project cost	\$ 55,345,092	\$ 81,977,744

Source: AECOM, 2022



5.2.3 Community-based infrastructure

Overview of the community-based “services in place” infrastructure response strategy.

Infrastructure to support “services in place”

There are several community services which lend themselves to best be delivered “in place” in the community. Examples of services may include but are not limited to:

- CYCHS - Child Health Services e.g. self-weigh facilities, drop-in clinics, key age child health checks and parenting groups; school-based programs
- CYMHS – Day programs, community clinics, outreach services, Evolve Therapeutic Services.

A mix of places / settings is recommended to cater for consumer and family needs and preferences, and different service requirements. The areas of need from a population growth perspective are identified on page 55. The types of setting are likely to be places that are in close proximity to existing services that families are already attending to enable ease of access. These may include but are not limited to:

- Shopping centres and shopfronts
- Schools, kindergartens and child care facilities
- Other government facilities such as libraries
- In homes / private residences
- Family and Community Places (similar to Yarrabilba). These are spaces where fun and flexible health, education and social programs and services support the growth and development of children, young people, and families.

Lease arrangements (e.g. shopping centre) or a shared access arrangement for use outside or during hours (e.g. schools, kindergartens and child care facilities) are likely to be more suitable than owned infrastructure as they allow for greater flexibility to change as community demographics and needs change. Partnering with other organisations will be key to the “in place” infrastructure. Taking a partnership approach will mean in some instances CHQ will lead (e.g. CHQ will lease the facility), and support in others (e.g. occupy partner space). Cost estimates for any lease arrangement or fit out has not been completed for the Master Plan process.

In most instances, the infrastructure required is less purpose-built with key equipment being mobile and easy to transport between locations. Key infrastructure considerations tend to be more around privacy and safety.

For services requiring more purpose built infrastructure, these could be delivered through mobile vans. The mobile vans also have reach to support additional settings such as carnivals, sporting events, etc.

Through the master plan consultation, child health and child development services were identified as potential services that could benefit from mobile vans. Secure car parking for the mobile vans have been costed in the Community Health Hub cost estimate, however, costs for the mobile van purchase and fit out have not been estimate. An example of this model in practice is St Vincent’s Health Sydney who has recently announced a new mobile integrated care clinic to take specialist care to vulnerable populations.

Figure 33: Example images of “in place” infrastructure



Schools



Community infrastructure such as library or community centre



Kindergarten or child care facilities



5.2.4 Research and education infrastructure

Overview of the research and education infrastructure response strategies.

Research context

The CHQ Research Strategy 2018–2025 identifies three themes to encompass research at CHQ: prevention and early detection, better care and health services and systems research. The strategy outlines the importance of working with research partners to:

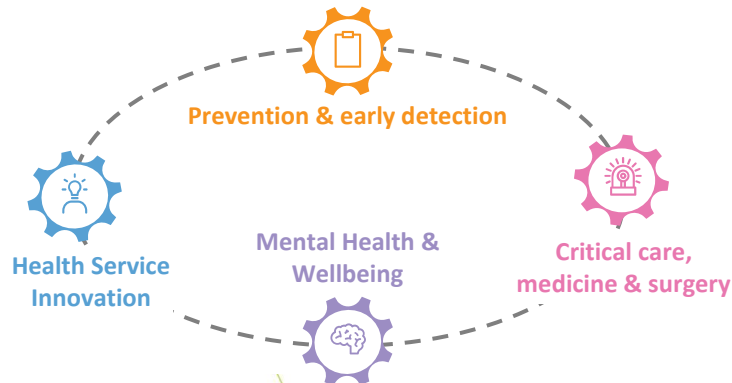
- Develop a dynamic research culture
- Build capability and capacity where research is embedded into service delivery
- Continue to develop existing research strengths
- Be future focused around emerging health needs and research related support
- Facilitate emerging research groups
- Foster the development of future researchers.

As outlined in Chapter 3, CHQ's dedicated research infrastructure is located at the CCHR. The facility leverages partnerships between CHQ, the UQ and the QUT and works in collaboration with the Translational Research Institute.

Education context

CHQ is the primary provider of paediatric training and education for healthcare professionals in Queensland. Medical, nursing and allied health education is supported at CHQ with extensive, co-ordinated programs with the necessary accreditation.

Figure 34: CHQ research focus areas



Infrastructure response options

It is understood there are some CCHR expansion opportunities which would require further investigation. These include:

- **Conversion of level 9 into wet laboratory space** (from administration / corporate service space). From initial consultation, it is understood that the CCHR may have been constructed with the supporting infrastructure in place. This would require further investigation. Existing corporate services located on level 9 would need to be relocated to a new facility to facilitate this conversion.
- **Expansion of CCHR above the loading dock and/or onto the adjacent undeveloped land**, however, further investigation and feasibility is required. To make the areas useable, it would likely require the façade adjacent to the loading dock to be removed and reconstructed, which would require staff to be temporarily relocated while work was being completed. Similarly, the small and irregular shape of the undeveloped land adjacent to the CCHR and QCH provides limited opportunity for use due to considerations such as set back from the street and existing buildings' aspects (ventilation, fire safety, etc.). The expected area from the CCHR and adjacent land expansion is unlikely to be easily developed with significant disruption across the Precinct and is likely to be costly for minimal area gained.
- **Reorganisation of existing internal areas** to improve the safety and efficiency of the space utilisation. This could include redesigning and refitting out certain areas to increase the number of workstations or usable space.

No cost estimate has been developed for the above CCHR expansion opportunities.

There are opportunities to further embed research, education and training within infrastructure to support the integration with clinical practice. It is recommended that any new space (refurbished or new) includes the allocation for contemporary education and training facilities and space for researchers (non-laboratory space). This includes refurbishment within QCH and new facilities such as Community Health Hubs which has been factored into these cost estimates.

A new research strategy is currently under development. Once this new strategy is finalised, a more detailed research infrastructure strategy and response may be required to support this. As the existing facilities and partnerships are already relatively extensive, it may be the case that there is not significant infrastructure requirements, however, this will need to be confirmed.



5.2.5 Corporate services infrastructure

Overview of the corporate services response strategies.

Context recap

As outlined in Chapters 3 and 4, **corporate services infrastructure** is generally located within QCH, CCHR, or leased community sites. Given the site constraints, particularly at the QCH Precinct, there is often competing priorities on which services require close proximity to QCH. Generally, current working arrangements see corporate services teams allocated to locations with dedicated workstations and office space. The COVID-19 pandemic has shown more flexible working arrangements are possible and suitable for certain teams and provide an opportunity to explore these arrangements further on a more permanent basis. It has been noted that teams could benefit from greater flexibility of workspaces, which would allow for better use and utilisation of space and greater cross collaboration between teams.

The COVID-19 pandemic has resulted in the largest work experiment in modern history. As a result, CHQ will need to re-consider future work models. In the context of corporate services spaces, considering how work models can be reimagined to provide people with choice and autonomy around when and where, and how and what work is completed. Shifts in the ways of working will change future infrastructure requirements.

Future work models redesign benefits

- **Productivity anywhere and anytime** – A 2019 study⁶ found that 79% of employees indicate they are more productive and focused when working remotely.
- **Workplace as a vibrant social hub** – The purpose of the physical office is being fundamentally redefined as a space to collaborate, connect, innovate, and learn.
- **Improved wellbeing as a core tenet of employment** – Organisations need to redesign how, when and where work is delivered to drive employee wellbeing and engagement. By focusing on designing work around improved wellbeing outcomes, organisations are contributing to healthier, happier and more engaged employees.
- **Work through fluid team networks** – Redesigning how work is delivered, moving from traditional structures to diverse, cross-functional teams connected by a specific customer focused mission. Companies such as Google, Cisco and Spotify embody teaming and networking, with Spotify organising around ‘squads’ focused on a specific customer or product outcome. By focusing less on who people work for and more on who people work with, ideas and change can drive innovation⁷.
- **Empowered employees driving decisions** – Devolved decision rights and empowered teams is a key attribute of inclusive leadership and will improve performance as well as allowing the full benefits of flexible work models to be realised.
- **Organisational culture and community is borderless** – The most successful future organisations will be those that actively seek to design employee experiences, promote a culture of trust, and actively support hybrid ways of working.

Infrastructure response options

The vast majority of corporate services staff are physically located in South Brisbane and surrounding suburbs – either at QCH, CCHR, Grey Street (leased office accommodation), or Russell Street in South Brisbane (leased office accommodation). While this provides proximity to QCH, it is a central location with heavy traffic congestion, high lease costs (pre-COVID-19) and limited parking but good public transport routes.

In the future, flexible space will be provided at the new Community Health Hubs, which will provide the option for staff to work closer to home, whilst also maintaining appropriate space in proximity to QCH.

It is proposed that optimisation and consolidation of office-based services aligned to need be considered in conjunction with flexible working strategies (e.g. working from home, CHQ-premises or partner sites) and other workforce model changes. The scale of site consolidation (lease and owned) opportunities could include areas from:

- Grey Street (South Brisbane) leased office accommodation – up to ~3,500m² (based on total floor area occupied)
- Russell Street (South Brisbane) leased accommodation – up to ~1,500m² (based on total floor area occupied)
- QCH Administration and Executive offices – between ~5,500m² and 6,500m² (based on user group consultation).

Through the Master Plan consultation, it was identified a number of corporate service functions do not need direct proximity to QCH and would be amenable to being accommodated in alternative locations. These may include parts or all of services such as ICT, finance, people and culture, strategy and planning, legal, audit and risk, and communications and engagement. As part of the next stage of planning, a review and further detailed assessment would be required to confirm.

The cost estimate for QCH options captures the fit out costs of QCH displaced services and the Community Health Hub cost estimates captures ~800 of staff workstation / office space per hub, which equates to approximately 4,000m² across five hubs. On finalisation of the new research strategy, there could be further opportunities to relocate CCHR level 9 services, however, this has not been costed.

It is proposed that a detailed review of current utilisation of workspaces is conducted and consideration given to future ways of working (examples outlined in Chapter 4) and how this would impact infrastructure requirements into the future.

6. Owl Labs, 2019, “State of Remote Work 2019”

7. Deloitte, 2018, “The Adaptable Organization: Harnessing a networked enterprise of human resilience”



5.2.6 Digitally-enabled care

Overview of the digitally-enabled care response strategies.

Context

The COVID-19 pandemic has resulted in many organisations having seen “two years’ worth of digital transformation in two months” (Microsoft CEO Satya Nadella). Digital transformations, previously taking years to complete have occurred in months. Automation and analytics, already rapidly on the rise, have seemingly boomed overnight to support work safely and deliver services in our new digital world.

Queensland Health and CHQ has responded to COVID-19 with the rapid adoption and expansion of digital service delivery. Consumers, clinicians and workforce adopted and benefitted from these virtual models. There is a unique opportunity to build on this success, and the learnings from peers, to further innovate models of care and provide care that is personalised, standardised, proactive and closer to home, across the State.

The draft Queensland Health Digital Strategy 2031 identifies the opportunity to:

- Use digital to empower consumers so that they can control their health information
- Improve equity of access to deliver care that is closer to home
- Support clinicians with the tools and insights to make better decisions.

The Queensland Health Virtual Healthcare Strategy transformation initiatives are outlined in Figure 35.

Figure 35: Queensland Health Virtual Healthcare Strategy transformation initiatives



Virtual healthcare club – Bringing together Specialists and other Health Professionals within the Virtual Healthcare Network to provide advice and support to Health Assessors (within the Digital Front Door), and facilitate the provision of virtually enabled services, e.g. virtual acute models, central intake, home model of care, and remote monitoring.



Scale existing initiatives – Where effective, it is critical to leverage and build on existing capabilities to reduce duplication and deliver quick wins aligned to system and service priorities and needs.



The Digital front door – A single interface for consumers to interact with all aspect of the care continuum, streamlining access to information and services. It enables risk stratification and predictive healthcare interventions at a population and individual level linked to evidence-based healthcare pathways.

Response overview

Several technology and digital challenges and opportunities identified include a mix of physical infrastructure and enabling ICT infrastructure. The responses include:

- **Replacement of core ICT infrastructure** such as at-risk clinical hardware, critical software, firmware engagements and upgrades to maintain clinical system operability.
- **Continue to operate and grow virtual care models** supported by appropriate infrastructure. These models could include those implemented during the COVID-19 pandemic, or new models. Examples include:
 - **Telehealth** – Specialist outpatient appointment conducted via telehealth supported in a virtually enabled environment freeing up physical outpatient consultation space to better use infrastructure.
 - **Provider portal** – A digital portal to facilitate clinician to clinician, and provider to provider communication across the care continuum within the hub region – this includes the coordination of requests for specialist advice, which is critical to supporting more care within the community.
 - **Remote monitoring** – Ongoing monitoring of feedback and data collected through patient wearable devices and sensors, allowing for behavioural or medical intervention as required. It includes 1) remote monitoring for inpatients in home and hospital settings (i.e. monitoring of vitals), as well as 2) ongoing monitoring for vulnerable cohorts such as those living with chronic disease.
 - **Home care** – Provides nursing oversight and clinical governance (medical) for all home care / hospital substitution models delivered within regions (i.e. HiTH, HiTNH etc.) facilitated via a virtual hospital. Direction and communication for HHS-based on-the-ground nursing teams to support patients admitted in hospital substitution models. Ongoing monitoring and escalation of patients.
 - **Virtual hospital acute models** – Facilitation of virtual acute care models across the state, within a virtual hospital, that provides specialist capability support to increase self-sufficiency of regional and remote facilities and allow consumers to be cared for closer to home.
 - **Clinical command centre** – A centralised operational centre in which real-time and predictive analytics are aggregated from various data sources and used as part of a coordinated approach to manage logistics, provide enterprise visibility, and improve coordination for multiple departments within a single hospital or across multiple facilities within a health system.

The schedules of accommodation developed for QCH and Community Health Hub options include physical space allocations and an ICT capital cost allowance allocation for a virtual hospital, telehealth and clinical command centre as part of the cost estimate (refer Appendix D and E).



5.2.6 Digitally-enabled care

Clinical Command Centre case study.

What is a Clinical Command Centre?

It is a centralised hub made up of an interdisciplinary team coordinating the day-to-day activities of a health system by planning for, and responding to, the dynamic needs of its patients, community, clinicians and staff. A Clinical Command Centre is about:

- Unifying around a timely, cohesive patient experience
- Breaking down silos and enabling situational awareness and operational foresight to drive long-term improvements
- Getting the right patient to the right facility, at the right time, by the right mode of transport — the first time.

It can provide alignment and transparency across the care continuum⁶, including:

- **Patient access.** Rapidly evaluates and documents patient referral and transfer requests, coordinates clinician hand-offs and dispatch, and communicates with referring and accepting care teams so that consumers can transition to new care settings, have a positive experience, and receive timely access to the care they need.
- **Dispatch.** Works hand-in-hand with access team members to ensure timely patient transport by facilitating the coordination of ground and air transport based on requests and patient conditions.
- **Patient registration.** Performs registration activities for patients entering through the Clinical Command Centre to promote expedient, effective patient access. Updates and maintains patient information as necessary throughout the continuum of care.
- **Patient placement.** Ensures that patients are placed in the right bed, facilitates timely discharges, sets resource priorities to free up needed capacity, and manages patient throughput so the system can meet the current and projected demand.
- **Transport.** Works closely with patient placement to ensure optimum throughput, ensures timely bed cleans and patient transport, and tracks to improve performance.
- **Leadership.** Manages overall system operations using data and analytics to predict and prevent bottlenecks and constraints, rapidly see and solve problems, drive accountability, ensure compliance and timely reporting to key stakeholders, provide visibility to C-suite to support strategic business planning.
- **Telemedicine.** The use of telecommunication and information technology to provide clinical health care to overcome distance barriers and to improve access to medical services that are often not available in distant rural communities.

- **Case management.** Responsible for utilisation review of non-emergent transfers and direct admissions to ensure appropriate patient status upon admission. Works closely with staff and key stakeholders to maintain appropriate level of care status and movement of patients. Actively reviews patient information to ensure efficient, effective flow of patients throughout the continuum of care.
- **eICU.** A method of delivering care to critically ill patients in remote hospitals by critical care specialists who work in a central location. Data on patients (including historical information, physical exam findings, hemodynamics, laboratory test results, and radiologic images) sent from satellite hospitals are transmitted to and from the bedside to eICU staff who can then adjust care plans accordingly.

Why implement a Clinical Command Centre?

As care delivery becomes more complex, finding ways to coordinate patient care across the continuum is one of the most important challenges facing healthcare organisations today and into the future. Studies have shown that command centres can drive significant, positive outcomes including improved efficiency, increased revenue, and enhanced patient safety and satisfaction⁸. Organisations that have implemented operational command centres report achieving⁹:

- **96% improve patient flows.** Improved efficiency in placing, transferring, or diverting patients. Quick dissemination of critical information, enabling smoother patient transportation and improved bed-capacity management.
- **78% financial gains.** Increased patient retention and referrals and fewer unseen patients. Lower costs due to reduced length of stay and staffing inefficiency.
- **74% improved patient experience.** Reduced wait times through more streamlined (and therefore improved) care resulting in higher patient satisfaction.
- **65% improved staff experience.** Improved communication, collaboration between teams and aligned goals. For some, visibility into staff-scheduling inefficiencies enables implementation of acuity-based staffing.
- **61% actionable and transparent data.** Transparent view of and quick access to aggregated data, leading to specific, actionable insights. For some, ability to use real-time and/or predictive analytics.

8. TeleTracking, 2018, "How health system command centres are fulfilling the mission. No patient waits"

9. KLAS Performance Report, 2018, "Operational Command Centres 2018".

06 Project roadmap



Project roadmap overview

Overview of the project roadmap section and typical infrastructure planning cycle.

Overview

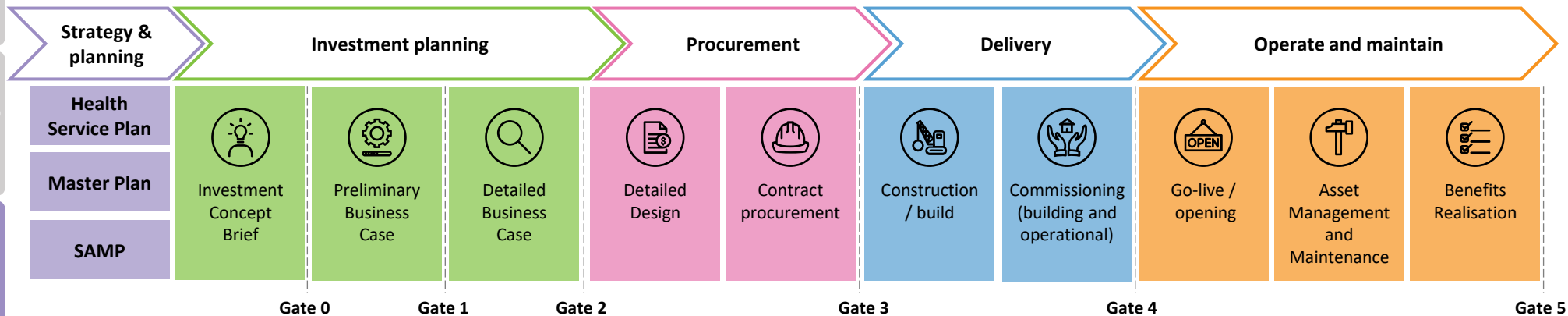
This section provides an outline as to how the infrastructure response strategies identified in Chapter 5 translate into projects for CHQ to progress. This section includes:

- Overview of the infrastructure planning cycle and previous CHQ project lessons learnt
- Future infrastructure planning considerations including delivery considerations (such as site ownership structure and operational arrangements) and consumer and family-centred infrastructure considerations
- Future projects list of priority projects and a roadmap over the 15-year time horizon.

Infrastructure planning cycle

An outline of the typical infrastructure planning cycle is outlined in Figure 36. Certain projects (e.g. above approximately \$10 million) are likely required to follow a number of investment planning frameworks prior to procurement and delivery (such as the Business Case Development Framework, the Queensland Health Investment Management Framework, and Queensland Treasury Project Assurance Framework). The infrastructure planning and delivery lifecycle for major projects can take upwards of 5 years to deliver. For complex high value projects, the delivery horizon may be 5 to 10 years. As such, investment planning for a number of the identified projects may need to commence in the immediate or short-term.

Figure 36: Summary of the infrastructure planning cycle



Lessons learnt

Establishing certain aspects early on in the planning lifecycle, particularly if there is a partnership approach, is key to a project's success. Several lessons learnt themes from previous CQH infrastructure projects have been outlined and should be considered on commencement of new projects. These include:

- Project and operational governance framework and structure
- Clear stakeholder roles and responsibilities, including clearly defined scope across partner organisations
- ICT approach to infrastructure and ongoing maintenance to ensure ease of operation across partner organisations
- Workforce approach and arrangements to support flexible workforce models and operations
- Embedding consumer and family representation (as appropriate) for project planning and delivery to ensure decisions are consumer and family focused
- Aligning infrastructure to service need.

Defining the vision
 Strategic context and methodology
 Current infrastructure
 Case for change
 Response strategies
 Project roadmap



Future projects

Defining the vision
 Strategic context and methodology
 Current infrastructure
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 Project roadmap

Summary of proposed initiatives to progress the Master Plan service and infrastructure options

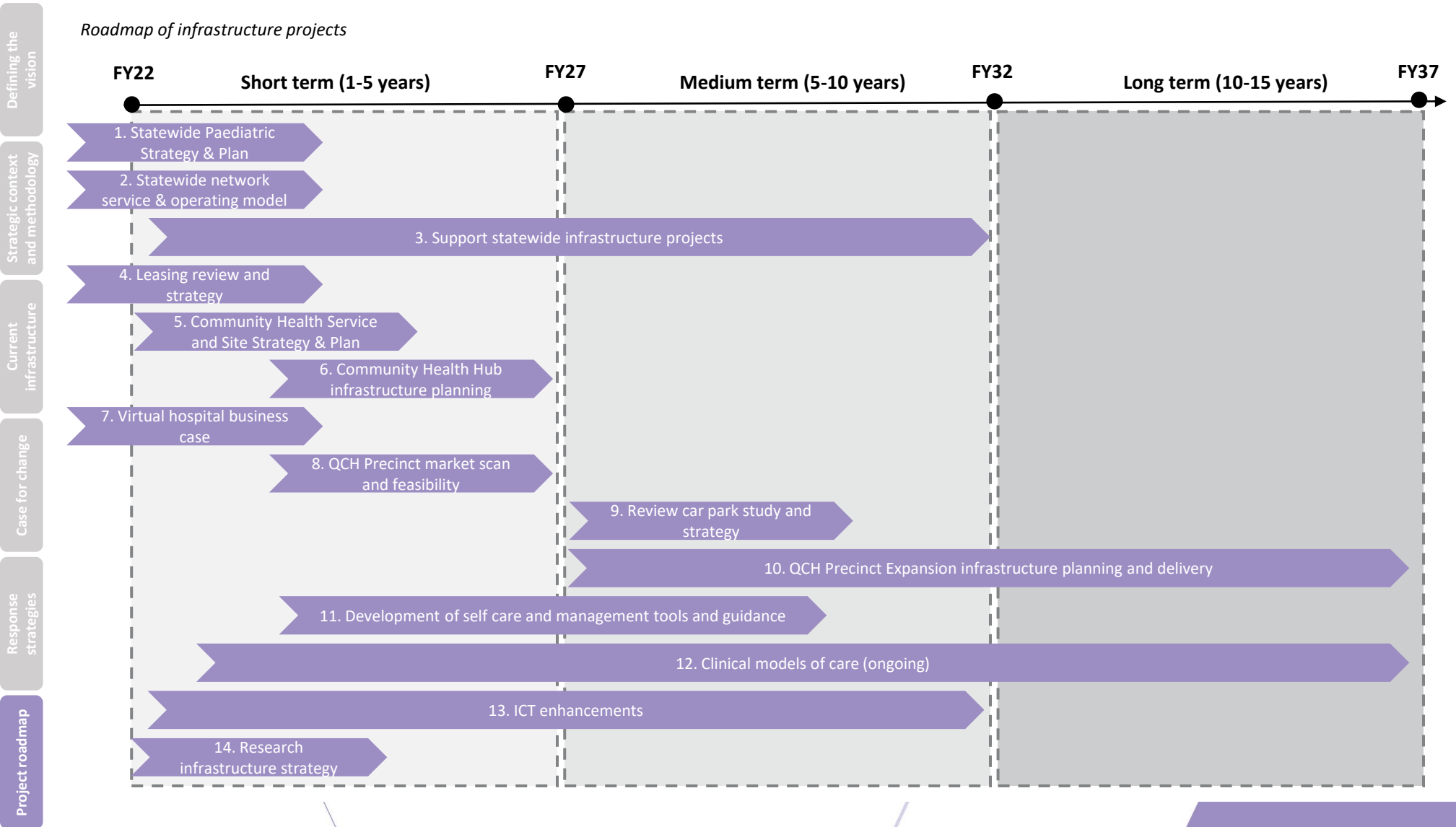
#	Initiative	Timeframe	Service	QCH	Comm	S/W	R&E	Corp	Tech
1	Develop a Statewide Paediatrics Health Services Strategy and Plan (including infrastructure plan) with an emphasis on cultural and age-appropriate care.	Immediate	✓	✓	✓	✓	✓	✓	✓
2	Develop the service and operating model (including governance, roles and responsibilities, etc.) for the statewide networked approach to service delivery (in collaboration with the Department of Health, other HHSs, etc.).	Immediate	✓	✓		✓			✓
3	Support / advocate for other HHSs (in particular Metro North, Metro South and West Moreton HHSs) in development of infrastructure projects that include expanded capacity for paediatrics.	Immediate - medium term		✓		✓			
4	Review of leasing strategy, comprising community and corporate services (including consolidation and relocation where recommended).	Immediate			✓			✓	
5	Develop a detailed Community Health Services and Site Strategy and Plan. Considering sale and reinvestment, development, renovation, leasing, and/or retention of existing infrastructure. For renovation and development opportunities as well as proposed Community Health Hubs, consider planning, scope of services, and locations.	Short term	✓		✓				
6	Commence infrastructure planning processes (e.g. Gate 0 Investment Concept Brief and business cases) for the development of Community Health Hubs.	Short term			✓		✓	✓	
7	Develop a Business Case for implementation of a Virtual Hospital for paediatrics (including documentation of service model, workforce, operating model, funding).	Immediate	✓	✓					✓
8	Undertake a market scan and feasibility of sites within QCH precinct area to support moving services out of QCH (that need to stay in close proximity).	Short term		✓				✓	
9	Update car park demand study and strategy (particularly for QCH Precinct) to align with projections and responses.	Medium term		✓				✓	
10	Commence infrastructure planning process for the QCH Precinct Expansion project (e.g. Investment Concept Brief Gate 0 and business cases).	Medium term		✓				✓	✓
11	Development / review and update of self-care and management tools and guidance for staff and consumers.	Short - medium term	✓	✓	✓				✓
12	Ongoing review and update to clinical models of care (e.g. shift to ambulatory, same day, home-based care).	Ongoing	✓	✓	✓				
13	Review of and update to ICT requirements (enhanced capability to support virtual care and remote working).	Immediate - medium term		✓	✓				✓
14	Finalise research plan and associated research and education infrastructure plan.	Short term		✓	✓		✓		

Key:
■ Service responses
 ■ QCH Optimisation & Growth
 ■ Community- based
 ■ Statewide infrastructure
 ■ Research & Education
■ Corporate services
 ■ Digitally enabled care



Roadmap

Roadmap of infrastructure projects





Future infrastructure planning considerations

Defining the vision
Strategic context and methodology
Current infrastructure
Case for change
Response strategies
Project roadmap

An overview of delivery considerations for CHQ across individual projects.

Delivery considerations

There are several delivery considerations for CHQ on a project-by-project basis. These will need to be reviewed and considered during the investment planning phase of the infrastructure cycle. These considerations include:

• Asset ownership structure

- **Leased** – Commercial leasing or shared facility arrangements allow CHQ greater flexibility in shifting the service location to align with need over time. These types of arrangements are most suitable for “in place” community-based infrastructure and corporate service infrastructure. There is significant opportunity for CHQ to have a more formalised and structured leasing strategy to optimise spend and contract management.
- **Owned** – CHQ owned infrastructure provides greater certainty of infrastructure and is better suited for services that have greater purpose-built requirements (such as clinical services) as the fit outs tend to be high cost.
- **Mixed** – Some infrastructure may be a combination of CHQ owned and leased. For example, CCHR is CHQ owned with partner organisation occupying and contributing to this facility.

• Operational delivery type

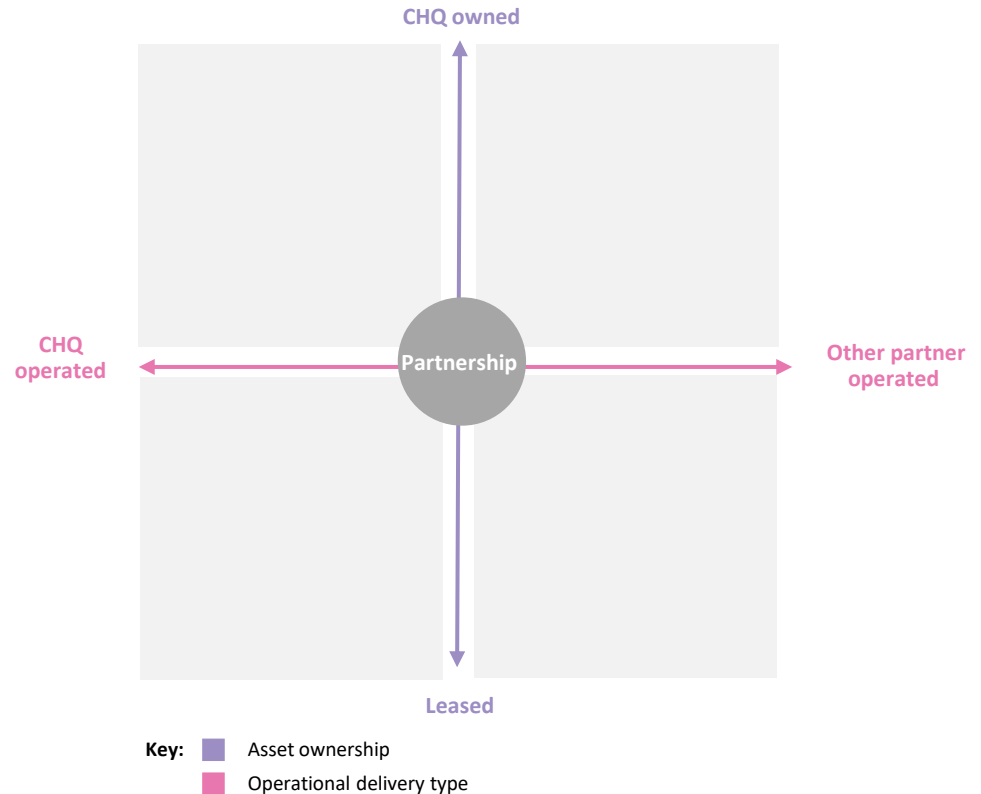
- **CHQ operated** – Some services better lend themselves to being CHQ operated such as specialist clinical services.
- **Other agency or organisation operated** – Some services better lend themselves to be provided by partner organisations such as other HHSs, government agencies and/or non-government owned organisations.

Cross-collaboration / joint investment opportunities (across sectors)

Taking a partnership approach to services and infrastructure is a fundamental design principle of the Master Plan to ensure consumer and family-centred care is designed in partnership with consumers and their families, and delivered by the most suitable service provider in the most suitable location. As such, projects will require further decision making to determine the key partners.

A cross-collaboration and/or joint investment approach across other health agencies and sectors (such as education, non-government organisation, etc) can be highly valuable – creating better outcomes and experiences for consumers. Ensuring the appropriate governance and operating models are in place is even more important in these instances to ensure projects are set up for success. There may be additional cross-collaboration investment opportunities generated through the planning of the Brisbane 2032 Summer Olympics.

Figure 37: Delivery considerations





Future infrastructure planning considerations

Overview of lessons learnt and key infrastructure planning principles for future project considerations.

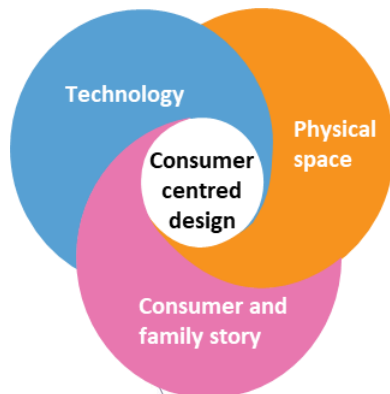
Child and family centred infrastructure considerations

At the core of every great experience is a deep understanding of the users needs and wants. The user determines the success of a project and becomes a storyteller, early adopter, critic or advocate. For CHQ, ensuring the consumer and their family are at the centre of design is core to our values. Designing holistic experiences for consumers and their families require the support of by great technology, storytelling, and spatial design (refer Figure 38). We know that children, young people and their families have different experiences and needs than adults when accessing healthcare. As such, it is important that future infrastructure projects (including those delivered by other HHSs and providers) ensure consumers and their families are at the centre of design.

A number of infrastructure considerations were identified through the Master Plan consultation, consideration of global and national paediatric trends, precedent paediatric infrastructure projects, and various guidelines. It is recommended that the following infrastructure considerations are also embedded in future infrastructure projects to deliver children's health services (including those not provided by CHQ):

- **Welcoming and family friendly** – Ensure spaces are designed with families in mind to give a sense of daily life. This includes consideration of sufficient space (for several family members, prams, etc.), a combination of formal and informal break out areas to provide relief from stressful treatment, and ample natural light sources to create a welcoming environment.
- **Age appropriate** – Ensure the design considers the various age groups of the children, e.g. new born to teenager/young adult.
- **Digitally enabled** – Ensure the infrastructure supports ICT technology and digitally enabled models of care, and considers the ease and simplicity of connectivity for families and consumers.

Figure 38: Consumer centred design



- **Culturally appropriate** – Provide an equitable and inclusive environment which recognises the importance of cultural beliefs and practices of First Nations people and other culturally diverse populations.
- **Accessibility** – Ensure access routes are appropriate for children and their families such as adequate car parking, public transport and disability access; and appropriateness and prominence of access points (e.g. more private, unbranded access to buildings providing adolescent mental health services as an example). The proximity of waiting areas to clinic spaces to ensure ease of access for families.
- **Proximity to need** – Ensure the infrastructure (where possible and appropriate) is aligned to the service need and in close proximity to other family facilities such as shopping centres, schools, post office, public transport, etc.
- **Flexible space** – Greater flexibility of space with supporting storage to allow for colocation or use by multi-disciplinary teams for treatments.
- **Adequate amenities** – Consider consumer and family needs such as play areas including access to outside / green space, adequate toilets, change rooms, breastfeeding facilities, food services, etc.
- **Safe, private and compliant** – Aligned to contemporary models and guidelines (such as the Australasian Health Facility Guidelines) to ensure safe, private and compliant infrastructure. Ensure the guidelines are tailored for specific paediatric characteristics which may include increased observation requirements due to the nature of the age group, family support spaces with greater privacy, spaces that allow quiet, private and safe areas for families to destress, recreation and play facilities for children, and education spaces for child learning, particularly school-aged children that are longer stay consumers.
- **Seamless connectivity** – Enable seamless service delivery and access to infrastructure across collocated partner organisations.
- **Embedded research and education** – Embed research and education services to foster world class research and education.
- **Sustainable** – Ensure infrastructure is designed with financial and environmental sustainability in mind.

Further resources and information include the [Australasian Health Facility Guidelines](#), the [Queensland Health Capital Infrastructure Requirements](#), and the [Charter of The Rights of Children and Young People in Healthcare Services in Australia](#).

07 Appendix

Appendix A: Phase 1A – Current State Infrastructure Review Report

Appendix B: Phase 1B – Future Considerations and Projections Paper

Appendix C: Phase 1C – Future State Options and Recommendations Report

Appendix D: Infrastructure Technical Report

Appendix E: Cost Estimate Report