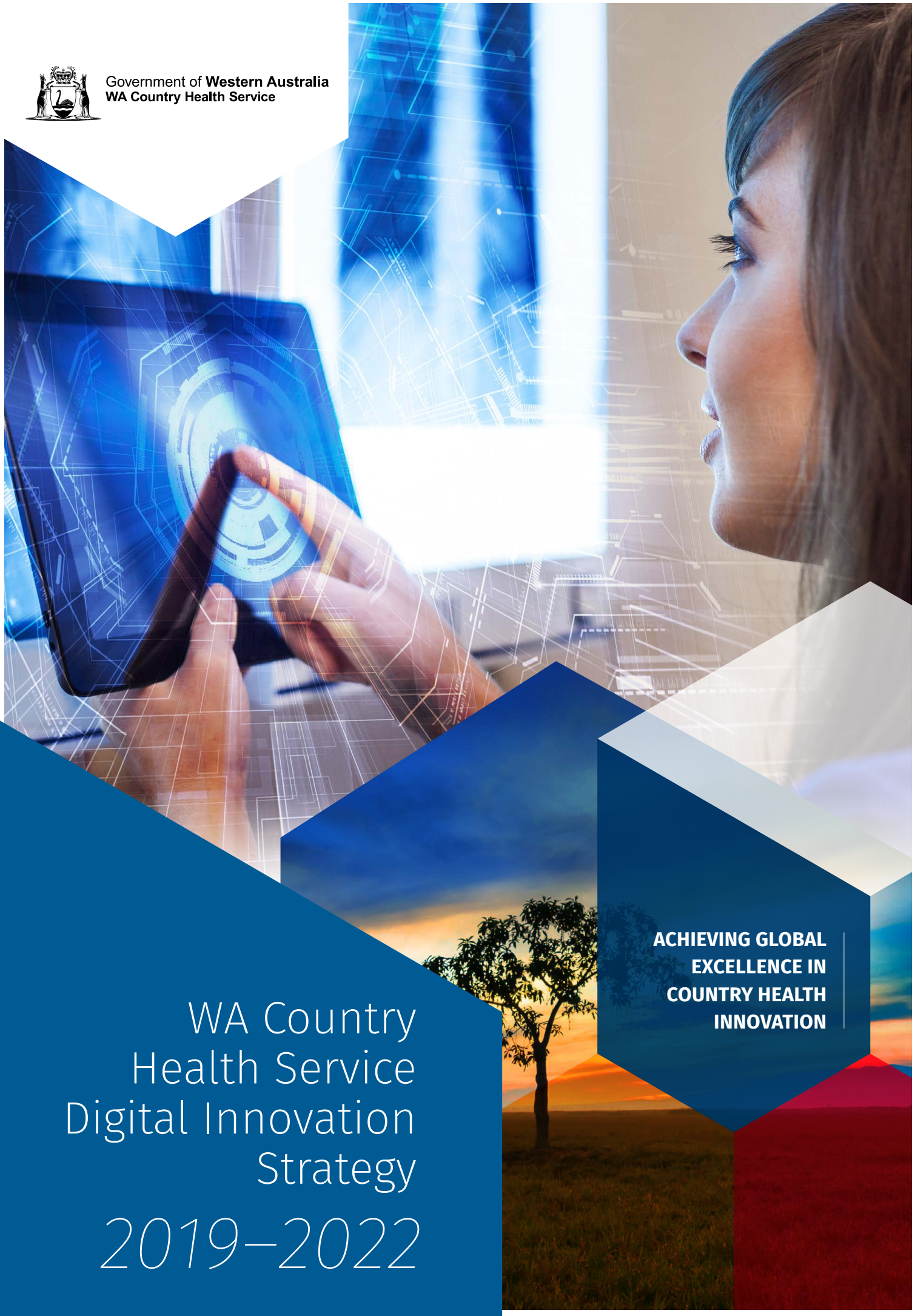
Government of **Western Australia**
WA Country Health Service



WA Country Health Service Digital Innovation Strategy 2019–2022

ACHIEVING GLOBAL EXCELLENCE IN COUNTRY HEALTH INNOVATION

Acknowledgements

WA Country Health Service acknowledges the Aboriginal people of the many traditional lands and language groups of Western Australia. It acknowledges the wisdom of Aboriginal Elders both past and present and pays respect to Aboriginal communities of today.

Using the term—Aboriginal

Within Western Australia (WA), the term Aboriginal is used in preference to Aboriginal and Torres Strait Islander, in recognition that Aboriginal people are the original inhabitants of Western Australia. Aboriginal and Torres Strait Islander may be referred to in the national context and Indigenous may be referred to in the international context. No disrespect is intended to our Torres Strait Islander colleagues and community.

Using the term—on country

For the purposes of this document, on country represents a term used by Aboriginal people referring to the land to which they belong and their place of Dreaming.

Definition of cultural security

Cultural security is the provision of programs and services offered by the health system that will not compromise the legitimate cultural rights, values and expectations of Aboriginal people. To be culturally secure, programs and services need to:

- identify and respond to the cultural needs of Aboriginal people
- work within a holistic framework that recognises the importance of connection to country, culture, spirituality, family and community
- recognise and reflect on how these factors affect health and wellbeing.

Please note: Aboriginal people should be aware that this publication may contain images or names of deceased persons in photographs or printed material.

Contents

WACHS will harness digital opportunities to achieve greater equity of access to services, empower consumers, better support staff, create a more sustainable health service, and improve patient safety.

Message from the Board Chair

Emerging technologies and innovative models of care offer opportunities to improve patient outcomes, increase access to high quality health care and drive sustainability within the WA health system.

Western Australia is moving into a new era of digital health. The State Government's Sustainable Health Review Final Report, released in April 2019, sets out eight Enduring Strategies to progress the sustainability agenda, including investment in digital health care and innovation.

WA Health is also developing a statewide digital strategy that will provide an over-arching blueprint for the future of digital health. The Australian Government has also given priority to digital health, establishing the Australian Digital Health Agency and developing a National Digital Health Strategy.

The ***WA Country Health Service (WACHS) Digital Innovation Strategy 2019–22*** (the Strategy) will enable WACHS to achieve global excellence in country health innovation, by driving the changes required to harness digital opportunities that improve health care and health outcomes.

Digital health technologies are particularly important for country WA where vast distances, smaller populations and the diverse needs of communities create unique challenges for health care service delivery.

Digital innovation is the key to overcoming these challenges. WACHS will harness digital opportunities to achieve greater equity of access to services, empower consumers, better support staff, create a more sustainable health service, and improve patient safety.

WACHS's successful digital health transformation is dependent on the development of statewide systems, structures and initiatives, such as an electronic medical record, and adequate connectivity. WACHS will continue to work closely with other health service providers, stakeholders, staff and consumers in their development.

The Strategy will transform health care delivery through four strategic directions:

1. Empower consumers and communities with improved access to safe, quality services and information through digital solutions.
2. Support a technology-enabled workforce, equipped with the right information to deliver high quality services.
3. Enable WACHS and the broader network to efficiently and effectively deliver health outcomes to country WA.
4. Harness innovation to be a global leader in country health.

The four strategic directions are supported by system enablers. These enablers are the building blocks for innovation and implementation of future digital solutions.

The services will be implemented over three phases in a sequence that delivers rapid service outcomes while driving the digital transformation of WACHS.

The Strategy's implementation will begin with eight priority actions that demonstrate value for consumers, clinicians and system sustainability. A detailed implementation plan will be developed in consultation with key stakeholders.

The Strategy builds on a strong telehealth and information system foundation and responds to the needs of country WA. It is a live strategy that will undergo regular review and updates to ensure it remains relevant in an ever changing digital health environment.

PROFESSOR NEALE FONG
BOARD CHAIR

WA COUNTRY
HEALTH SERVICE

Digital health technologies are particularly important for country WA where vast distances, smaller populations and the diverse needs of communities create unique challenges for healthcare service delivery.

Building on a strong innovation culture

WACHS is a diverse, high performing health service that puts the health of country people first. WACHS strives to achieve greater equity of access and improve health outcomes through innovation. The Strategy will strengthen the organisation's ability to provide contemporary and innovative models of digital health care.

WACHS faces unique challenges in providing comprehensive health services across vast distances, to a population experiencing health inequalities with constrained resources and reduced economies of scale. Inequity of service access and availability and poorer health outcomes for country people drive the need for change across the health system.

WACHS has addressed some of these challenges through investment in world-class telehealth services that connect health providers to patients in their communities, and reduce the burden of travel and dislocation from family and other commitments.

The Emergency Telehealth Service has become a world-leader in provision of virtual emergency care into 79 small hospitals and nursing posts across WACHS, providing country doctors and nurses with 24/7 emergency specialist support.

Telehealth delivers more than 30 outpatient specialties to country patients including plastic surgery outpatient care, respiratory medicine, haematology, orthopaedics, gastroenterology and many more. Other health services delivered by telehealth include cancer treatment, palliative care, mental health, stroke emergency treatment and rehabilitation and education for chronic conditions such as diabetes and asthma.

WACHS has strong information management and business intelligence platforms. Building on the successes to date, the Strategy aims to improve health and wellbeing outcomes of country Western Australians through new models of digital care.

The Emergency Telehealth Service has become a world-leader in provision of virtual 24/7 emergency specialist support.

Snapshot - WA Country Health Service

60%
of Aborginal people live in regional and remote areas.

28.6 million kms
In 2018, telehealth saved WA country patients from travelling 28.6 million kilometres.

Health services are delivered in 68 hospitals and 42 health centres including nursing posts.

42 Health Centres

68 Hospitals

80
80 Emergency Telehealth Service locations provide specialist support to regional clinicians.

1,400
averaging a total of around 1,400 consultations a month.

532,000
WACHS delivers a range of services across 2.5million km² to more than 532,000 people.

2.5m km²

including an estimated 59,000 Aboriginal people.

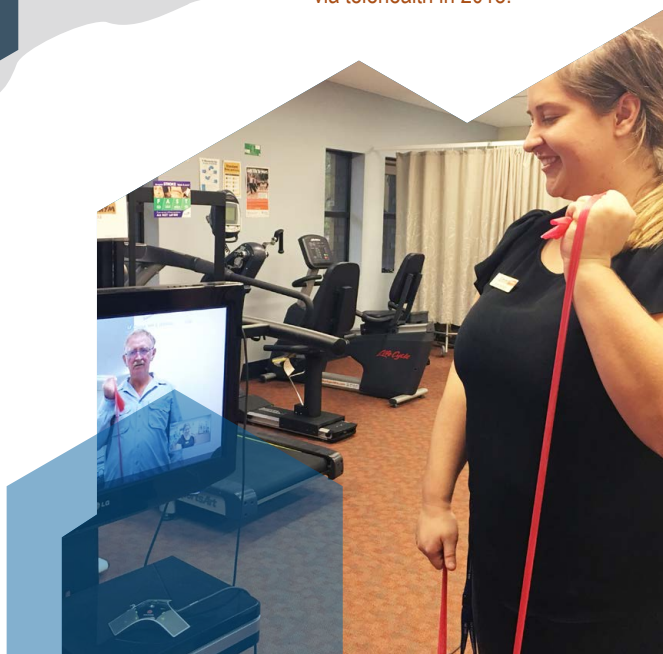
59,000

40,000
There were more than 40,000 telehealth consultations with patients in 2018.

7,400
and a further 7,400 mental health services were delivered via telehealth in 2018.

-2 years
Average life expectancy for WA country people is two years less than for metro people.

10,400 people
The WA Country Health Service has a workforce of around 10,400 people (including casual staff).



The need for digital innovation

Rapidly changing technology has created new opportunities to drastically improve healthcare. Leveraging these opportunities is particularly important in the context of country WA, where inequity of service access contributes to poorer health outcomes for country people.

Emerging innovations, such as mobile health apps, wearable biometric sensors and artificial intelligence analysing medical images, provide exciting opportunities to improve healthcare.

Changing needs and consumer expectations can be addressed using contemporary and innovation-driven service and access solutions. WACHS clinicians want to leverage these technologies to achieve excellence in care. To do this they require greater digital capability and innovation support.

The introduction of an electronic medical record would provide improved access to patient information including electronic medical record forms, providing secure, accessible information across multiple sites and providers.

Country consumers and communities have both the desire and capacity to have greater input into their care in order to improve their health experience and outcomes.

A strategic response is required to optimise digital innovation opportunities while avoiding a piecemeal approach.

WACHS is one of five public health service providers that have a responsibility for achieving better access and health outcomes for country people. Seeking partnerships with industry leaders and metropolitan health services will ensure the best outcomes for communities.

Addressing rapid change in the digital space and associated risks, including data security and privacy, requires strategic decisions.

The current state of disconnected, manual and paper based systems and a culture focused on incremental small service and analogue based improvements will not achieve sustained and essential improvements. Digital transformation is required for country WA.

Emerging innovations, such as mobile health apps, wearable biometric sensors and artificial intelligence analysing medical images, provide exciting opportunities to improve healthcare.

The benefits of digital innovation

FOR CONSUMERS

Digital health improves access to health services and increases the availability of information for both consumers and providers. Equipped with improved access and information, providers can drive targeted prevention, early diagnosis and effective interventions, and consumers can become active participants in their own care.

FOR COMMUNITIES

WACHS will use digital health technologies to take a more proactive role in engaging with country communities. WACHS aims to empower communities with information, and encourage consumers to actively manage their own health, by providing streamlined and real-time opportunities to interact with providers.

FOR CLINICIANS

Clinicians will be enabled through technology to access real-time data, predictive analytics, automated processes and collaborative sharing and communication tools to support clinical decision making and the delivery of quality, person-centred care.

FOR NON-CLINICAL STAFF

Integrating administrative, organisational, service delivery and clinical support functions through collaborative, cloud-based platforms better supports the workforce and achieves more efficient administration.

FOR THE BROADER HEALTH SERVICE

Implementing new and innovation-driven digital technologies will create a more efficient and sustainable health system.

- Digital solutions improve and streamline processes and workflows driving efficiencies and effective service delivery.
- Integrated partnerships with the broader health network support information sharing and collaborative health service planning using co-design principles.
- Developing an agile and adaptive culture of continuous improvement and collaboration cultivates new opportunities and solutions through research and innovation.
- The employee experience is improved through a culture of innovation, continuous learning and development interaction with providers.

Emergency doctors and nurses supporting country doctors and nurses via telehealth

18,994
Emergency Telehealth Service consultations in 2018*

More than **80,000** ETS consultations since inception in 2012

351 Average ETS consults a week

Upskilling

More than **590** regional staff attended 30 ETS education sessions via telehealth in 2018

*Data sources include MMEx and webEOC. Extracted in March 2019.

80 Number of regional EDs across WA with video access to highly trained emergency doctors

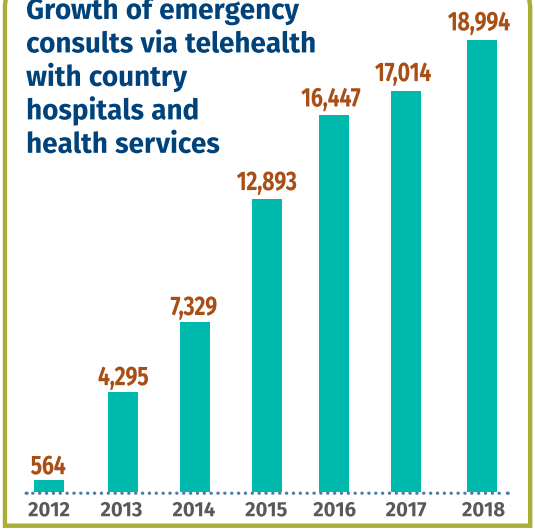
More than **94** Number of ETS emergency doctors

Care closer to home

Around **75%**

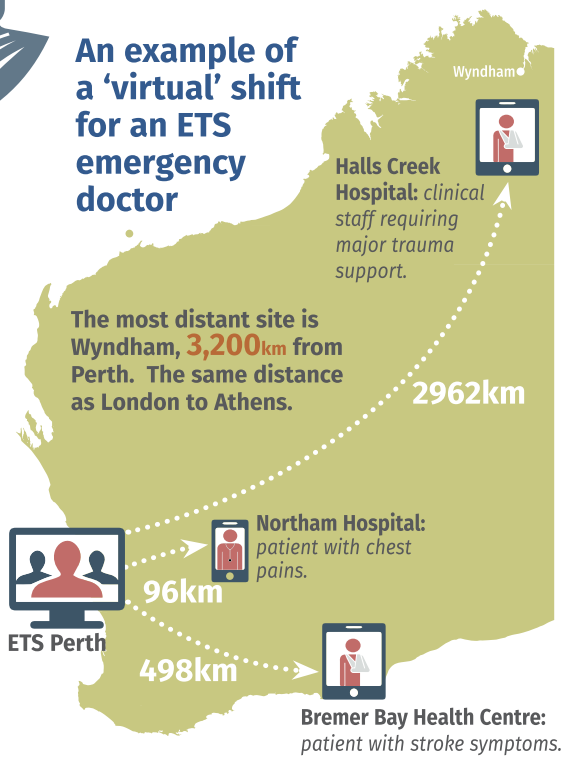
Percentage of ETS patients who are discharged from their local hospital without needing to be transferred elsewhere for treatment

Growth of emergency consults via telehealth with country hospitals and health services



ETS operates **24 hours a day, 7 days a week**

An example of a 'virtual' shift for an ETS emergency doctor



To the moon and back with telehealth

Telehealth outpatient activity

In 2018, telehealth saved WA patients from travelling

28.6 million kilometres

for outpatient appointments.*

That's to the moon and back about

37 times!^^

21,415** outpatient appointments via telehealth in 2018**, **17.5% increase** on 2017

* Total distance by road from receiving location to Perth and return and travel by road for intra-regional appointments, excluding telehealth in home services.
** Excludes mental health occasions of service.
^^ Average distance to the moon is 384,400km.

412

Average outpatient consults per week via telehealth in 2018

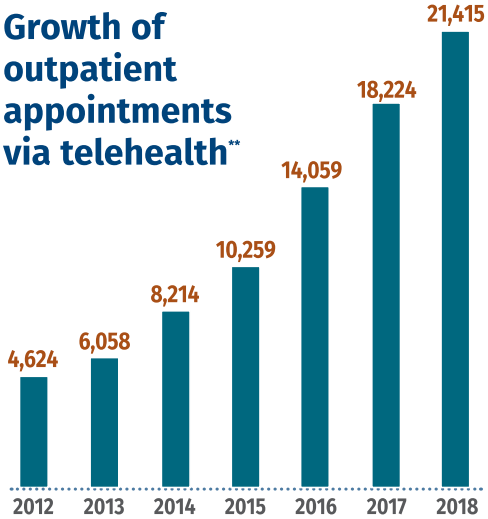
More than 7,400

mental health services were delivered via telehealth across WA in 2018

Top 5 outpatient specialties delivered via telehealth in 2018

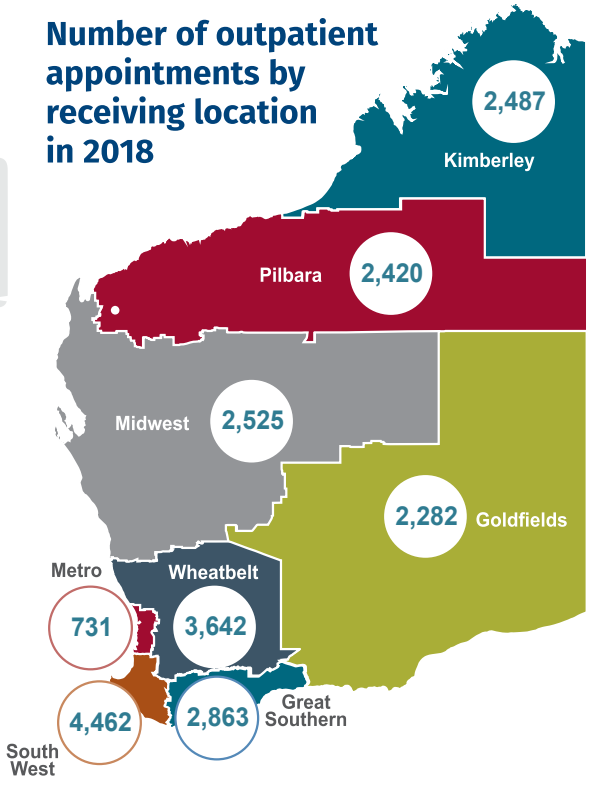
	Specialty	No. of appointments
1	Plastic surgery	3,577
2	Orthopaedics	1,698
3	Haematology	1,611
4	Gastroenterology	1,143
5	Respiratory medicine	1,090

Growth of outpatient appointments via telehealth**



**Data source MMEx. Does not include mental health activity or activity through external videoconferencing applications. Extracted in March 2019.

Number of outpatient appointments by receiving location in 2018



Fuel savings:
$4.64 million^

Kinder to the environment: Saves
5,200 tonnes
of carbon# being emitted

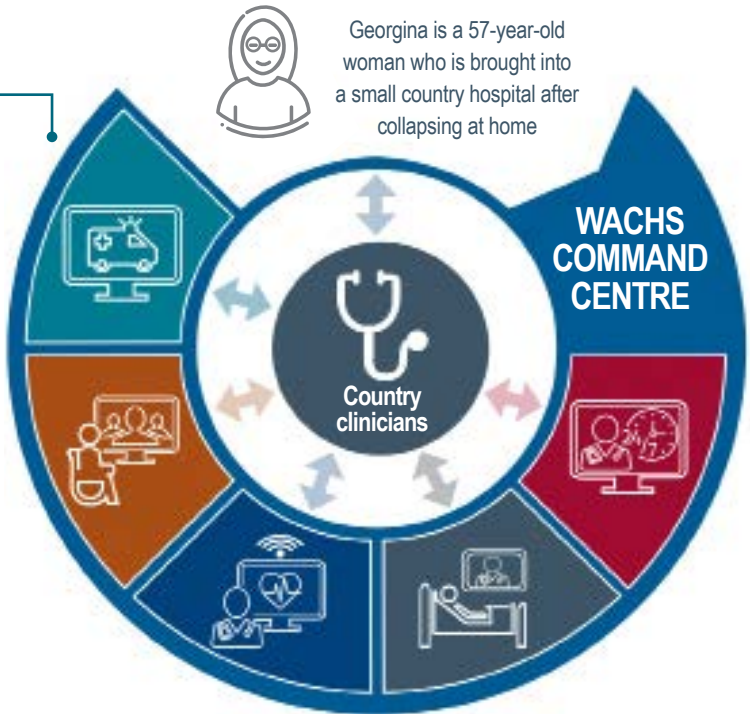
Equivalent to planting
78,000 trees##

^ Based on average rate of fuel consumption per passenger vehicle, on 2018 ULP average regional prices (10.6L/100km).
# Based on an annual distance of 15,000kms a medium size petrol car (7.5L/100km) produces 2.74 tonnes of CO2 emissions.
Based on 15 trees/tonne of CO2.

Future healthcare experience for the consumer using the WACHS Command Centre

HOW THE WACHS COMMAND CENTRE WILL SUPPORT PROVISION OF CLINICAL CARE

GEORGINA'S PATIENT JOURNEY:



Georgina is a 57-year-old woman who is brought into a small country hospital after collapsing at home

Patient transport is facilitated by the **Acute Patient Transport Coordination** service and the progress of the patient transport request, acceptance and ETA is tracked by the nurse at the bedside.

A call is made to the **Acute Specialist Telehealth Service** and a cardiologist based in Perth is able to see the patient via videoconference and ask further questions, determining that Georgina needs to be transferred to Perth.

Georgina is seen by the local nurse and GP with assistance and advice from the **Emergency Telehealth Service (ETS)**.

The nurse at the hospital and the **Advanced Patient Monitoring System** detects Georgina is deteriorating and within Medical Emergency Response criteria. The **ETS** team are available to dial in, see the patient and assist the nurse.

The local GP admits Georgina for hydration but is unavailable for the next two days and hands over to **Inpatient Telehealth Service** for ongoing patient care through a daily ward round and ongoing advice.

The future healthcare experience for the consumer across community and acute services

HOW DIGITAL HEALTH AND DATA CAN SUPPORT PROVISION OF CLINICAL CARE

ANGELA is a 75-year-old woman living independently in a country community with support from her community aged care provider. Recently she has experienced a fall, she is unsteady on her feet, and hasn't been feeling well.

HOME

Angela is able to be monitored in her own home, enabling her to remain in her country community. The data from her home monitoring devices is automatically recorded and integrated into an electronic medical record, accessible by all Angela's care providers.

GENERAL PRACTICE

Angela is seen by a GP with a chest infection and assessed as being at risk of complications. The doctor generates an e-referral for a specialist in the Perth metropolitan area who organises for her appointment to be conducted via telehealth.

INPATIENT

Angela is admitted to a small regional hospital where her electronic medical record can be accessed immediately. Angela has a chest x-ray and the electronic image is available to her Perth-based specialist, who sees her via telehealth.

Clinicians are aware she has a history of falls and she is monitored by a telesitter (audio and visual monitoring of patients at risk of falls). Her vital signs are monitored by a nurse and electronic predictive algorithms assess the likelihood of her condition deteriorating. Clinicians are able to respond proactively, averting the need for transfer to a larger metropolitan hospital.

While admitted, Angela can make voice requests through the bedside voice-activated digital assistant that uses AI prioritising and alerts the right staff member to her needs.

OUTPATIENT

After 48 hours Angela is discharged home with supervision from her GP and carers. A timely electronic discharge summary and care plan is provided to Angela, her GP and her aged care provider. Her health continues to be monitored using wearable and home-based devices that collect and interpret real-time biometric data.

The future healthcare experience for the consumer across community and acute services

HOW DIGITAL HEALTH AND DATA CAN SUPPORT PROVISION OF CLINICAL CARE

SALLY is a 35-year-old mother with breast cancer, living in country WA. She is scheduled to undergo a mastectomy. Sally is technology-literate and uses her digital devices to save time and avoid unnecessary travel or delays.

HOME

Sally uses the MyCountry App to access educational resources and learn more about the experience of having a mastectomy. Sally accesses tele-social work services for counselling, plans her consultations with specialists and organises her PATS claims. The PATS portal allows her to easily organise her travel, accommodation and scheduling from her mobile.

Sally self-manages her care by accessing her lab results, medications list and care plan online and receives reminders on her smart phone for her pre-op care. Sally has pre-op anaesthetic and surgeon assessments at home via telehealth.

GENERAL PRACTICE

Sally's GP is able to communicate with her oncologist through streamlined, integrated communication systems and they are able to share records and plan her admission and post-surgery care with Sally. The PATS portal enables the GP to efficiently complete the PATS access requirements.

INPATIENT

After the surgery in a WACHS hospital, Sally's blood pressure, pulse, and breathing are monitored via the WACHS Command Centre that provides support to her care team by documenting her observations and alerting clinicians to any potential deterioration. Sally's medications are dispensed using an eMeds system, ensuring accuracy and speed. Noiseless alarms on medical devices, quiet paging and health acoustic engineering improve ambient noise, making her stay in hospital more comfortable.

OUTPATIENT

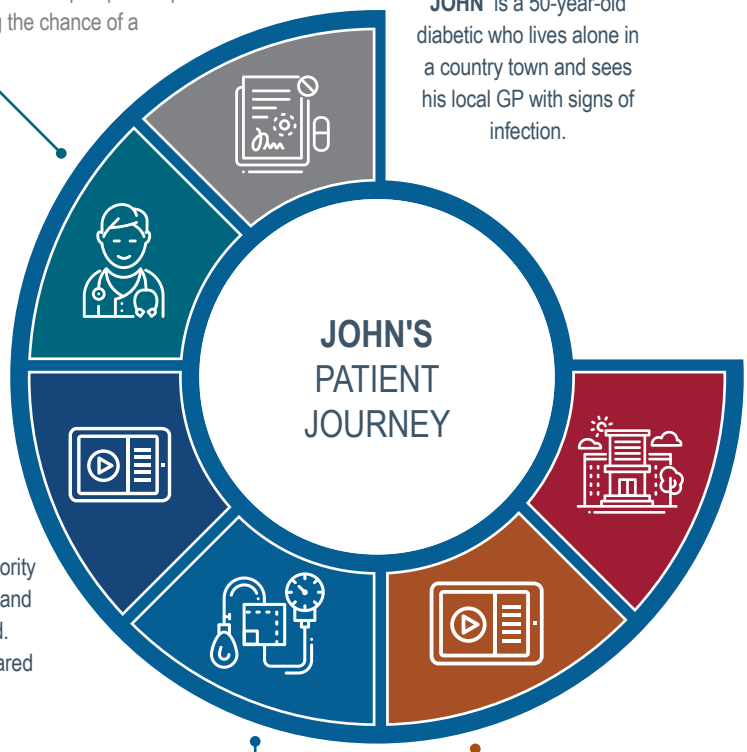
Sally receives allied health care follow up via teleconference, including assessment of her arm range of motion and scarring. She is also able to report her symptoms back to her oncologist through the electronic Patient Reported Measures (PRMs) program. Sally continues her care using TeleOncology services, enabling her to receive complex chemotherapy closer to home.

SYSTEM REPORTING AND GOVERNANCE

The PATS portal will enable the efficient collection of accurate and timely usage data for financial modelling to improve sustainability of the PATS program.

The future healthcare experience for the consumer across community and acute services

HOW DIGITAL HEALTH AND DATA CAN SUPPORT PROVISION OF CLINICAL CARE



JOHN is a 50-year-old diabetic who lives alone in a country town and sees his local GP with signs of infection.

INPATIENT
John is admitted to a small country hospital under the care of his GP for five days of intravenous antibiotics. He is placed on 24 hour remote monitoring, supported by the WACHS Command Centre.

DETERIORATION
Early signs of sepsis are detected by artificial intelligence mediated remote monitoring which triggers an urgent collaborative action plan. After stabilisation by local nursing staff, John and his GP have a video consultation with a specialist clinician who recommends aggressive treatment and transfer to a metropolitan facility.

AWAITING TRANSFER
John's management is optimised and monitoring continues while the Command Centre commences retrieval planning for John to be transferred to a metropolitan facility. John is placed on ventilator support and inotropic medication is administered under expert guidance by telehealth while awaiting arrival of the medical transfer service.

FURTHER DETERIORATION
John's condition deteriorates further causing escalation of priority with a medical retrieval service and emergency retrieval is arranged. Clinical data is continuously shared with the retrieval service.

MEDICAL TRANSFER
Electronic clinical monitoring continues during road transfer to the local airport, flight and road transfer to a metropolitan tertiary hospital. John's handover to the metropolitan hospital includes an electronic clinical summary, digital observation data and planning for repatriation when John is well.

RETURN HOME
After seven days in a metropolitan hospital, John returns to independent living at home. Shared electronic clinical information is provided to John's GP and follow-up occurs with a diabetes educator via telehealth. John is supplied with a state-of-the-art glucose monitor with automated insulin pump that optimises his blood sugar levels, reducing the chance of a similar episode in the future.

The vision

Vision: Achieving global excellence in country health innovation

DIRECTION 1

Empower consumers and communities

Empower consumers and communities with improved access to safe, quality services and information through digital solutions.

DIRECTION 2

Support the workforce

Support a technology - enabled workforce, equipped with the right information and training, to deliver high quality services.

DIRECTION 3

Sustainable health systems

Deliver health system improvement across WACHS to increase effectiveness, efficiency and sustainability.

DIRECTION 4

Harness innovation to be a global leader in country health

WACHS will achieve global excellence in the provision of innovative country health services.

Direction 1

EMPOWER CONSUMERS AND COMMUNITIES

Improved access to safe, reliable and contemporary services and information through digital solutions empowers consumers and communities.

OUTCOMES

EQUITY IN ACCESS
Consumers have greater access to timely services closer to home and on country and within their network of local providers.

IMPROVED PATIENT SAFETY
Patients are safer as digital solutions provide clinicians with better information to make clinical decisions and deliver more consumer - centered care.

CONSUMER ENGAGEMENT AND EDUCATION
Digital channels allow communities to take control of their health outcomes. Consumers are empowered through improved access to information to engage more proactively in their health.

SERVICE SOLUTIONS

Remote patient monitoring
Wearable devices will provide more frequent touchpoints with patients, and allow clinicians to monitor complications of care, unplanned re-presentations and readmissions. Access to real-time data will support clinical decision making and more timely interventions.

Wearable 'smart socks' embedded with sensors can enable physiotherapists to remotely assess gait pattern and provide consultation for regional and remote patients.

Telehealth in the home
Existing investments in telehealth will be enhanced by expanding the reach of telehealth beyond hospitals and into homes and communities.

Universal patient scheduling
An online appointment scheduling, confirmation, reminder and automated recall system manages all patient appointments, bookings and scheduled activities across sites and between disciplines, improving the consumer experience while improving the efficiency of administrative processes.

Patient Assisted Travel Scheme (PATS) portal
Consumers will be able to lodge digital patient assisted travel claims through a mobile patient portal and app. This will deliver a simple consumer experience and streamline the associated clinical and administrative processes. Advanced analytics will identify personalised patient services that reduce the need for travel by delivering services through telehealth, partnerships or new models of local care.

Mobile consumer solutions
Solutions such as mobile applications, patient portals and personalised information kits that are digital, will be used to improve access to information and improve health outcomes. Consumers can lodge a digital PATS claim through a patient-facing portal.

The MyCountry mobile application enables consumers to see their nearest health services including the nearest Emergency Department, how to get there and the average wait time, with an option to speak to a nurse by video on their smart phone.

The TeleOncology service at the Townsville Cancer Centre has enabled 90 per cent of urgent cases to be reviewed within 24 hours, 90 per cent of non-urgent cases within one week, and a 50 per cent reduction of inpatient inter-hospital transfers from Mt Isa to Townsville.

Direction 2

SUPPORT THE WORKFORCE

A technology-enabled clinical and non-clinical workforce is equipped with the right information to deliver high quality services.

User support, training and a digital curriculum will provide on-demand assistance and training to the entire workforce. This will build the capability of the WACHS workforce to respond to digital innovation.

OUTCOMES

IMPROVED CLINICAL DECISION-MAKING
Predictive analytics and access to real-time trended data supports clinicians to make proactive and effective clinical decisions.

STREAMLINED AND INTEGRATED CARE
Patient-centred care is supported by access to relevant information, better coordination between health services and increased automation of repetitive, manual tasks.

SERVICE SOLUTIONS

Real time patient biometrics and Telemetry
Real-time patient monitoring through existing and emerging wearable devices, interpreted by artificial intelligence (AI) will improve quality of care and patient safety through early recognition of clinical deterioration and intervention.

The Cleveland Clinic uses predictive analytics and AI to identify potential at-risk patients under ICU care and prevent patient emergencies before they occur, resulting in improved health outcomes, a decrease in length of stay and unplanned ICU transfers.

Direction 2

SUPPORT THE WORKFORCE

Acute patient care and transfer coordination

A state-of-the-art, digital Command Centre will be established such as better manage patient flow, transfers and clinical and operational decision making.

Data visualisation will provide real-time insights using predictive analytics and data-driven problem solving to better manage patient safety and experience.

The Johns Hopkins Capacity Command Centre in Baltimore is a centralised facility that uses data visualisation and predictive analytics to improve patient safety, experience and flow. This initiative has realised a range of benefits including 60 per cent improvement in the ability to accept complex patient transfers, and a 63-minute reduction in critical care team dispatching.

Electronic Medical Record

A future electronic medical record will provide improved access to patient information. Capturing medical and clinical images, biometric data, pathology, alerts and electronic medical record forms will provide secure, accessible information across multiple sites and providers.

Digital Assistant

Using AI patients will be able to request assistance by voice command. Nurses are alerted to their need, with automated prioritisation and smart-routing requests to the right staff to meet the patient's needs.

Automation

Automation will streamline health service delivery in areas such as patient administration, medication management, billing and payroll.

NSW is currently using an Electronic Medication Management (eMeds) system to support the delivery of medications to patients, reducing the incidence of medication errors and variance in prescribing practice.

Discharge planning

Risk-stratification of patients for further complications informs clinician decisions about allocation of in-home and mobile devices to monitor physiological signs.

Electronic Cardiotocography (CTG) Monitoring

The introduction of an electronic CTG system provides secure, internet based access to real time CTG review by clinicians via portable devices. This will support maternal health by ensuring midwives can stay with patients and women are not unnecessarily disturbed during labour. Electronic CTG monitoring will better support clinicians to recognise and respond to abnormal CTGs and increase patient safety.

Direction 3

SUSTAINABLE HEALTH SYSTEMS

Deliver health system improvement across WACHS to increase effectiveness, efficiency and sustainability.

Data integration across the health system improves health outcomes for people in country WA.

OUTCOMES

SUSTAINABLE HEALTH SYSTEMS
New models of digital health are sustainable, increasingly efficient and ensure continuous improvements in consumer outcomes and staff capability.

DATA-DRIVEN DECISION MAKING
Predictive analytics and real-time data insights will inform proactive and effective decision-making across the health system.

SERVICE SOLUTIONS

Workforce management system

A single workforce management platform provides a snapshot of the total WACHS workforce. Rostering and operational management is supported by process automation and data-driven decision making.

This platform will efficiently support staff queries and service requests, through convenient online access to payroll information and services through mobile, web and intelligent 'chat' agents.

Direction 3

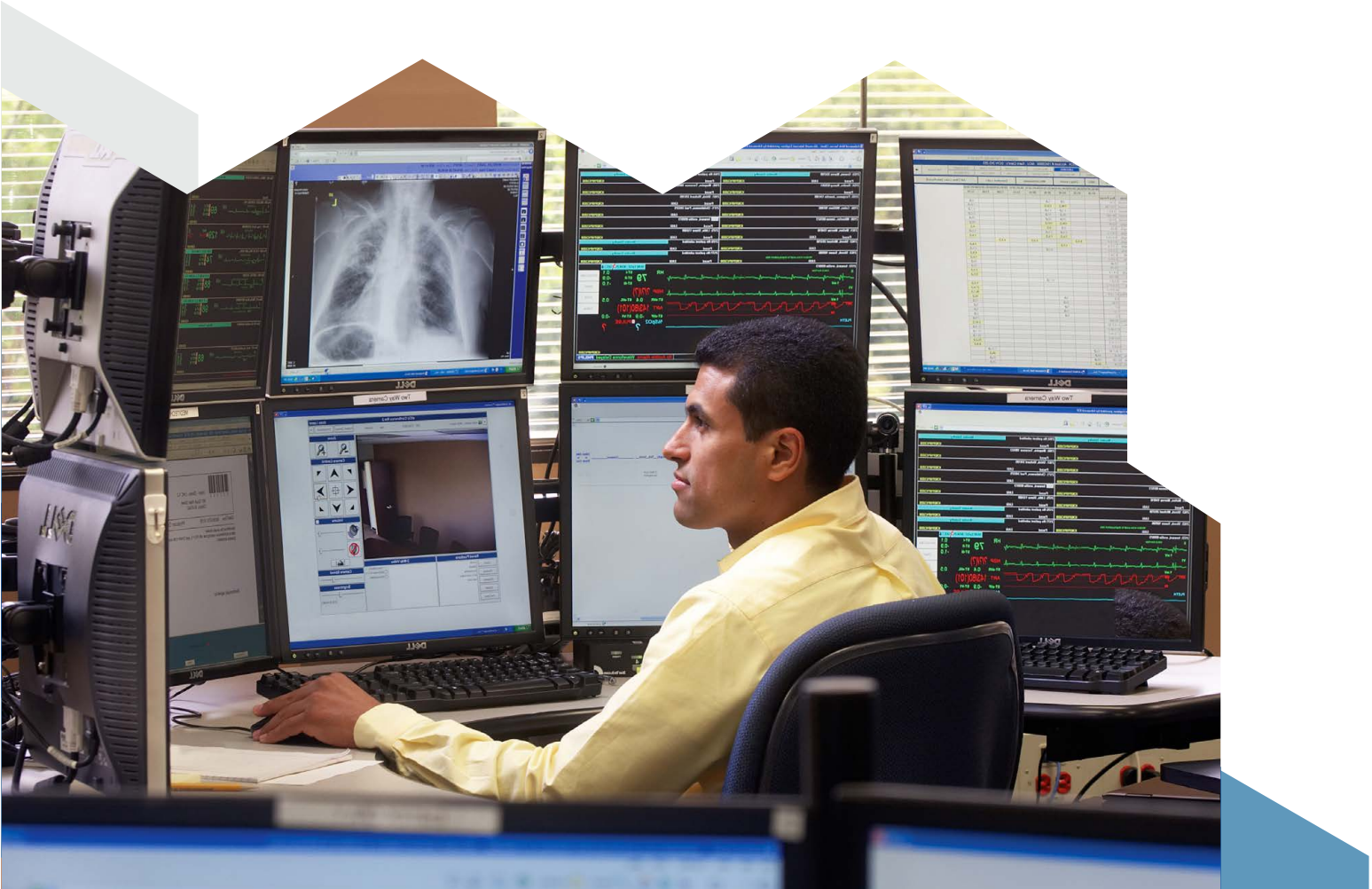
SUSTAINABLE HEALTH SYSTEMS

Self-service data and information
WACHS promotes insight-driven business improvement and innovation by enabling staff with high quality data, effective and usable tools, and investment in capability development and support. By making all data and information simple to access, understand and use through self-service tools, our partners, collaborators and staff can measure success, validate and identify new opportunities to build on a foundation of evidence.

Elective procedure prioritisation
Real-time predictive analytics assess patient prioritisation, procedure type, availability of operating theatre time and availability of treating consultant.

Patient facing screens in emergency departments will help to inform consumers how busy the emergency department is and their likely wait time for treatment.

This real-time information will assist in setting expectations with consumers as to their likely journey. Staff also oversee the acuity of the emergency department and identify escalation points before or as they are happening.



Direction 4

HARNESS INNOVATION TO BE A GLOBAL LEADER IN COUNTRY HEALTH

WACHS achieves global excellence as a rural and remote leader in health innovation through collaboration and digital technologies to deliver equity in access and improved health outcomes.

OUTCOMES

INNOVATIVE HEALTH SERVICES
Innovation achieves improved safety, quality and efficiency of care, equity in access and outcomes and health service sustainability for country communities.

COLLABORATIONS THAT ADVANCE HEALTH INNOVATION
Extensive national and international collaborations will enable WACHS to achieve global excellence in country health innovation that engages our communities and workforce to deliver shared solutions.

NEW MODELS OF CARE
Through collaboration that brings experts in health care, digital innovation, research and technology, new models of care will be translated into practice through an agile approach to rapid service delivery.

SOLUTIONS

Culture of innovation

WACHS responds to stakeholder expectations and new opportunities for innovation, by actively connecting clinicians, researchers and digital innovators to translate ideas into outcomes.

This culture of opportunity to innovate will be supported by new models of governance and simplified processes that foster a sense of urgency and shared endeavour in delivering new models of care.

Research innovation incubator

A research and innovation incubator showcases success and connects researchers, communities, partners, staff and industry to accelerate research and innovation into practice.

A common collaboration platform and pathway - supported by virtual technology test labs to safely develop and test ideas, increase exposure to emerging opportunities and partners and celebrate successes - accelerates innovation.

Development of an international health service and global digital partnerships

Emerging opportunities in AI, machine learning, mobile and online health, wearable biometric sensors and advanced analytics will enable WACHS to be a future leader.

These advances, combined with biomedical technology innovation in point of care testing, personalised care through genomics and machine-assisted diagnostics, will transform health care outcomes and the role of clinicians and consumers.

The Children's Hospital of Philadelphia created an Office of Entrepreneurship and Innovation to help promote and accelerate new digital health capabilities.

The Office investigates emerging technologies and new services and creates spin-off companies and licensable assets.

Critical system enablers

System enablers are the building blocks that provide the foundations for future models of digital health and innovation.

OUTCOMES

EFFICIENT, AGILE TECHNOLOGY
Technology infrastructure that is consumption-based, agile and responsive to rapid change.

CLEAR GOVERNANCE AND NEW CAPABILITIES
A framework of digital functions and structures support a consumer-centred health service. Partnerships strengthen and increase uptake of emerging innovations.

FEDERATED SYSTEM-WIDE HEALTH INFORMATION
Access to real-time data from across the health system will build knowledge, deliver insights and support digital innovation.

ENABLERS

Managed services

WACHS will transition from an onsite, owned infrastructure model to an agile, consumption-based model of managed services where it is effective and efficient to do so. The aim is to achieve an adaptive, cost-effective technology platform that meets health needs.

Security and privacy

WACHS will operate in a trusted digital environment where information security and privacy is paramount and safeguards are in place to ensure personal health information is safe and protected. Appropriate consents will be accessed in compliance with legislative provisions.

Workflow automation and integration

There are opportunities for robotic process automation to replace manual workflows and paper based systems. As systems mature the level of integration is enhanced by software and applications that automate choices based on predefined business rules.

Federated data platform

Real-time data will be accessed and used to support clinical and non-clinical decisions from a single, common platform that enables integration of future digital technologies.

Standardised data will allow for insight-driven analysis and increasingly sophisticated technology to be deployed, such as machine learning.

Data science and analytics

Data science relies heavily on collection of accurate, quality data. Supporting improved data quality is a critical system enabler.

Data science and analytical capability will be developed and sourced to realise value from the data and information available to WACHS.

Workforce education, training and support

Digital-enabled services will impact all of WACHS. User support, training and a digital curriculum will provide on-demand assistance and training to the entire workforce. This will build the capability of the workforce to respond to digital innovation.

Technology solutions for remote communities

Working with communication and technology service providers for remote communities aims to achieve reliable access to technology, bandwidth, and information systems to access critical health services. As health services increasingly rely on technology, the level of inequity for remote communities has inadvertently been exacerbated.

Addressing this is a priority as remote populations have the highest morbidity and mortality rates in WA.

Priority actions

Eight priority areas for action have been identified. Implementation of these digital solutions will deliver significant improvements for consumers and clinicians and demonstrate the value of digital transformation.

The WACHS Command Centre will include emergency and acute telehealth services, remote monitoring and country acute patient transfer coordination.

1 EMERGENCY AND ACUTE TELEHEALTH EXPANSION, REMOTE MONITORING AND COORDINATION

Building on the success of the Emergency Telehealth Service (ETS), WACHS will expand emergency and acute telehealth services and develop a Command Centre to improve patient outcomes. This will involve:

- 24/7 remote patient monitoring, wearable biometric devices, commencing with country intensive care and high dependency units plus inpatients at increased risk of deterioration.
- Expanding acute specialist telehealth services for stroke, mental health, obstetrics, intensive care and pediatrics.

2 COUNTRY ACUTE PATIENT TRANSFER COORDINATION

WACHS will work with acute patient transport agencies to develop a central coordination function within the Command Centre to achieve safe, timely and efficient transfers to Perth or regional hospitals or acute country patients.

3 IMPROVED ACCESS TO TECHNOLOGY IN REMOTE COMMUNITIES (EARLY INTERNAL DISCUSSION STAGE)

As health services increasingly rely on technology, the level of inequity for remote communities has inadvertently been exacerbated. Without reliable bandwidth these communities are unable to access the emergency and outpatient telehealth services that other country people can access. Addressing this is a priority as remote populations have the highest morbidity and mortality rates in WA. WACHS will:

- Work with communication and technology service providers to achieve access for remote communities to the technology and bandwidth platforms and information services to access critical health services.
- Develop and implement targeted, telehealth clinical services into remote communities.

Priority actions

4

PATS PORTAL

PATS is a critical program to mitigate the inequity of access to specialist medical services for country residents. PATS currently relies on a number of manual, paper based processes to get information from the patient, GP and the treating specialist. Streamlining and digitising the PATS system will enable GPs, specialists and regional PATS staff to focus on patient care rather than administration and give patients greater access to health information. This will involve:

- Developing a PATS patient and clinician portal that streamlines patient and clinician referrals and scheduling and provides up to date information on service availability to reduce unnecessary travel.
- Creating business intelligence systems that link PATS data about specialist and telehealth services and referrals to identify unmet need and alternative service delivery approaches.

5

CTG MONITORING CONCEPT

The introduction of an electronic CTG system provides secure, internet based access to real time CTG review by clinicians via portable devices. Currently the manual second clinician review process is slow and unsecured and either takes midwives away from patients or disrupts women during labour. Electronic CTG monitoring will improve health outcomes for patients and better support clinicians.

6

VIRTUAL WAITING ROOM AND SCHEDULING SOLUTIONS

The virtual waiting room and scheduling solutions will enable home based telehealth and more efficient telehealth scheduling.

7

ELECTRONIC MEDICAL RECORD (EMR)

WACHS will enhance its EMR functionality, focusing on leveraging current systems.

As a statewide EMR is being investigated, WACHS will also work with the Department of Health as the system manager, to ensure country health needs are integrated into the system requirements.

8

MEDICATION MANAGEMENT SYSTEM (SCOPING)

Improved prescribing administration, quality assurance and stewardship.

Delivering the Strategy

The Strategy articulates the WACHS vision for digital innovation in health care and the directions and priorities that are necessary to get there. A detailed implementation plan will be developed in consultation with key stakeholders.

Phase One (1 year)

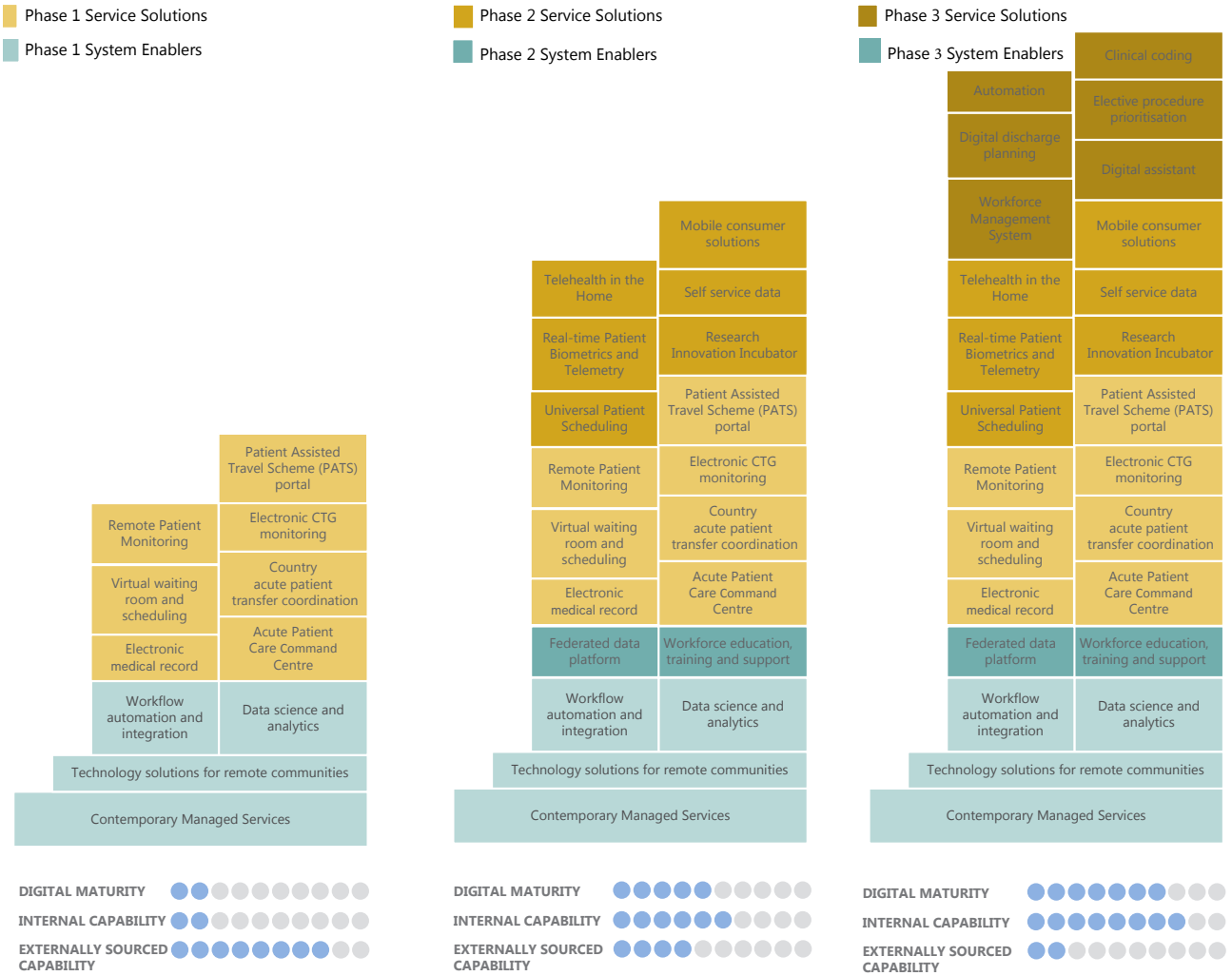
The initial focus will be the eight priority actions that have been identified to establish momentum. A key outcome of Phase One will be the development of capability that can quickly generate value from technology and digital opportunities.

Phase Two (2—3 years)

The services provided by WACHS will be strengthened and scaled through an expansion of service solutions and system enablers. Partnerships will be formalised to access emerging technology and digital capabilities.

Phase Three (3+ years)

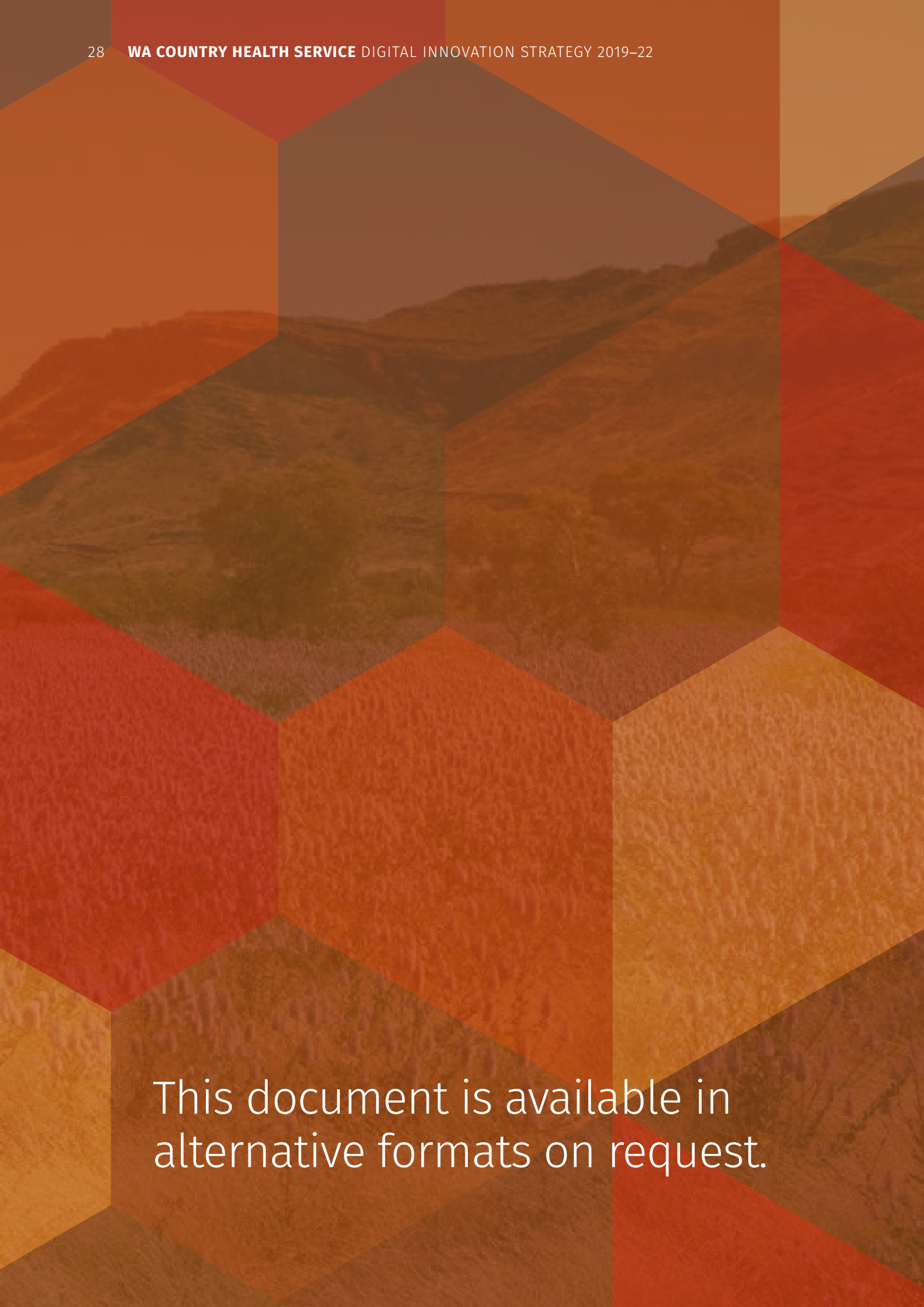
The service solutions will be integrated with relevant system enablers to deliver data-driven improvements for consumers, communities, the workforce and the health system. Service solutions will be gradually integrated into business as usual activity. Ongoing refinement will be driven from the new innovation capability.



Measuring success

The success of the Strategy will be measured using indicators for each of the four strategic directions. These indicators will be defined further through consultation with key stakeholders in the development of detailed implementation plans.

WHAT IS BEING MEASURED	HOW WILL IT BE MEASURED
Utilisation of digital initiatives	WACHS will assess the rate stakeholders adopt digital health technologies including: • the rate of consultations performed via telehealth • use of digital therapeutic apps used to manage consumer health • adoption of integrated health records across health service providers.
Consumer feedback and satisfaction	Consumer feedback and satisfaction will continue to be evaluated across the service and online through the Patient Opinion website. Feedback will be incorporated into the WACHS quality measures processes.
Employee experiences and feedback	Employees will be involved in the design and implementation of digital initiatives and feedback will be continuously sought through working groups and surveys.
Project management and delivery	Successful digital transformation will be measured by the achievement of project milestones within assigned timeframes.



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