

Brief

Digital Readiness Framework and Sector Needs Analysis

November 2016

Introduction & Project Objective

The Hume Whittlesea Primary Care Partnerships (HWPCP) is a voluntary alliance of health and community care agencies operating in the local government areas of Hume and Whittlesea, located in outer Northern Metropolitan Melbourne.

It is one of 30 Primary Care Partnerships (PCPs) across Victoria that is funded by the Victorian Department of Health and Human Services as part of its PCP strategy. PCPs are the Department's preferred platform for driving health care initiatives that require a partnership approach.

The increasing expectations regarding efficiency, effectiveness and quality of care are highlighting the need for better information on the care provided to individual patients and to populations. The expanding use of electronic health records (EHRs) has the potential to overcome some of the challenges of gathering data in the primary healthcare setting, and there is interest in potential benefits of EHRs for patient care and for secondary analysis: outcome measurement, quality improvement, public health surveillance and research (Majeed et al, 2008).¹

The Australian Commission on Safety and Quality in Healthcare (2016) states that eHealth programs have the aim of improving the quality of health care. The main elements of the Commission's Safety in eHealth program are:

- Optimising safety and quality within the rollouts of clinical systems, with an initial focus on discharge summary and hospital medications management programs
- Using eHealth initiatives to improve the safety and quality of health care

It could be argued that when health care providers have access to complete and accurate information, patients receive better medical care. Complete electronic health records could improve the ability of practitioners to diagnose disease and reduce—even prevent—medical errors, thus improving patient outcomes.

The major objectives to this project are:

- Establish a baseline for member organisations of Hume Whittlesea PCP in regards to their organisational digital healthcare
- Undertake a current situational analysis of Government eHealth Policy and regulations, I/T and I/M innovation in eHealth, health informatics standards and interoperability standards
- Provide each organisation with a report, comparing their organisation to average of all organisations, on eHealth readiness and digital maturity
- Provide a framework for strategic direction on digital healthcare to member organisations

Local services will benefit from understanding the baseline position upon which our local digital picture will develop. This in turn will support local planning including sustainability and collaboration across the service system in partnership with the community, and shape resourcing commitments. Completion of the survey will also facilitate the benchmarking of information and communications technology (ICT) progress to date, and collect information from advanced service providers whose

learning can be critically shared with new and emerging service providers as they step into the ICT space.

In addition the survey and report will possess the capacity to inform other organisations across the Social Wellbeing and Health Care system that will have an interest in the outputs of the project, especially from an individual provider perspective seeking to extend its ICT integration focus.

Background

The World Health Organisation (2016) defines eHealth as ‘the combined use of electronic communication and information technology in the health sector.’ In more practical terms, eHealth is the means of ensuring that the right health information is provided to the right person at the right place and time in a secure, electronic form for the purpose of optimising the quality and efficiency of health care delivery. eHealth should be viewed as both the essential infrastructure underpinning information exchange between all participants in the Australian health care system and as a key enabler and driver of improved health outcomes for all Australians.

Healthcare organisations within the HWPCP area are at different stages of implementation of digital healthcare. Some organisations will still be using paper-based health records, where others have multiple electronic health records for clients/patients, and **may** be using electronic supports such as clinical support tools, secure eReferral and record systems that the client is able to access.

Using digital technology more effectively and ensuring providers are operating paper free at the point of care is critically important to dissolving the artificial barriers between care settings and professionals. It is essential to securing safe and sustainable health and care that supports healthier lives, delivering practical benefits for professionals and patients within local health and care economies. Where professionals continue to manage care in the face of unknown risks - patient experience, safety and effectiveness may suffer.

Many healthcare organisations in Australia are also not yet ready to participate in the ‘post-EHR world’, with the immediate future being still focused on planning the journey towards full digitisation and realising their near-term Information & Communications Technology and eHealth strategies. For some this is more about implementing and integrating existing technologies and systems such as clinical systems at the point of care; and for others it is about broader digitisation goals, for example - enterprise content management, patient flow and patient portals. McKinsey research offers some myth-busting insights for healthcare organisations wishing to begin their patient-enablement journey:

Myth 1: People don't want to use digital services for healthcare

Myth 2: Only young people want to use digital services

Myth 3: Mobile health is the game changer

Myth 4: Patients want innovative features and apps

Myth 5: A comprehensive platform of service offerings is a prerequisite for creating value

I/T adoption in health is both increasing and maturing on many fronts including the Electronic Medical Record adoption rate and use of mobile technologies. We should expect to see a multitude of discrete innovative technology based solutions being deployed across all health sectors. It is likely that these will be driven by the key challenges facing the broader health system including caring for an aging population, management of chronic disease, the need for hospitals to be increasingly efficient, population health management, personalised care planning and delivery and more health services delivered in the home and community.²

In digitally mature health and care economies, professionals are able to operate paper-free at the point of care, enabling new workflows to support collaboration and continuity of care. Through accessing the best current clinical knowledge, spotting signs of early deterioration and intervening proactively, professionals recognise and reduce unwarranted variation. Digital record systems

increasingly incorporate patient recorded data and preferences. Professionals and patients make more informed decisions and better choices, improving outcomes and efficiency.³

The area that has created the greatest challenge is the implementation of the Electronic Health Record (EHR). Organisations at the digital frontier have spend decades building and refining their EHR. Deriving the full benefits from information technology in health care requires a sophisticated and complex interplay between the technology, the 'thoughtflow' (clinical decision making) and the 'workflow' (the clinical pathway) – and this is particularly important for EHRs, which usually have multiple functions. Poorly designed information technology can disrupt thoughtflow and workflow; well designed information technology can optimise them. Benefits will also be increased with systems that, as far as possible, automate data entry.

A national survey of doctors (completed by Jamoom et al (2012))⁴ who are ready for meaningful use of EHRs offers important evidence:

- 94% of providers report that their EHR makes records readily available at point of care
- 88% report that their EHR produces clinical benefits for the practice
- 75% of providers report that their EHR allows them to deliver better patient care

Couch (2008)⁵ outlines that EHRs may improve risk management by

- Providing clinical alerts and reminders
- Improving aggregation, analysis, and communication of patient information
- Making it easier to consider all aspects of a patient's condition
- Supporting diagnostic and therapeutic decision making
- Gathering all relevant information (lab results, etc.) in one place
- Support for therapeutic decisions
- Enabling evidence-based decisions at point of care
- Preventing adverse events
- Providing built-in safeguards against prescribing treatments that would result in adverse events
- Enhancing research and monitoring for improvements in clinical quality

Around the world there is agreement that healthcare is at least a decade behind other industries in the use of information technology. The speed with which benefits either have or are likely to be achieved varies considerably. It is also clear that contextual and implementation factors play a big part in determining the ultimate impact. Striking examples of digital innovations that can deliver significant benefits relatively rapidly include:

- Apps that monitor vital signs and enable clinicians to identify and prioritise patients who require the most urgent care
- Apps that support staff working in the community

Early evidence also suggests that these apps deliver a high return on investment. In 2015:

- 43,000 Medical Apps were available on iTunes
- 500 million people around the world used a healthcare app⁶

The Therapeutic Goods Administration (TGA) released a guidance notice in September 2013 to clarify the distinction between medical software products and medical devices. Many apps could be considered medical devices under the definition in the Therapeutic Goods Act 1989, as they can be

used for the ‘..... diagnosis, prevention, monitoring, treatment or alleviation of disease injury or disability’.

Whether considered to be medical devices or not, the TGA suggests that, under its risk-based approach, the regulatory focus is on apps that prevent the greatest risk to users.

With the number of medical apps likely to rise alongside the increasing worldwide availability of apps generally, the TGA (as a founding member of the International Medical Device Regulators Forum (MDRF)) – is working to develop consistent approaches to the regulation of medical apps.

The US Food and Drug Administration also adopts a risk-based strategy, as highlighted by the release of the Mobile Medical Applications Guidance for Industry and Food and Drug Administration Staff in September 2013.⁷

The FDA uses three categories for assessing medical apps:

1. Apps that are not medical devices (These provide information to clinicians and consumers but do not provide any diagnostic or related process) e.g. MIMS
2. Apps that may be medical devices (These may meet the definition of a medical device but where some enforcement discretion will be applied) e.g. PT Time (exercise management)
3. Apps that are or will be regulated (These involve the use of the smart device to undertake or assist diagnostics or treatment procedures) e.g. Imaging tools, Hearing tests

The world of eHealth (aka healthcare technology, healthcare IT, digital healthcare, eHealth, telehealth and encompassing mHealth) is a rapidly evolving landscape of interwoven technologies, systems, data, informatics, applications, communication services and devices.

In a Mobile Consumer Survey 2015 (of a nationally representative sample of approximately 2,000 Australian consumers aged 18–75) Deloitte state that 79% of Australians now own a smartphone, with an even higher penetration rate expected next year. Collectively Australians look at their smartphones more than 440 million times a day. Devices are integral to how Australians live, organise and enjoy their lives, whether socially, professionally or personally. More than half the population check their smartphone within 15 minutes of waking, interacting continuously throughout the day without being prompted until disconnecting and switching off for the night. WiFi remains the Australian mobile consumer’s preferred way of connecting their smartphones (59%) and tablets (89%) to the internet. That said, not having access to WiFi doesn’t stop Australians seeking out connectivity through mobile networks. While 21% actively seek a WiFi network when out and about, only 14% will defer accessing the internet in the absence of WiFi. Some 65% of respondents are content roaming away from home and connecting to their mobile networks.

Commentators uniformly agree that future health information technologies and their adoption will be driven not only by the ongoing need for safe and effective healthcare, but also by the need for increasingly efficient healthcare delivery and that the transformational power of information technology has yet to be fully realised. But predictive sources do not necessarily agree on the drivers and impacts of current and emerging technology trends.

Technology has long been a valued resource in healthcare, but as previously mentioned, adoption has been slower than in other industries. Now, more than ever, it is critical to embrace technology, as it has become a must-have tool for transforming patient engagement, enabling personalised medicine, augmenting labour and contributing to better outcomes.

The healthcare IT leaders of today are fundamentally changing the way technology is used for care delivery. Healthcare consumers, providers and payers are embracing the transformational power of technology, and it's paying off in unprecedented efficiency and effectiveness across the care ecosystem.

The Accenture Healthcare IT Vision 2015 reveals five key trends:

- The Internet of Me
- Outcome Economy
- Platform (R)evolution
- Intelligent Enterprise
- Workforce Reimagined.

These trends clearly prove that digital is dramatically influencing the industry today, and it will continue to do so for decades to come.⁸

Mahek Shah, MD states in Forbes electronic newsletter that the top three technology trends underlying much of the change happening in healthcare right now (April 2015) are:

- Cloud based Electronic Health record
- Patient centric devices
- Big data analytics and patient access⁹

Meanwhile WIPRO technologies argues that organisations choosing eHealth solutions to ensure better clinical outcomes and enhance the patient experience are actually driven by:

- Using technology effectively to save time
- Ease financial pressures by cost savings or containing spiralling healthcare costs
- Speeding revenue cycle management through electronic payment technology
- Providing online healthcare services for members, employers, providers and brokers
- Reducing administrative errors
- Decreasing the incidence of medical errors
- Improving customer experience¹⁰

Almost four out of five Australians (78%) report that they look for information about medicines on the internet, according to a new 2016 survey released august 2016.

Three out of five people (58%) admitted they will sometimes or always look up information about health conditions on the internet to avoid going to see a health professional-with this number increasing to almost four in five people (79%) in the younger age category of 18-34 year olds.

This compares to only 1 in 3 people who said in a 2012 NPS MedicineWise survey that they were likely to search the internet for information about their symptoms before they visited their doctor.¹³

In Australia, technology development and adoption is also heavily influenced by legislative changes, public policy, quality and safety initiatives and funding priorities.

The traditional view that technology itself is not a driver of change is being challenged. Clinicians are leading the push to use BYO mobile devices and cloud technologies in the care of patients, often well ahead of the healthcare organisation policy makers, health information and ICT departments. New technologies are also being deployed on hospital wards to improve the management of patient care

and the flow of patients through the system. The implementation of these technologies often necessitates challenging and ultimately transforming traditional ways of working. However, in harnessing the transformational power of technology it must always be remembered that technology should never be adopted for technology's sake, rather that any eHealth initiative must deliver measurable benefits related to efficiency and/or the delivery of safe and effective care.

It is becoming apparent that a subsequent wave of IT powered enablement will be required to build a fully integrated technology enabled healthcare system. Integration is still the fundamental challenge, from both technology and service design and delivery perspectives.

Integration aims to put the needs of people at the centre of how services are organised and delivered and models of integration may vary. Assessing the effectiveness of integration is difficult and tends to focus on whether integration has relieved pressure on services, such as reducing hospital admissions. However, integration may and should improve user outcomes and experiences. To enhance the client experience, care needs to be integrated across GPs, hospitals, community health, mental health and human services agencies. Care remains fragmented and requires coordination at many different levels including governance. Services remain built around organisations and not around users.

Better integration between health and social support services has been mooted as a way to reduce costs, relieve pressure on services and improve user outcomes and experiences. However, there is little robust evidence that this is commonly achieved. Research has suggested that this may be in part, because integration can result in the identification of previously unmet need.

Integration should improve efficiency and value for money, making more effective use of existing infrastructure and should improve the user experience and health and wellbeing.

There should be many levels of integration and the challenge is integrating health and social support services. This is complex and the effects of integration may take a long time to become apparent.

Part of an integration strategy should include population health and wellness strategies and this could prove to be an effective way of tackling the wider social determinants of health. All services could focus on prevention of illness as well as treatment and use local data to tailor lifestyle interventions. Not forgetting that collaboration should include the patient or client as a partner in their health.

Outputs to be delivered

Phase 1 – Develop a Digital Readiness Paper, outlining best practice and standards

Development of a digital readiness paper which outlines best practice, evidence and creates a driver or imperative for agency engagement and adoption.

Undertake a current situational analysis of Government policy and regulations in relation to digital care, I/T and I/M innovation in eHealth, health informatics standards and interoperability standards.

- Scan and alignment of State and Commonwealth directions
- Literature Review on current I/T innovation in eHealth
- Provide overview of Health Informatics Standards
- Advice on APP regulations and standards regarding Internet of Things
- Compare Interoperability – open architecture (HL7, CDA, FHIR) integration standards
- Outline best practice and standards in digital care implementation

Phase 2 - Organisational Survey to establish a baseline for member organisations of Hume Whittlesea PCP in regards to their organisational digital healthcare readiness

Electronic Survey

Organisations will be invited to complete an initial electronic survey – a digital self assessment to establish a baseline position within the HWPCP catchment area regarding the effective use of information, technology and systems by health and care professionals.

Follow up interviews

If clarification or discussion required post survey, follow up interviews with organisations will be offered.

Reporting: Provide each organisation with a report, comparing their organisation to average of all organisations, on eHealth readiness and digital maturity

Produce a digital roadmap – an effective roadmap which details a baseline against which organisations can demonstrate how far they have and can progress.

Report to each organisation on eHealth readiness and digital maturity compared to consolidated, average results. This report will support organisations with internal planning and prioritisation of organisational strategic direction.

Complete report to HWPCP

Phase 3 - Provide a framework for strategic direction on digital healthcare to member organisations

Utilising the evidence and best practice standards documented during Phase 1, and the feedback from consultation and surveys from phase 2 – develop a paper which will lead the strategic direction of optimising and adopting digital care technologies for 2017 – 2019.

Reporting

Report on Phase three

Based on information obtained through Stages 1 & 2 detailed above, provide overall directions and advice

Presentation

Presentation of results and report to members and board of Hume Whittlesea Primary Care Partnership and Project Advisory Committee

Project Details – outline

Phase 1 – Digital Readiness Paper, outlining best practice and standards including, but not limited to:

- Scan and alignment of State and Commonwealth health informatics directions
- Literature Review on latest innovation of information technology and information management in health
- Provide overview of Health Informatics Standards including information security, messaging and communication, EHR interoperability, telehealth, clinical decision support
- Provide advice on status on APP regulations and standards regarding Internet of Things
- Compare Interoperability – open architecture (HL7, CDA, FHIR) integration standards

Reporting – digital readiness paper

Phase 2 - Organisational Survey

Organisations will be invited to complete an initial electronic survey – a digital self assessment to establish a position within the HWPCP catchment area regarding the effective use of information, technology and systems by health and care professionals.

Most organisations will complete a single assessment, however, where a single organisation provides services across multiple settings, they may wish to complete a separate assessment for each element.

Organisations can choose whether or not to complete the survey in one go, or in stages and can 'delegate' specific sections to colleagues with particular knowledge or expertise as required.

This is a self assessment and has been designed to produce a comprehensive view of providers' digital maturity without requiring an extensive and overly-burdensome data collection exercise. The survey does not require evidence or justification.

The self assessment will include, but not limited to, the following:

- What types of services does your organisation provide – Acute, Mental Health, Community Health, Aged Care, etc. etc.
- Wifi access to electronic health records
- Security – you are confident that the organisation is being properly managed and is safe from cyber threats
- Use of mobile devices at point of care and therefore access to digital health records
- Electronic or paper Health Record(s) used by the organisation (including My HR, NDIS, Aged Care Portal etc.)

- Do any of these record systems seamlessly share information i.e. interoperability of health platforms within organisations, interoperability of health platforms across organisations
- Information is collected once – staff do not have to copy or re-enter information from one system to another
- Use of telehealth and remote monitoring of service users
- Referral methods; use of eReferral or other methods of client referral ; Secure Messaging provider/platform(s), quality of referrals received
- Information Technology Governance, Leadership & Planning - 5 year I/T Plan, Annual I/T Plan. Disaster recovery plan for I/T
- Information Technology Budget as a percentage of annual income
- Policies / Procedures / Manuals / Privacy Issues / Security of Records / Audit of Records / Legality (informed consent, privacy, confidentiality etc.) - Does your workforce understand the organisations policies as identified
- Client access and client engagement
 - Client access to record – client portals
 - Client access to web based forms
 - Client strategies for different population groups e.g. tech savvy youth, homeless, aged population, carers, ATSI
 - Is the client the centre of care or is care disjointed dependent upon their condition i.e. delivering service in health silos; is there patient flow and integration within your organisation
- Use of electronic decision support tools e.g. guidelines, links to relevant and evidence based reference material, alerts, prompts, reminders, automation of electronic systems; has the electronic health record been used to change client outcomes (e.g. recall for pap screening, dental appointment, reassessment of health needs (diabetes, blood pressure check etc.))
- Coordinated care / integrated care – can your organisation provide coordinated, collaborative or integrated care without shared technology
- Care planning – internal / external. Teams collaborating in an asynchronous way; using technology for meetings
- Do you share eHealth technology with another organisation
- Use Internet of Things (IOT) – apps that integrate with medical records, wearable sensors, other technology
- Using technology for support groups e.g. chat rooms, facebook pages, twitter, online forums, online meetings, videoconference, can clients ask questions online
- Innovation – any innovation re health records been introduced in last 12 months; any innovation in organisation in using eHealth to minimise costs
- Accuracy of public information including registration of organisation and services on NHSD and other public information platforms
- eHealth and population health strategies – wellness vs illness model. Are strategies to address population health , or integrated health promotion embedded into your client journey?
- Does your organisation analyse health data to identify and improve health outcomes, improve services

If clarification or discussion required post survey, follow up interviews with organisations will be offered.

This self assessment will give a firm basis for planning, prioritisation and delivery within the health and care organisation. It will enable providers to monitor their progress against future developments.

Out of Scope:

- Digital Prescribing
- Medicines Management & Administration
- Orders & Results
- Subscribing Services

Phase Three - Framework for Strategic Direction on Digital Healthcare

Based on phase 1 and phase 2, develop a paper which will lead the strategic direction of optimising and adopting digital care technologies for 2017 – 2019.

Reporting to include, but not limited to:

Report and publication of a document that provides information and directional advice to service sector and State Government

Provide technical advice on future preferred interoperability standards

Provide technical advice on interoperability of EHRs within health services

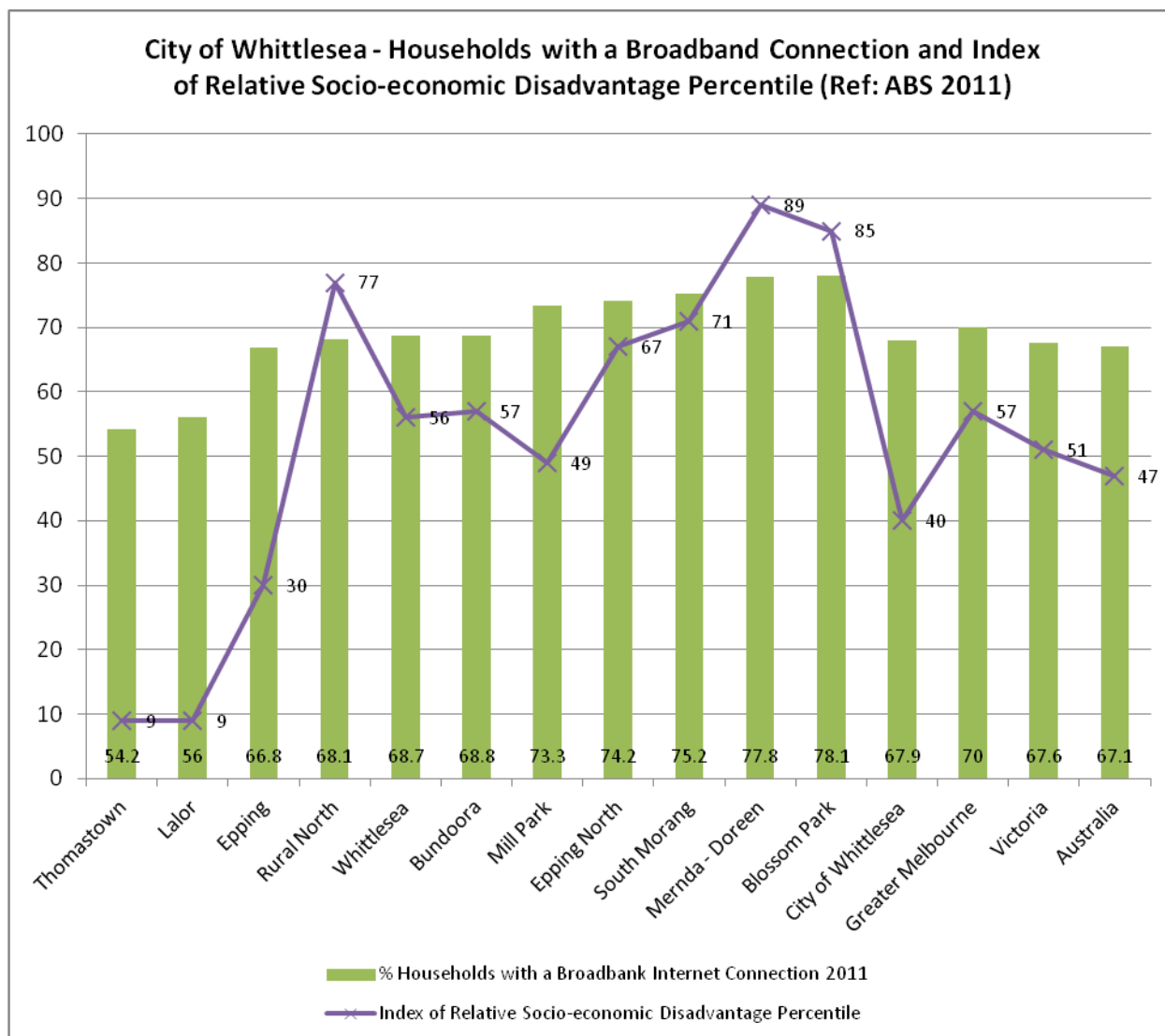
Develop a framework which will provide overall directions advice for organisations on interoperability standards both between and within organisations, including referral management

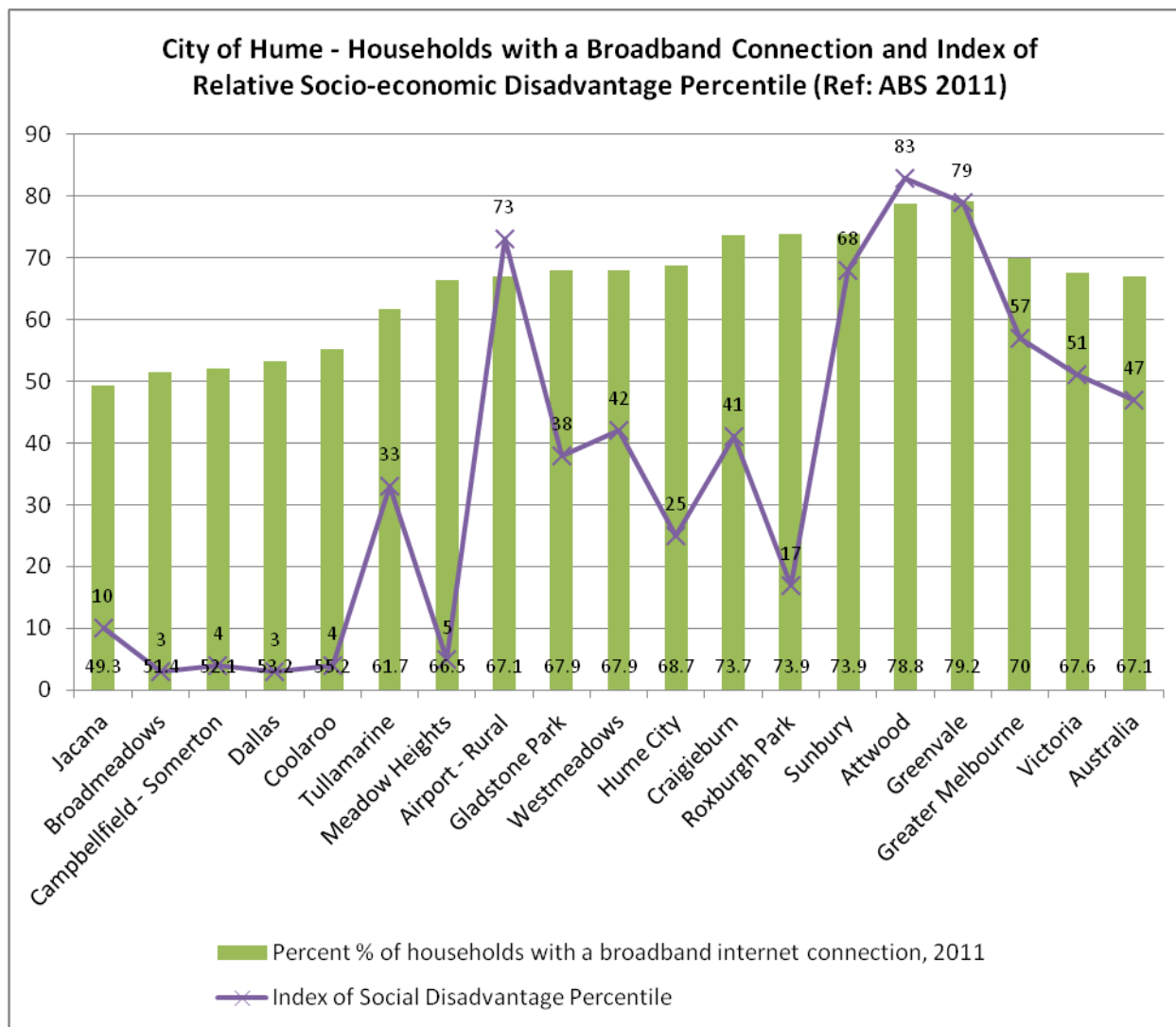
Advise on remote patient monitoring model with cost benefit analysis (could include monitoring of vital signs, weight, blood pressure, blood sugar levels, blood oxygen levels, heart rate monitoring, electrocardiogram, medication monitoring)

Develop a model of coordination or integrated health care which includes population health strategies, community health, mental health and social support services

Presentation

Presentation of results and report to members of Hume Whittlesea Primary Care Partnership and Project Advisory Committee





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