

# Project Overview

## PHASES with Primary Sense:

*Preventing Heart Attacks & Stroke Events through Surveillance with Primary Sense™*

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# 1 Executive Summary

In collaboration with the Queensland (QLD) Primary Health Network (PHN) Collective, QLD Health, and the Commonwealth, Country to Coast QLD (CCQ) has identified an opportunity to improve the management and treatment of cardiac risk factors across QLD.

This project aims to use Primary Sense™ and its ability to deliver patient-specific clinical decision support to enable early intervention, improving the treatment of cardiovascular disease (CVD) in primary care and to subsequently reduce the demand and cost to Queensland's hospital and health services.

## 1.1 Problem Statement

In 2019-20, the cardiovascular disease group accounted for 10% of admitted patient expenditure, and 7% of emergency department expenditure in Australia's public hospitals<sup>1</sup>, with 76% of Australians aged 45-74 at high CVD risk not receiving recommended preventative therapies<sup>2</sup>.

In addition, vulnerable and disadvantaged population groups are disproportionately affected by cardiovascular disease, with cardiovascular disease hospitalisation rates being higher for people living in low socioeconomic areas which increases with rurality<sup>3</sup>, and the rate of self-reported heart, stroke and vascular disease among Indigenous adults (11.4%) being more than twice the rate of non-Indigenous adults (5.4%)<sup>3</sup>.

The result of all of this is that there is a lack of effective and efficient early intervention and management of CVD which directly impacts the sustainability of Queensland's hospital and health services.

## 1.2 Opportunity

The Preventing Heart Attacks and Stroke Events through Surveillance (PHASES) with Primary Sense™ project seeks to undertake a proactive approach to address this challenge by leveraging the data sharing and data analytics capability of the Primary Sense™ tool, the Primary Health Insights™ platform, and the Johns Hopkins ACG® System (i.e. contemporary digital health capabilities) to deliver patient-specific, clinical decision support enabled surveillance and intervention, improving the treatment of cardiovascular disease in primary care.

By leveraging these tools and capabilities to manage care using the reviewed and published 'CVD Policy Model', benefits across ambulance, hospital emergency departments, inpatient and rehabilitation services are estimated at \$1.3 billion dollars over five years. Furthermore, with these tools and capabilities in place other benefits and use cases relating to high-risk patients and their subsequent high health service utilisation can also be explored.

CCQ and the QLD PHN Collective are proposing to undertake a state-wide implementation of Primary Sense™ and the Johns Hopkins ACG® System, conduct a public health campaign across QLD over 2 years, and then transition to an ongoing support and maintenance model (including license fees) for subsequent years.

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<sup>1</sup> AIHW 2022, Disease expenditure in Australia 2019-20, <<https://www.aihw.gov.au/reports/health-welfare-expenditure/disease-expenditure-in-australia-2019-20/data>>.

<sup>2</sup> Banks E, Crouch SR, Korda RJ, Stavreski B, Page K, Thurber KA, et al. Absolute risk of cardiovascular disease events, and blood pressure- and lipid-lowering therapy in Australia. *Med J Aust.* 2016;204(8):320.

<sup>3</sup> AIHW 2023, Heart, stroke and vascular disease: Australian facts, <<https://www.aihw.gov.au/reports/heart-stroke-vascular-diseases/hsvd-facts/contents/all-heart-stroke-and-vascular-disease>>.

### 1.3 Equity & Priority Population Considerations

CVD disproportionately affects priority groups and is a significant health issue within QLD and Australia, and it disproportionately affects those in priority groups<sup>4,5</sup>. In 2017-19, CVD hospitalisation and death rates among First Nations vs non-indigenous populations were 70% and 80% higher, respectively; 20% and 50% higher in lowest vs highest socioeconomic areas; and 30-40% higher in remote areas vs major cities<sup>6</sup>.

Furthermore, a systematic review<sup>7</sup> on the use of clinical decision support for CVD prevention in primary care for the Australian Department of Health found major and highly consequential lack of alignment between GP CVD risk calculators and current guidelines, meaning they misclassified 53% of high CVD risk people in the Aboriginal and Torres Strait Islander populations.

### 1.4 Intended Strategic Outcome

PHASES with Primary Sense™ is an innovative project that aims to increase early intervention of CVD in a primary care setting using contemporary digital health capabilities, thereby preventing cardiovascular disease (CVD) advancing to the point where it has negative outcomes to patients and their community, and subsequently reducing the demand and costs associated with addressing advanced stage CVD in the acute care sector.

This project is focussed on the surveillance, identification, early intervention, and ongoing management of CVD within the primary care sector.

### 1.5 Core Objectives

- Establish effective and appropriate governance for both the project implementation and the subsequent transition into ongoing oversight of the solution to ensure initial and ongoing benefits are realised.
- Implement digital capabilities to enable widespread surveillance and detection of patients with CVD risk in a primary care setting through the comprehensive deployment of the Primary Sense™ tool, associated data sharing agreements, and the Johns Hopkins ACG® System as a strategic platform, enabling ongoing innovation and enhanced digital health capability across the QLD Primary Care sector, and ensuring the model of care's full coverage.
- Increase engagement with stakeholders across Queensland and nationally to develop new and improved ways of managing CVD risk, to strengthen existing relationships, and improve business and relationship management practices.
- Develop and conduct a cohesive and coordinated state-wide public health promotion campaign, to raise consumer and health provider awareness, and encourage additional screening that results in an increase in the identification, treatment, and ongoing management of CVD within primary care.
- Evaluate the PHASES Project to validate outcomes achieved and contribute evidence towards successful models of care for primary intervention.

<sup>4</sup> Aust. Inst. Health and Welfare. Health expenditure Australia 2014-15.

<sup>5</sup> Aust. Inst. Health and Welfare. The 2<sup>nd</sup> Australian Atlas of Healthcare Variation. Canberra, 2017

<sup>6</sup> Aust. Inst. Health and Welfare. Heart, stroke and vascular disease - Australian facts. 2021.

<sup>7</sup> Agostino J, et al. Clinical decision support for cardiovascular disease prevention in primary care: a strategy to facilitate improved patient care. Report to the Australian Government Department of Health 2019.

## 1.6 Project Funding

The project is being jointly co-funded through the Queensland – Commonwealth Partnership, with funding commencing in the 2023-24 financial year with additional funding available each year through to FY2027-28.

## 1.7 Expected Long Term Benefits

- Costs benefits across ambulance, emergency department, inpatient and rehabilitation services are estimated at \$1.3 billion dollars over five years.
- 20% reduction in acute events on an annual basis.
- 100,000+ bed days avoided.
- \$360m savings annually (following statewide implementation)

## 1.8 Critical Success Factors

**Good Governance:** Develop effective and appropriate governance with genuine ownership and oversight of key partners for both the project implementation stage and subsequent transition into ongoing oversight of the solution.

**Utilising & Strengthening Relationships:** Leveraging the collective knowledge, skills and experience of key stakeholders and participants to achieve widespread adoption and use of the Primary Sense™ tool and the Johns Hopkins ACG® solution ensuring the model of care's full coverage.

**Meaningful General Practice Engagement:** Genuine and pragmatic engagement with, and support of, GPs and their practice teams to ensure that their participation and involvement is easy, attractive, and relevant. This includes partnering and collaborating with practices to explore and pilot new and changed business and practice workflows to ensure meaningful use of the digital health tools and capabilities.

**Effective Health Promotion Campaign:** Conducting consumer awareness and public health promotion campaign to increase consumer-driven CVD screening and subsequent early intervention in primary care, reducing admittance rates and impact to hospital and health services.

**Maturity and Usability of Primary Sense™:** Leveraging the combined vision and strength of the QLD PHN Collective to ensure the Primary Sense™ product is reliable, usable and meets the needs of the PHASES project, and can robustly support ongoing enhancements and future initiatives.

**Evaluation throughout the project lifecycle:** Ensuring that initial, interim, and ongoing health outcomes are analysed, understood, and accurately reported on to demonstrate the success of the project, identify opportunities for improvement, and to ensure transparency and confidence in the collaborative approach.

## 1.9 Alignment to National PHN Strategy (2023-24)

### 1.9.1 Core National PHN Functional Alignment

- *Coordinate and integrate local health care services in collaboration with Local Hospital Networks (known as Hospital & Health Services in QLD) to improve quality of care, people's experience and efficient use of resources.*
  - A State and Commonwealth funded partnership to empower and enable the early identification, treatment, and management of CVD in a primary care setting.
- *Commission primary care and mental health services to address population health needs and gaps in service delivery and to improve access and equity.*
  - State-wide implementation of Primary Sense™, resulting in ubiquitous use of Primary Sense™ across the state that will enable greater levels of autonomous alerting of CVD risk, and improvements to current therapies and treatments.
  - Widespread consumer health promotion campaign targeting urban, regional, and remote areas, resulting in greater numbers of patients being screening, particularly for priority populations.
- *Capacity-build and provide practice support to primary care and mental health providers to support quality care delivery.*
  - PHASES with Primary Sense™ is looking to fast track the ubiquitous installation of Primary Sense, along with develop new workflows to enable greater early intervention and management of chronic conditions in a primary care setting.

### 1.9.2 National PHN Health Reform Aims

- *Improve people's experience of care*
  - Leveraging Primary Sense™ to explore additional and alternate practice and patient workflows to enable a greater focus on the patient during and outside of a consultation with a GP.
  - Greater engagement and partnership between the acute and primary care sectors.
- *Improve the cost efficiency of the health system*
  - Based on research by Dr Greaves in Gold Coast PHN<sup>8</sup>, an anticipated \$1.3B savings over 5 years to QLD hospitals through reduction in acute incidents and events, realised through the detection, early intervention and ongoing management of CVD in a primary care setting.
- *Improve equity of access and outcomes*
  - The ubiquitous use of Primary Sense™ will enabling greater levels of autonomous alerting of CVD risk, and improvements to current therapies and treatments.
  - Widespread consumer health promotion campaign targeting urban, regional, and remote areas, resulting in greater numbers of patients being screening, particularly for priority populations.
  - Noting that implementation of the Primary Sense™ product within Aboriginal Medical Services and Aboriginal Community Control Health Organisations is

<sup>8</sup> Presentation to QLD PHNs - FINAL UPDATE- slide 8

currently out of scope, engagement with peak bodies and group including Queensland Aboriginal and Islander Health Council will be undertaken through *Stream 2 – Engagement*.

- Through *Stream 3 – Innovation*, the project will look to develop optimised CVD risk calculators that are more appropriate for First Nations people.
- *Improve the health of populations*
  - Leveraging Primary Sense™ to enable better patient management, improved prescriptions & adherence to medications in a primary care setting, resulting in a 20% reduction in acute events.
- *Improve the work life of health care providers*
  - Increased capability to understand current areas for improvement, assist in patient and practice workflows, as well as provide greater opportunities for financial sustainability for practices.
  - Greater engagement and partnership between the acute and primary care sectors.

## 2 PHASES Background

*Preventing Heart Attacks & Stroke Events through Surveillance* (PHASES) is an ambitious, innovative, and multi-pronged approach to reducing cardiovascular disease (CVD) championed by Professor Kim Greaves (*BSc, MBBS, MD, M Appl. Epidemiol., MRCP (UK), FRACP*), who is a Cardiologist and Epidemiologist in Queensland.

In partnership with Gold Coast Primary Health Network (GCPHN) and QLD Health, Professor Greaves' research has previously showed a large proportion of patients that presented to hospital with acute coronary syndromes were at high CVD risk prior to their event, and the majority were not on guideline-recommended treatment. In addition, general practitioners self-reported conducting CVD risk assessments in a low proportion of the eligible patient population.

GCPHN also commissioned a Primary Sense Strategic Benefits Assessment in 2022 that outlined the strong value proposition that Primary Sense™ could play in relation to public health outbreaks and prevalence mapping leading to avoided hospitalisation by managing non-urgent cases in primary care settings.

CCQ and the QLD PHN Collective have partnered with Queensland Health to commence implementing key aspects of the PHASES program across the state.

This project is focussed on the surveillance, identification, early intervention, and ongoing management of CVD within the primary care sector.

### 2.1 PHASES Program Goals

1. **CVD Surveillance System:** PHASES with Primary Sense™ project will provide the digital capabilities to enable widespread surveillance and detection of patients with CVD risk in a primary care setting.
2. **CVD Data Linkage:** Professor Greaves has secured funding through a Queensland Health Clinical Research Fellowship to link General Practice CVD risk data with hospitalisation and mortality data to understand how CVD risk impacts hospitalisation rates, and how well the new CVD risk prediction equation detects those at high risk in an Australian (Queensland) population. The study will estimate the number of heart attacks and strokes potentially averted if high CVD risk treatment was improved, as well as identifying gaps in CVD prevention. This PHASES Linkage project will run in parallel to the PHASES with Primary Sense™ project.
3. **Intervention to increase CVD preventative care:** PHASES with Primary Sense™ project will provide the digital capabilities to support the intervention and ongoing management of CVD, along with a range of consumer and provider education and engagement campaigns to drive increased screening and identification of CVD.
4. **Analysis:** Both the PHASES with Primary Sense™ and PHASES Linkage projects will be undertaking analysis and research to understand and demonstrate the health outcomes that have been achieved, and to refine and improve the identification, treatment and ongoing management of CVD in a primary care setting.
5. **Scale Up:** Through the outputs and outcomes delivered by the PHASES with Primary Sense™ and PHASES Linkage projects, it is envisioned that PHASES can be scaled up to a national level.