



# Health System Sustainability

NHMRC Partnership Centre

## About the Partnership Centre for Health System Sustainability

The Partnership Centre for Health System Sustainability (“the Centre”) is the third national centre funded under the NHMRC Partnership Centres for Better Health program. Established on 1 July 2017, the Centre is a collaborative of Australia’s best research investigators, expert advisors and system implementation partners who have joined forces to tackle interventions that will significantly improve the sustainability of our health care system. The Centre is jointly governed and funded to the value of \$10.75 million over five years by the **NHMRC, Bupa Health Foundation, NSW Health, Department of Health Western Australia and the University of Notre Dame Australia** (the Governance Authority).

## Objectives

The Centre responds to the identified need for improved health system sustainability which requires an alignment of funding, strategy, delivery, performance management and information to achieve optimal health outcomes, patient experience and value for money for all Australians.

The Centre’s objective is to explore the critical issues impacting the sustainability of the Australian health care system and to investigate and create implementable interventions that are appropriate from a clinical, patient and economic perspective, to improve health system performance sustainability. The outcomes of this work will be practical in nature and relevant to governments at all levels.

## Research Themes

This Centre will conduct research that will significantly influence the evolution of a resilient health care system that is affordable, cost-effective and delivers improved health outcomes for all Australians. The centre addresses three interconnected themes critical for ensuring health system sustainability:

- Using analytics, technology and shared data
- Reducing waste and low-value care
- Promoting better value for the health dollar

## Organising for Success

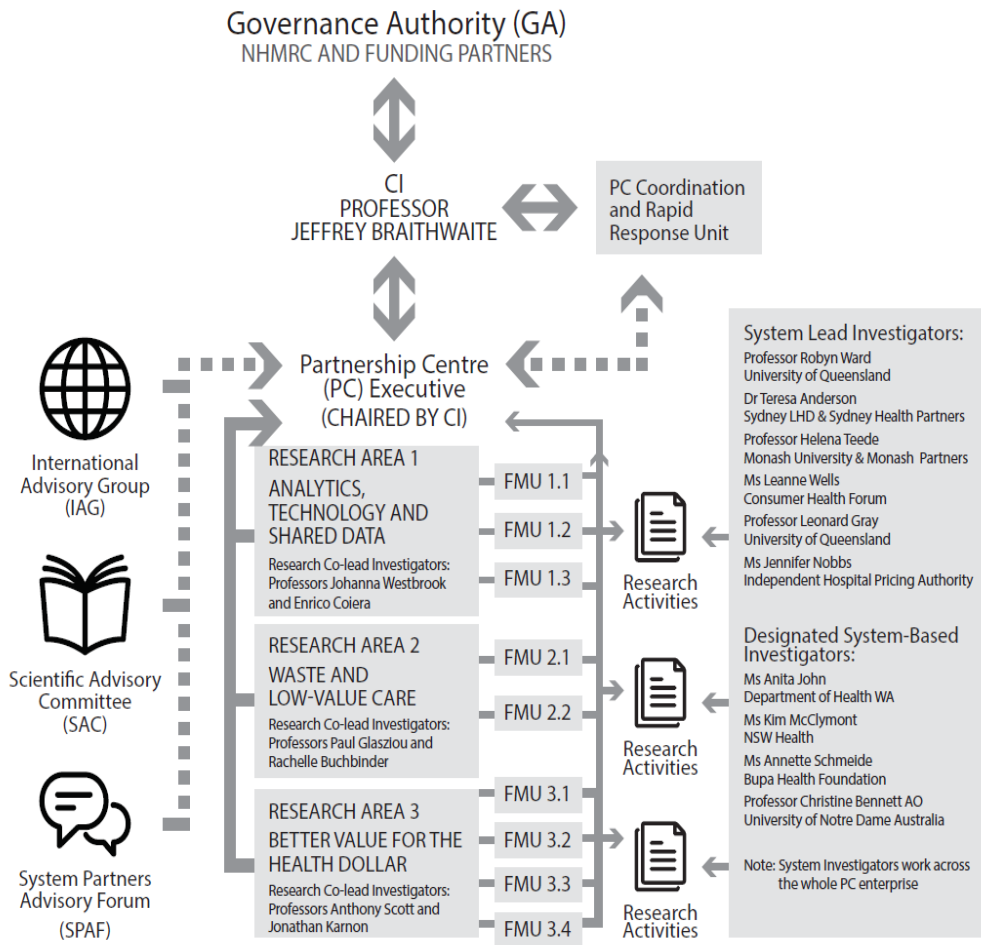
Professor Jeffrey Braithwaite, Foundation Director of the Australian Institute of Health Innovation at Macquarie University, leads the Centre which is comprised of 17 lead investigators, 20 expert advisors and over 40 system implementation partners drawn from Australia’s best experts in clinical and translational research; health services research and management; health service effectiveness and implementation; consumer engagement and strategy; telehealth and implementation; and casemix classification and costing.

The Centre’s research activity is overseen by the Governance Authority and guided by an International Advisory Group, an Australian Scientific Advisory Committee and a System Partners Advisory Forum. This co-production approach well positions the Centre to address the core research questions that will make a real difference to the sustainability of our health systems by ensuring that the research outcomes are relevant and able to be implemented in policy and practice.

The following figure describes the principal participants and structure of the Centre:

### Chief Investigator (CI):

**Professor Jeffrey Braithwaite**, Foundation Director, Australian Institute of Health Innovation (AIHI), Macquarie University Australia



### Designated System-Based Investigators (DSBIs):

**Ms Kim McClymont**, NSW Health  
**Ms Annette Schmiede**, Bupa Health Foundation  
**Professor Christine Bennett AO**, Dean of Medicine, University of Notre Dame Australia  
**Ms Anita John**, Director, Research Department of Health WA

### Research Lead Investigators (RLIs):

**Professor Enrico Coiera**, Founding Director Centre for Health Informatics, AIHI; Founding Professor Medical Informatics, Macquarie University, Australia  
**Professor Johanna Westbrook**, Founding Director Centre for Health Systems and Safety Research, AIHI, Macquarie University, Australia  
**Professor Paul Glasziou**, Founding Director Centre for Research in Evidence-Based Practice, Bond University  
**Professor Anthony (Tony) Scott**, Professorial Fellow, Melbourne Institute of Applied Economic and Social Research, The University of Melbourne

**Professor Jonathan (Jon) Karnon**, Professor of Health Economics, School of Public Health, University of Adelaide

**Professor Rachele Buchbinder**, NHMRC Senior Principal Research Fellow; Rheumatologist, Cabrini Health; Director, Monash Department of Clinical Epidemiology, Cabrini Institute; and Professor, Department of Epidemiology and Preventive Medicine, School of Public Health and Preventive Medicine, Monash University

### System Lead Investigators (SLIs):

**Professor Robyn Ward AM**, DVC Research, University of Queensland

**Dr Teresa Anderson**, Chief Executive, Sydney Local Health District (SLHD)

**Professor Helena Teede**, Executive Director Monash Partners; Head Monash Centre for Health Research and Implementation, Monash University; Health Care Improvement Lead, Monash Health

**Ms Leanne Wells**, Chief Executive Officer, Consumers Health Forum of Australia (CHF)

**Professor Leonard Gray**, Professor in Geriatric Medicine; Director Centre for Online Health; Director Centre for Research in Geriatric Medicine, The University of Queensland

**Ms Jennifer Nobbs**, Independent Hospital Pricing Authority (IHPA)

### System Partners Advisory Forum (SPAF)

#### Co-Chairs:

**Professor Clifford Hughes AO**, AIHI; President of the International Society for Quality in Health Care

**Dr Michael Walsh**, Chief Executive, Cabrini Health

### Scientific Advisory Forum (SAF) Co-Chairs:

**Professor Peter Brooks AM**, University of Melbourne

**Professor Lyn Gilbert**, University of Sydney

### International Advisory Forum (IAF) Co-Chairs:

**Professor Sir Liam Donaldson**, WHO

**Professor Rosa Sunol**, FAD, Barcelona, Spain

## Funding Partners

- Australian Government, National Health and Medical Research Council
- NSW Health
- BUPA Foundation (Australia)
- Government of Western Australia, Department of Health
- The University of Notre Dame, Australia

## Further information

If you would like to know more about the Centre, please visit our website at: <http://www.healthsystemsustainability.com.au/>

# RESEARCHING HEALTH SYSTEM SUSTAINABILITY



## THE RATIONALE

*While the health system in Australia performs relatively well on the international stage<sup>1</sup>, all developed countries share real concerns about future sustainability. According to the latest health expenditure data released by the AIHW<sup>2</sup>, Australia now spends 10% of GDP on health. World Bank data comparing all countries in 2014 found that Australia spends a little more of its GDP on health than the United Kingdom, a little less than Canada, almost half of what is spent in the USA and around 2% less than the average of all OECD members<sup>3</sup>. However, the relative ageing of our population, the increasing volumes of care provided per patient, rapid medical advancements and the worrying rise in out-of-pocket costs, all threaten system sustainability in Australia.*

*Government health spending in Australia represented 24.8% of taxation revenue in 2014-15<sup>4</sup> and is predicted to consume 43% of total tax revenue by 2040, according to a CSIRO futurist<sup>5</sup>. Despite recent reductions in the rate of growth in health spending, there is reason to believe that the increasing demands on healthcare services will eventually outpace the Australian health system's capacity to provide accessible, appropriate and quality care at an affordable cost unless multiple strategies are put in place to improve the cost-effectiveness of our health and care system.*

*Much has been written about fiscal sustainability as well as getting better value from what is already spent. This NHMRC Partnership Centre will explore, along with our partners in the health sector and industry, the issues impacting health care system sustainability and develop and evaluate a set of implementable interventions that are appropriate from a clinical, patient and economic perspective.*

*Our goal is for the Partnership Centre to be the flagship contributor to research and translational activities in health systems sustainability in Australia, with evidence and lessons for our international counterparts.*

## THE RESEARCH AGENDA

The NHMRC, along with funding partners—Bupa Foundation, NSW Health, Department of Health Western Australia and the University of Notre Dame Australia—contributed a total of \$10.75 million to be applied to three initial key areas of work for the Centre: Appropriateness and Quality of Care; Analytics and Root Cause Analysis; and Better Value for the Health Dollar. These areas are not mutually exclusive, nor do they aim to cover the entire spectrum of research that might benefit health system sustainability.

Within the funding envelope, the following nine Research Activities have been prioritised and grouped under three research areas. Each activity will be co-designed and co-produced with funding and system partners over the five years of the Grant. We anticipate that the summative system impact of all areas of research will be significantly larger than the contribution of each individual research activity.

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<sup>1</sup> E.C. Schneider, D.O. Sarnak, D. Squires, A. Shah, and M. M. Doty, *Mirror, Mirror: How the U.S. Health Care System Compares Internationally at a Time of Radical Change*. The Commonwealth Fund, July 2017.

<sup>2</sup> Australian Institute of Health and Welfare (AIHW) 2016. Health expenditure Australia 2014–15. Health and welfare expenditure series no. 57. Cat. no. HWE 67. Canberra: AIHW

<sup>3</sup> The World Bank, Health expenditure, total (% of GDP). 2014. Accessed at: <http://data.worldbank.org/indicator/SH.XPD.TOTL.ZS> 04 April 2017.

<sup>4</sup> AIHW, op.cit

<sup>5</sup> Ellery, D. Australia's spending on healthcare unsustainable, CSIRO futurist says. The Sydney Morning Herald. 2016 May 19; Sect. Health

## **Research Area 1: Using Analytics, Technology and Shared Data to Improve Health and System Performance**

The proposed activities in Research Area 1 recognise that innovation in the design and use of analytics, information and communication technologies can have an important role in driving efficiency, quality and safety. Using big data to detect and predict clinical variation and build automated decision support tools can help inform decisions made by clinicians and patients and improve service delivery and outcomes.

### **Research Area 1.1: Using shared health information to improve the appropriateness, quality and effectiveness of care**

**Research Lead Investigator – Professor Johanna Westbrook**

*Focus Questions:*

1. How can shared health information improve appropriate, effective and cost-effective medication management and reduce errors and adverse drug events in acute, community and aged care settings?
2. How can shared health information improve appropriate ordering, follow-up of diagnostic tests and consumer engagement?

*Anticipated Impact:*

Medications and diagnostic testing constitute the overall highest volume and cost interventions in community and hospital settings. Driving improvements in information technologies which target improved decision-making regarding these interventions has enormous potential to influence health outcomes of populations, and improve the cost-effectiveness and sustainability of health services.

### **Research Area 1.2: Big Data and the Quality, Effectiveness and Cost of Care**

**Research Lead Investigator – Professor Enrico Coiera**

*Focus Questions:*

1. How effective is predictive analytics in identifying and managing high-risk chronic disease patients?
2. What impact can analytics have on quality and efficiency of health service and hospital performance e.g. for feedback or benchmarking?

*Anticipated Impact:*

Analytics underpins every aspect of sustainability strategies that require data to monitor systems, detect critical events or at-risk patients. Development of robust, analytic-based tools; open source software; and best-practice implementation models that are context-sensitive, are all critical to achieving sustainable health services and systems.

### **Research Area 1.3: Telehealth**

**System Lead Investigator – Professor Len Gray**

*Focus Questions:*

1. How can the use of telehealth improve access, reduce costs and improve outcomes, in particular, the management of chronic disease?
2. What service models can best exploit the evolving, increasingly low-cost infrastructure?
3. How can primary care be re-engineered to exploit the various forms of telehealth to improve accessibility, reduce cost and increase patient engagement and self-management?

*Anticipated Impact:*

Implications for the future configuration of primary care practice in Australia in a telehealth-enabled world. Potential to improve patient convenience, engagements, satisfaction and health status at a reduced cost to the health system.

## **Research Area 2: Reducing Waste and Low-value Care**

Waste in health care is the delivery of care or services that do not benefit, or might even harm, patients. The consequence of waste in health care is not just harm to patients who receive unnecessary care but also the opportunity cost to patients who may fail to receive the necessary care.

The overall goal of Research Area 2 is to develop a clear and actionable understanding of the two major components of waste in Australia – overtreatment/overuse and sub-optimal care delivery or coordination – and enable the development of appropriate interventions to target the highest priority areas.

### **Research Area 2.1: Impact of different Sources of Health Care Waste**

**Research Leads – Professors Paul Glasziou, Rachelle Buchbinder and Jon Karnon**

*Focus Questions:*

1. What are the main contributors to the growth in “volume of care per case”?
2. Which of these constitute the highest priority areas of wastage?
3. What solutions may reduce this in the Australian context and what are the opportunities for disinvestment where interventions do not deliver improved outcomes?

*Anticipated Impact:*

Prioritised and quantified sources of wastage and low-value care. Identification and implementation of interventions to address these areas of waste.

### **Research Area 2.2: Lower Cost Delivery of Effective and Appropriate Services**

**Research Lead – Professors Rachelle Buchbinder and Paul Glasziou**

*Focus Questions:*

1. What are the possible lower cost locations or processes, and what do we already know about the evidence?
2. What is the current usage of these best-practice models, and what is the potential for system gain?
3. What are the promising models but with gaps in evidence?

*Anticipated Impact:*

Identification and testing of alternative care delivery models to achieve lower cost delivery services.

## **Research Area 3: Promoting Better Value for the Health Dollar**

Improving the provision of value-based health care requires a health system that provides the right set of incentives and funding models to achieve it. The aim of Research Area 3 is to improve the provision of value-based health care through the generation and use of new knowledge about economic incentives in funding models, priority-setting and decision-making within the healthcare system, and the role and effects of competition.

### **Research Area 3.1: Using Financial Incentives to Encourage Value-based Health Care**

**Research Leads: Professors Tony Scott and Rachelle Buchbinder**

*Focus Questions:*

1. How can payment models for care providers best incorporate performance, quality, efficiency and outcomes?
2. What funding models might deliver better value for the health dollar by incorporating quality and outcomes?
3. What is the international experience in value-based purchasing – how are these designed? How is success measured? Is success dependent on features of the health system? What are the unintended consequences?
4. What mechanisms are available to allow for the disinvestment in procedures, technology or services that have low value?

5. Is the introduction of activity-based funding promoting the right care at the right time and over time?

*Anticipated impact:*

This research will provide important knowledge for key stakeholders when designing and implementing funding models and financial incentives for doctors and hospitals to drive value-based health care.

### **Research Area 3.2: Priority-setting and Decision-making in Health Care Organisations**

***Research Lead – Professor Jon Karnon***

*Focus Questions:*

1. How do hospitals identify, prioritise and evaluate uptake of new models of care for quality improvement?
2. How do Primary Health Networks choose and evaluate programs that are designed to maximise value?

*Anticipated Impact:*

Develop a systematic approach to identifying, implementing and evaluating the potential value of new models of care across the health system, including for public hospitals and primary healthcare networks.

Tools and frameworks that explicitly consider opportunity cost to better inform priority-setting and scale-up decisions.

### **Research Area 3.3: Markets, Competition and Choice in Health Care**

***Research Lead: Professor Tony Scott***

*Focus Question:*

Does creating markets and contestability involving the private sector deliver better value for the health dollar?

*Anticipated Impact:*

Provide important knowledge for key stakeholders when structuring the system and promoting competition and choice in health care.

Inform the regulation of numbers and distribution of health care providers, and policies to increase choice and competition.

### **Research Area 3.4: Impact of a Collaborative Research Program on Cost-savings and Efficiencies in Healthcare Settings**

***Research Leads: Dr Delia Hendrie, Professors Sharon Parker and Elizabeth Geelhoed***

*Focus Questions:*

1. What has been the multi-level impact of a state-funded, collaborative, value-based research program designed to drive health system sustainability
2. Has the program embedded research into the public health system such that it has achieved transformative and sustainable improvements in the quality of health service delivery?

*Anticipated Impact:*

The overall outcome of the research activities will be a comprehensive understanding of the role that collaborative health services research can play when it incorporates financial measures relevant to health service managers, and engages front-line clinicians, in delivering cost-savings and efficiencies in health care settings.

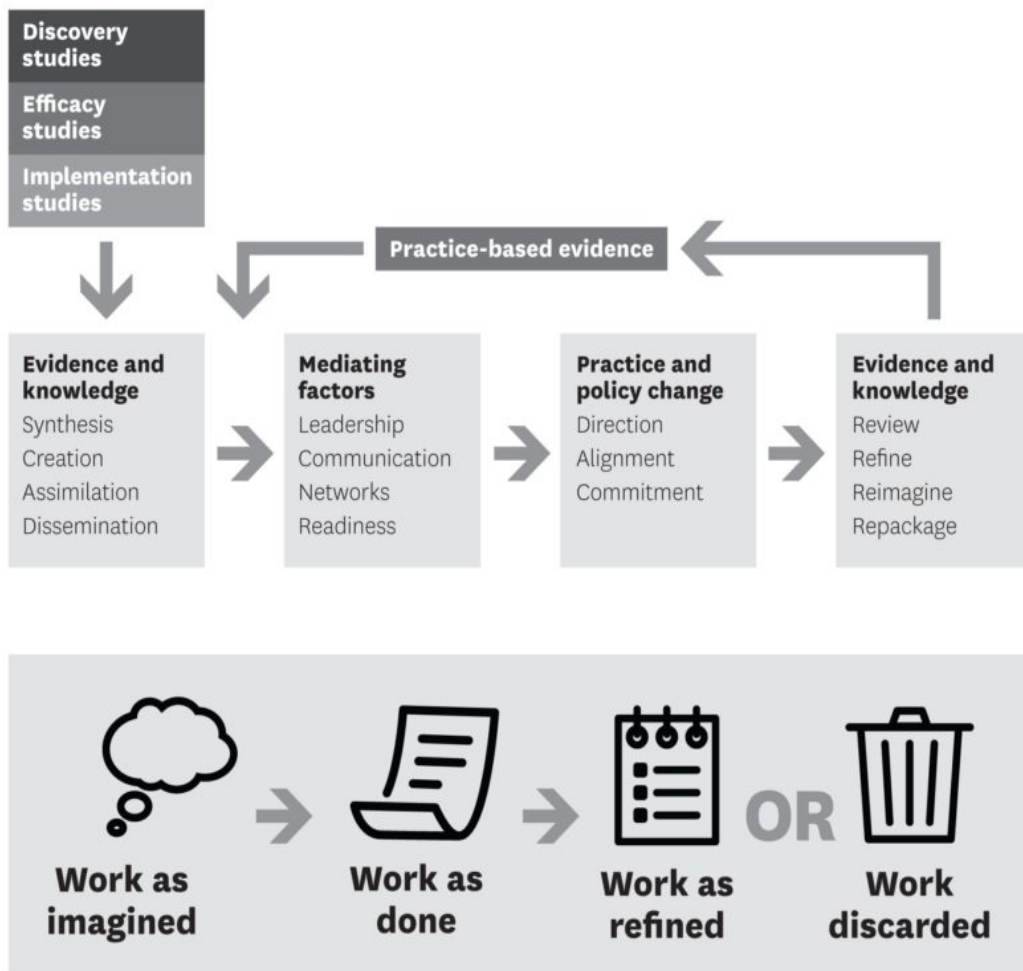
## RESEARCH APPROACH

Tackling health system sustainability is a pressing concern of many developed countries and requires a multi-dimensional, collaborative approach. It requires sensitivity to local context and an inclusive, rigorous research style if behaviour and policy change are to occur and endure.

The research approach taken by this Partnership Centre was guided by the NHMRC's request for applications, informed by a think tank of thought leaders and refined by extensive engagement with Lead Investigators and System Partners.

A unique Knowledge to Action model is being utilised to maximise the likelihood of promising research findings being translated rapidly into practice.

Figure 1: Knowledge-to-Action Model



Our vision is that the Centre's research findings significantly influence the evolution of a resilient health care system that is affordable, cost-effective and delivers improved health outcomes for all Australians.