

# NHMRC Partnership Centre for Health System Sustainability

## Year 2 Annual Report 2018-2019



Health System Sustainability  
NHMRC Partnership Centre

**VISION:** Our research findings will significantly influence the development of a resilient healthcare system that is affordable, cost-effective and delivers improved health outcomes for all Australians.

The NHMRC Partnership Centre for **Health System Sustainability** is a \$10.75 million five-year collaboration involving 17 lead investigators, 20 expert advisors and over 40 system implementation partners from around the country. The Centre is led by Professor Jeffrey Braithwaite and commissioned many research activities in 2018.

### **WHY IS THE PARTNERSHIP CENTRE NEEDED?**

Ageing populations, increasing rates of chronic and complex diseases, growing cost pressures from new medical technologies and medicines, wasteful spending on low-value care, inefficiencies due to system fragmentation and limited use of data and evidence to support reform have been identified as threats to the performance and sustainability of the health system.

### **WHAT DOES THE PARTNERSHIP CENTRE DO?**

We are committed to disseminating ideas and evidence to improve the performance of the health system so that it delivers care efficiently and effectively over the long-term. We believe that an effective and efficient healthcare system is the hallmark of a caring, well-functioning society. The Centre aims to maximise health system improvement in the real-world by bringing together all those who provide, plan or need healthcare. As our Chief Investigator, Professor Jeffrey Braithwaite, says “*collaboration underpins all productive change*”.

The three broad themes of our research include:

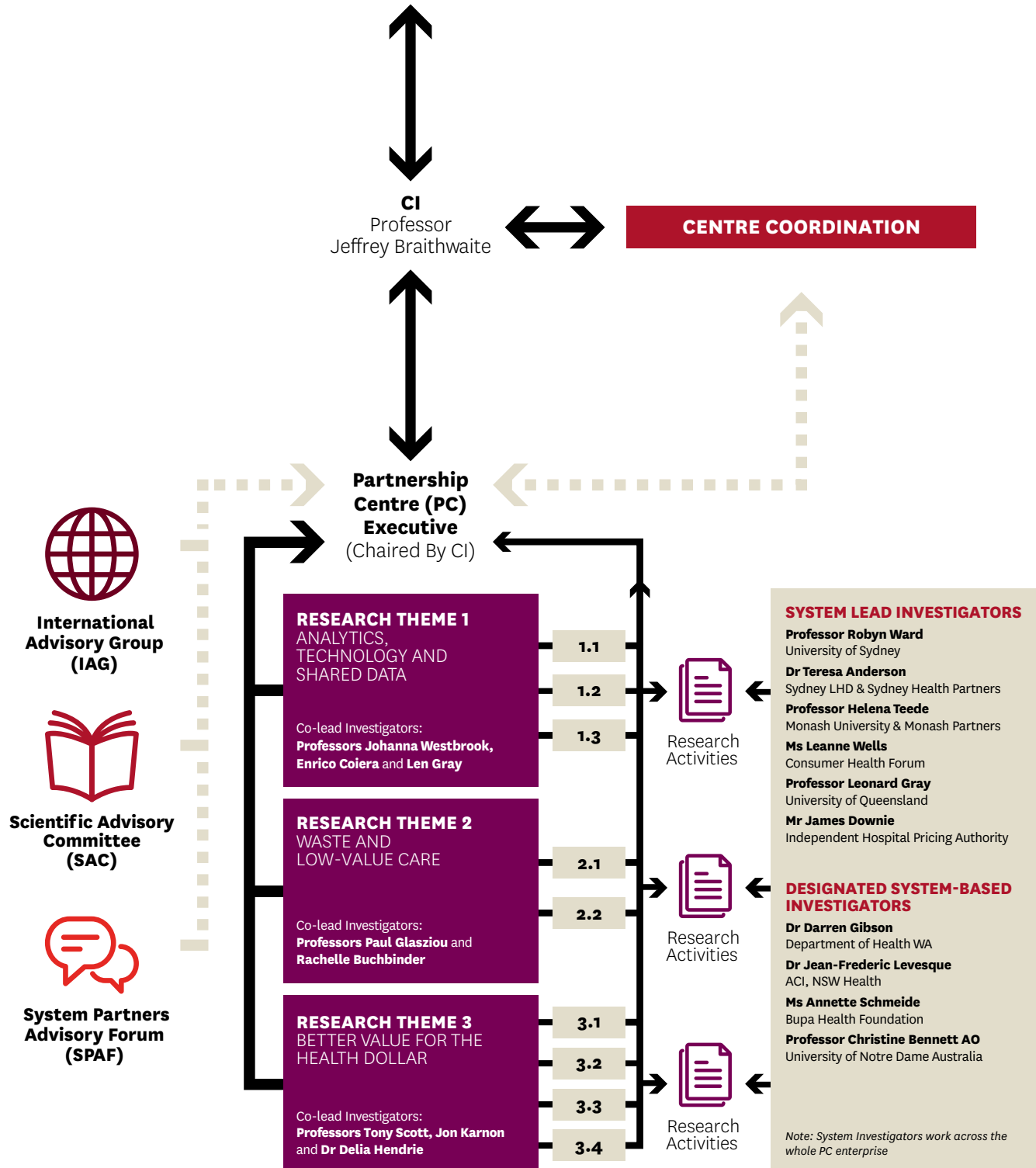
- Using analytics, technology and shared data
- Reducing waste and low-value-care
- Promoting better value for the health dollar


### **ACHIEVEMENTS IN 2018**

During our first full year of operation, we brought together for the first time what is already known, world-wide, about sustaining the performance of health systems into the future. We have engaged extensively with system partners and health consumers across Australia through research projects, consultations, joint meetings and workshops. This led to new collaborations, new publications and increased media engagement. Taken collectively, our research team have published over 150 peer-reviewed papers relating to health system sustainability.

# Governance Authority (GA)

NHMRC AND FUNDING PARTNERS





# Research streams

## USING ANALYTICS, TECHNOLOGY AND SHARED DATA

**Professors Johanna Westbrook, Enrico Coiera, Len Gray**

This research stream tackles important questions in informatics and healthcare including using big data to improve care, diagnostic testing and medication management, as well as designing analytics to guide better healthcare decisions. Researchers are also re-examining how telehealth might best be deployed and funded to improve healthcare across the country.

## HIGHLIGHTS

Research underway on the effect of electronic medication systems on medication error rates in paediatric settings will identify the extent to which these systems are effective at reducing error rates and associated harm. Research like this is helping us understand the impact of IT on the health system and how IT design and work processes can be targeted to improve their effectiveness.

As the Royal Commission into Aged Care Quality and Safety began, Professor Westbrook wrote in *MJA InSight+*: "...there's a wealth of information already available that could, and should, be telling us what is going wrong, where and why". Our research is testing new innovative models for applying data analytics to electronic health record data to provide a comprehensive picture of medication use in aged care facilities. This is providing new information about, for example, the extent of hyper-polypharmacy and antipsychotics uses – information that can be used to support immediate system improvements.

Another key area of research is the use of technology to provide information to patients and health professionals. A recent paper by Professor Coiera's team examined how programs – designed to help patients decide if their symptoms are serious or not – are evaluated. Their work uncovered significant issues with evaluation methods and program performance, which underscored the urgent need for new guidelines to evaluate the safety, effectiveness and cost of these systems. The team are also conducting a systematic review of studies on hospital dashboards in order to provide a comprehensive view of electronic dashboards, their functionality and usefulness.

Professor Gray's team has conducted a large scoping review and convened an expert panel to gain insight into how telehealth technology, in all its forms, impacts access to and quality of care. They have looked at factors including who bears the cost and if it is a new or alternative means of providing the service.

**...there's a wealth of information already available that could, and should, be telling us what is going wrong, where and why**



### REDUCING WASTE AND LOW VALUE CARE

**Professors Paul Glasziou, Rachelle Buchbinder**

Approximately, 30% of healthcare is wasteful or of low-value. Researchers from this stream are finding ways to reduce wasteful expenditure and deliver more cost-effective services.

### HIGHLIGHTS

Investigators are conducting foundational work using systematic reviews, workshops and webinars involving health system partners and consumer groups to co-design the practical applications of their research findings. Professor Buchbinder's team recently published a protocol for a scoping review investigating alternative service models for delivery of healthcare services in high-income countries. The final review is being prepared for publication.

A Delphi study conducted by Professor Buchbinder's group prioritised the 'best buys' in relation to alternative models of care described in the literature and this informed a stakeholder workshop. A list of high priority alternative models of care is being finalised in preparation for further investigation including trialling relevant models with health system partners.

Professor Glasziou's team recently published a novel analysis of population data, which estimates that over 40% of prostate cancers in Australia are over-diagnosed – that is, cancers detected that would not have become symptomatic nor had any health impact in the person's expected lifetime. The team have also recently completed and submitted an analysis of the rates of overdiagnosis for all cancers (which found a rate of 24% for males; 18% for females), and are making progress on non-cancer overdiagnosis rates.

### RATES OF OVERDIAGNOSIS FOR ALL CANCERS





### **PROMOTING BETTER VALUE FOR THE HEALTH DOLLAR**

**Professors Tony Scott, Jon Karnon and Dr Delia Hendrie**

Investigators in this stream developed new frameworks and new metrics to improve health system sustainability.

### **HIGHLIGHTS**

The in-DEPth (Evidence-informed, co-creation framework for the **D**esign, **E**valuation and **P**rocedure of **H**ealth services) framework, developed by Professor Karnon and Dr Kenneth Lo, supports wiser commissioning of primary health services by Primary Health Networks (PHNs). The framework has been published and disseminated to PHNs via a webinar attended by over 100 people and supported by the Health Services Research Association of Australia & New Zealand. The framework is being tested through partnership with two PHNs.

In addition, Professor Karnon and Mr Andrew Partington are working with the South Adelaide Local Health Networks to apply a local evaluation model to understand potential causes of comparatively long lengths of stay for ventilated patients. This data will inform the modelling of the costs and effects of alternative approaches to improving care for ventilated patients.

Professor Scott's team developed and tested a new method to measure hospital quality using a compound index. The index brings together diverse data sources to measure hospital performance more holistically, enabling the ranking of hospital performance and surveillance of changes when a new policy or management practice is introduced. The role of market competition is also a focus of study for Professor Scott.

Dr Hendrie and Professor Elizabeth Geelhoed are continuing their evaluation of the ten-year Research Translation Program (RTP) conducted by the Department of Health in Western Australia. The RTP provides funding to support investigator-initiated research projects to improve efficiencies and cost reduction in healthcare delivery in the WA public health system. In developing new frameworks to support uptake and sustainability of research-based solutions to improve state-wide health service performance, they plan to adopt a system dynamics model to facilitate a more comprehensive assessment of the pathways linking processes between research and its impact.