



Health System Sustainability  
NHMRC Partnership Centre

**YEAR 5** 2021-2022

# ANNUAL REPORT





# CONTENTS

<b>EXECUTIVE SUMMARY</b>	<b>3</b>
Executive Summary	4
Year 5 Outcomes	5
<b>PCHSS OVERVIEW</b>	<b>6</b>
PCHSS Research Leads & Partner Organisations	7
The Purpose of the PCHSS	8
Our Vision	8
Our Research Approach	8
Our Research and Projects	8
<b>USING ANALYTICS, TECHNOLOGY &amp; SHARED DATA</b>	<b>9</b>
<b>REDUCING WASTE AND LOW-VALUE CARE</b>	<b>11</b>
<b>PROMOTING BETTER VALUE FOR THE HEALTH DOLLAR</b>	<b>13</b>
<b>OBSERVATORY ON HEALTH SYSTEM SUSTAINABILITY</b>	<b>15</b>
<b>OUTREACH</b>	<b>17</b>
<b>LIST OF ORGANISATIONS PROVIDING IN-KIND SUPPORT</b>	<b>20</b>
<b>APPENDIX 1 PUBLICATIONS</b>	<b>21</b>

“ It took decades for the health system to get to where it is now. But it is under enormous post-pandemic pressures: from staff shortages, insufficient funding to do everything, and too much waste, inefficiencies, inequities and lack of coordination. To build sustainable, resilient health care and promote healthy lifestyles and wellbeing across the population we need high-quality research to underpin the gains that we must make, for everyone’s sake. And that is precisely where this Centre has contributed, in this, the fifth year of its operations.”

– Prof. Jeffrey Braithwaite

# EXECUTIVE SUMMARY





## EXECUTIVE SUMMARY

Now that the NHMRC Partnership Centre for Health System Sustainability (PCHSS) has concluded its fifth year of operation, it is time to reflect on our successes and how our work has contributed to the development of more resilient and sustainable health systems. Despite the COVID-19 pandemic continuing to present challenges, including lockdowns and ongoing strain on the health workforce, in Year 5 (1 July 2021 to 30 June 2022), PCHSS researchers continued our co-designed research with stakeholders from across the health system. In our fifth year, PCHSS research was supported by 75 health system researchers and 60 research academics, policy makers, managers and clinicians.

Building on experience from the COVID-19 pandemic, a key focus of this year's research was on the health system's response to crises, which includes the inescapable challenge of climate change. Such research included evaluations of alternative models of care, reducing healthcare waste, and understanding the contribution of healthcare – including the potential benefits of telehealth – to reduce greenhouse gas emissions. The PCHSS also held a successful online event following the 26th UN Climate Change Conference of the Parties (COP26) in Glasgow, Scotland, that explored the nexus of climate change and health system sustainability. This pioneering research by PCHSS investigators will be integral in driving climate-focused policy change for the future.

The PCHSS has also continued in our collaborations with health consumer organisations, such as the Consumers Health Forum of Australia (CHF), the Health Consumers NSW, and the Social Prescribing Network. These collaborations were expanded through interactive webinars and masterclasses throughout the year.

As in previous years, PCHSS was prolific in creating research outputs and evidence in Year 5, publishing over 215 peer-reviewed articles and conducting over 370 events, workshops, and webinars, including a webinar launching the results of the 2021 Healthcare Consumer Sentiment Survey. Research developed by the PCHSS was featured in over 300 media engagements, including popular press articles, radio, and television interviews.



### + PROFESSOR JEFFREY BRAITHWAITE

Chief Investigator (A), NHMRC Partnership Centre for Health System Sustainability  
Founding Director, Australian Institute of Health Innovation

These dissemination and engagement activities with external stakeholders leverage the translational value of the PCHSS's world-regarded research.

PCHSS investigators and system partners were awarded over \$26,379,171 in new leveraged funding in Year 5 to further their innovative, system-wide research approach. These contracts and grants enabled advanced research in fields such as low back pain treatment, improving quality of aged care, equitable access in remote primary health, and investment in cost-effective health services.

The unceasing drive and support of the multidisciplinary research team at the PCHSS is critical for continuing to instigate sustainable and valuable change on Australia's health system. We look forward to continued collaborations with our current industry and health system partners and to developing new connections as we enter our sixth year of partnership.

# HEALTH DATA

surgery 0  
clinical  
medications  
blood pressure  
lab test 52%  
vaccination  
BMI normal

## PCHSS YEAR 5 OUTCOMES

NHRMC PARTNERSHIP CENTRE FOR HEALTH SYSTEM SUSTAINABILITY ANNUAL REPORT 2021|2022



PCHSS-enabled publications



Leveraged funding

Conference presentations, webinars, reports



300



Media engagements

patient #08001

gender ♂  
age 23  
HR 95 bpm  
120/60  
ECHO D  
CD PWR<500  
Frq 2.0 MHz  
1800 mm  
AO 100%





# PCHSS OVERVIEW



# PCHSS RESEARCH LEADS & PARTNER ORGANISATIONS

The **NHMRC Partnership Centre for Health System Sustainability (PCHSS)** is a \$10.75 million, five-year collaboration involving 17 lead investigators, 20 expert advisors and over 40 system implementation partners from around Australia. The Centre includes five funding partners: The National Health and Medical Research Council, Bupa Health Foundation, NSW Health, the Department of Health Western Australia, and the University of Notre Dame. The Centre is led by Professor Jeffrey Braithwaite.

- + **CIA** Chief Investigator first listed
- + **RL** Research Lead Investigator
- + **\*** System-based implementation partner organisation

## NATIONAL COLLABORATORS

- Consumers Health Forum of Australia
- Aged Care Guild
- Independent Hospital Pricing Association
- HammondCare

## WESTERN AUSTRALIA

- A/Prof Delia Hendrie <sup>RL</sup>
- Prof Liz Geelhoed <sup>RL</sup>
- Dr Darren Gibson <sup>RL</sup>
- WA Dept of Health\*

## SOUTH AUSTRALIA

- Prof Jon Karnon <sup>RL</sup>
- PHN Country SA\*
- PHN Adelaide\*

## VICTORIA

- Prof Tony Scott <sup>RL</sup>
- Prof Rachele Buchbinder AO <sup>RL</sup>
- Prof Helena Teede AM <sup>RL</sup>
- Circle Health\*
- Monash Partners\*
- Dept of HHS Victoria\*
- PHN South Eastern Melbourne\*
- Cabrini Health\*

## QUEENSLAND

- Prof Paul Glasziou AO <sup>RL</sup>
- Prof Len Gray <sup>RL</sup>
- Prof Robyn Ward AM <sup>RL</sup>
- Metro South Health\*
- Queensland Health\*
- PHN Brisbane South\*
- James Cook University\*

## NSW

- Prof Jeffrey Braithwaite <sup>CIA</sup>
- Prof Enrico Coiera <sup>RL</sup>
- Prof Johanna Westbrook <sup>RL</sup>
- Dr Teresa Anderson AM <sup>RL</sup>
- Dr Jean-Frédéric Levesque <sup>RL</sup>
- Mr George Leipnik <sup>RL</sup>
- Mr James Downie <sup>RL</sup>
- Prof Christine Bennett AO <sup>RL</sup>
- A/Prof Annette Schmiede <sup>RL</sup>
- Sydney LHD and Sydney Health Partners\*
- Macquarie University Hospital\*
- PHN Sydney North Health Network\*

## ACT

- Ms Leanne Wells <sup>RL</sup>
- ACT Health\*

## TASMANIA

- University of Tasmania\*
- Dept of HHS Tasmania\*
- PHN Primary Health Tasmania\*

## FUNDING PARTNERS





## + THE PURPOSE OF THE PCHSS

Even before the COVID-19 pandemic, health systems worldwide were being challenged by multiple threats to their capacity to deliver high-quality care. These threats include 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 arising from system fragmentation, and limited use of data and evidence to support health system changes. In the face of these seemingly insurmountable challenges, it is salient to ask: how can health systems provide high-quality care to the right patient, at the right time, in the right place, and for the right cost? To provide practical, innovative solutions to answer this question, the PCHSS was established in 2017.

## + OUR VISION

The vision of the PCHSS is to produce research that contributes to the development of a resilient health system – one that is affordable, cost effective, and delivers improved health outcomes for all Australians.

## + OUR RESEARCH APPROACH

The PCHSS takes an innovative, system-wide approach to research. Our multi-disciplinary research team includes health economists, experts in artificial intelligence and machine learning, and in complexity and implementation science, as well as clinician and health consumer researchers. The work is co-designed with health system partners and industry partners, including private health insurers (e.g., Bupa, HCF, and Medibank), state health departments and independent governmental organisations (e.g., the Independent Hospital Pricing Authority (IHPA)). We also have researchers embedded within the health system, such as those working with MQ Health, the South Adelaide Local Health Network (SALHN), and the Sydney Children’s Hospitals Network (SCHN). All of these connections ensure that our research is targeted and implementable by policy makers.

Health consumers and consumer organisations are also integral to our research and our success in translating results. We work closely with Consumers Health Forum of Australia (CHF) embedding consumer-researchers in several projects, including a unique national survey of Australian health consumers, which highlighted a decline in healthcare affordability and access,

especially among people with chronic and complex conditions. Consumer-researchers were co-authors on four publications last year. We have also created master classes for consumers on implementation science and facilitated panel discussions with health consumer groups. We are currently working closely with the CHF to develop an Australian Consumer Leadership Academy.

## + OUR RESEARCH & PROJECTS

PCHSS’s research falls under three main themes: Using Analytics, Technology & Shared Data, Reducing Waste and Low-Value Care, and Promoting Better Value for the Health Dollar. The Centre is also home to the Observatory on Health System Sustainability, which conducts research on factors that affect the sustainability of health systems nationally and internationally.





**RESEARCH THEME**

# **USING ANALYTICS, TECHNOLOGY & SHARED DATA**





## RESEARCH THEME

# USING ANALYTICS, TECHNOLOGY & SHARED DATA

Under this Research Theme, we tackle 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. Our researchers are also examining how telehealth might best be deployed and funded to improve healthcare across the country.

Professor Johanna Westbrook and colleagues continue to demonstrate the benefits of electronic medication management. The evidence-based recommendations presented to Sydney Children's Hospitals Network (SCHN) were integrated into the electronic medication management system. Our researchers are now working on analysing data of a randomised clinical trial within the SCHN to further identify areas for enhancing system design features and support the improved integration of technology with clinical work practices in paediatrics.

PCHSS researchers are also collaborating with other NSW-based universities, including University of Sydney and University of New South Wales, and the NSW Agency for Clinical Innovation (ACI) to develop a clinical decision-support tool for personalised and cluster-based predictions of health outcomes for elderly frail patients. This research is underpinned by machine learning algorithms and will help inform the data analysis and informatics within the health system.

Professors Coiera and Farah Magrabi edited a special issue of the Journal of the American Medical Informatics Association (JAMIA), a peak journal in the field, on the role of informatics in climate change, which was published in October 2022. This special issue builds on previous research, including a scoping review on the role of digital health in meeting the challenges of climate change, and a study using interviews of NSW health system managers to explore the management of future crises.

Crises like the COVID-19 pandemic have made understanding the benefits and challenges of telemedicine even more critical. Our research identified cases where remote patient monitoring is appropriate (and inappropriate) and revealed the significant cost increase of MBS-subsidised telehealth services over the past few years. Research into the implementation of MBS telehealth items for dietetics services found that this was unlikely to cause increases in costs but can support Australians with chronic disease to eat better to improve their nutritional status and health outcomes.

## RESEARCH LEADS

+ **PROF JOHANNA WESTBROOK**  
Macquarie University



+ **PROF ENRICO COIERA**  
Macquarie University



+ **PROF LEONARD GRAY**  
The University of Queensland



**RESEARCH THEME**  
**REDUCING WASTE**  
**AND LOW-VALUE CARE**





## RESEARCH THEME

# REDUCING WASTE AND LOW-VALUE CARE

The cost of healthcare worldwide is rising unsustainably. Contributing to this trend are growing levels of wasteful and low-value healthcare along with outdated care delivery models that are unable to meet current needs and adapt to new realities. This Research Theme examines ways to reduce wasteful or low-value care, which accounts for 30% of all healthcare, and to deliver needed care more efficiently.

The overuse of diagnostic services and imaging is one instance of wasteful or low-value care within Australia's health system. PCHSS researchers Professor Rachelle Buchbinder and Professor Paul Glasziou collaborated with the Australian Government Department of Health (DoH) to complete an evaluation and audit designed to reduce musculoskeletal diagnostic imaging by Australian general practitioners (GPs). The results show that providing performance data to high-requesting GPs can reduce their imaging requesting over 6, 12, and 18 months. This research has led to another collaborative trial with the DoH, which together make a strong case for the reduction of healthcare waste in Australia.

Nearly 70% of surveillance colonoscopies do not conform to the NHMRC-endorsed interval guidelines. This is the surprising result of a baseline audit of six Victorian hospitals conducted by PCHSS researchers. These results inform further investigations into adherence to diagnostic/clinical guidelines, to reduce the occurrence of low-quality care.

PCHSS researchers are also informing policies about the implementation, accessibility, and future of telehealth services in Australia through seven systematic reviews conducted for the Commonwealth Department of Health. These reviews examined the clinical, safety, and economic impacts of telehealth compared with face-to-face service delivery.

Research in this Theme had previously shown that ~41% of prostate cancers are overdiagnosed (that is, cancer that would not have harmed the person if it had not been identified). Building on this research, Professor Paul Glasziou and colleagues conducted a study to examine the relationships between trends in prostate-specific antigen (PSA) testing, prostate cancer incidence, and mortality in Australia. The study found that decreases in mortality rates were less than the increases in incidence, suggesting significant overdiagnosis of prostate cancer after introduction of PSA testing. These findings are being used to inform new guidelines for PSA testing.

## RESEARCH LEADS

+ **PROF PAUL GLASZIOU**  
Bond University



+ **PROF RACHELLE BUCHBINDER**  
Monash University and  
Cabrini Health





**RESEARCH THEME**

**PROMOTING BETTER VALUE  
FOR THE HEALTH DOLLAR**



## RESEARCH THEME

# PROMOTING BETTER VALUE FOR THE HEALTH DOLLAR

This Research Theme covers four major areas: using financial incentives to promote value-based healthcare; priority setting and decision-making in healthcare organisations; the impact of markets, competition, and choice in healthcare; and the impact of a collaborative research program on cost savings and efficiencies in healthcare settings.

The quality of aged care facilities in Australia has made some distressing headlines in recent years. Researchers in this Theme are working to identify the factors that affect quality and pricing in aged care to improve the system. Last year, our researchers demonstrated that competition was not associated with better care quality or lower prices. This year, our research has shown that ownership status of aged care does affect quality and pricing, showing that government-owned facilities provide higher quality care at lower prices.

Building on previous research that used economic evaluation to support decision-making in local health services, Professor Jonathan Karnon and his colleagues developed, refined, and applied an elicitation exercise for this evaluative process. This study also developed a process for embedding published evidence to support decisions about the effectiveness of local intervention options in local economic evaluation. His team also conducted research on alternative models of care to reduce emergency department (ED) overcrowding. They found that telehealth consultations with GPs had the potential to reduce ED presentations.

The WA Department of Health Research Translation Program (RTP) funds short-term research projects to improve healthcare practice and efficiency. Associate Professor Hendrie and her team conducted a realist evaluation of the program and developed a program theory to determine how the RTP contributes to health system sustainability. Their research found that the RTP supported research led to policy and practice changes within local settings. It also contributed to research capacity building in health systems. These and other findings from the RTP program evaluation will help shape future funding initiatives to improve research translation.

## RESEARCH LEADS

+ **PROF ANTHONY SCOTT**  
Melbourne University



+ **PROF JONATHAN KARNON**  
Flinders University

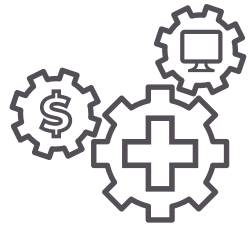


+ **A/PROF DELIA HENDRIE**  
Curtin University





## **OBSERVATORY ON HEALTH SYSTEM SUSTAINABILITY**



## OBSERVATORY ON HEALTH SYSTEM SUSTAINABILITY

The Observatory on Health System Sustainability conducts research on factors that affect the sustainability of health systems nationally and internationally. It generates research on how to make healthcare more cost effective, of higher quality, and more responsive to unforeseen stressors, and it works across stakeholder groups to see that such research is translated into changes in practice. Tackling activities ranging from consumer engagement to the evaluation of health interventions and domains ranging from implementation science to patient safety, the Observatory aims to foster the development of resilient, learning health systems.

### RESEARCH LEADS

+ **PROF JEFFREY BRAITHWAITE**  
Macquarie University



+ **PROF YVONNE ZURYNSKI**  
Macquarie University



A key achievement by the OHSS researchers involves the updating and deployment of the second iteration of the Health Consumer Sentiment Survey, co-produced with the Consumers Health Forum of Australia (CHF). This provided unique insights into the perspectives of health consumers pre-pandemic and during the pandemic. The report, *The Voice of Australian Health Consumers*, was launched with a webinar attended by the Honourable Greg Hunt and the Honourable Mark Butler, among other researchers. Professors Braithwaite and Zurynski with Ms Leanne Wells, CEO of CHF, published an analysis of the preliminary findings in the MJA Insight+ to coincide with the launch of the report.

The OHSS, in collaboration with Research Australia, have begun a new evaluation of research translation pathways in a private healthcare organisation. Projects aimed at creating more integrated pathways (RuralKidsGPS, the Rouse Hill Hospital Development), improving care transitions (Juvenile Diabetes Research Fund) are also continuing, as well as the evaluation with MQ Health of the HeartConnect program, a rapid access referral pathway and cardiology clinic.

Two new projects have also commenced, one which aims to build capacity among rare disease organisations, including establishing a community of practice for organisation leaders, and the other on accelerating translational research in liver cancer care and prevention. A report, *The Macquarie Indexes of Healthcare Productivity* was also published this year. It provides a set of new indexes that describe the quantity, price and combined expenditure related to hospital services delivery in Australia. These indexes are useful for health sector providers and payers in identifying drivers of productivity in the health system.

The future of healthcare system sustainability, particularly in the context of the climate change crisis, continues to be a key area of investigation for researchers at the Observatory. In December 2021, the PCHSS held an event titled *Exploring the Nexus of Climate Change, Human Health, and Healthcare System Sustainability*. This informed the Routledge book: *Handbook on Climate Change and Health System Sustainability*. This handbook, due for publication in the second half of 2023 is edited by Professor Jeffrey Braithwaite, Dr K-lynn Smith, and Professor Yvonne Zurynski.

This year, the Observatory continued to research areas such as learning health systems, how healthcare systems can deliver sustainable performance, and implementation science. We published 41 peer-reviewed papers and two reports on these topics.





# OUTREACH



## OUTREACH

The PCHSS hosted its very successful webinar series attended by audiences from across Australia and internationally. The webinars listed below, and other events are available on the PCHSS YouTube channel.



**6 JULY 2021**

### SHAPING A SUSTAINABLE HEALTH SYSTEM THROUGH COLLABORATION

The webinar was about the importance of capturing the experiences and journeys of health consumers to help build a more sustainable health system. The session featured a presentation from Ms Leanne Wells (CHF), followed by a panel discussion featuring health consumer advocates from around Australia. The conversation was moderated by Professor Zurynski. Seventy-five people attended the event online and the video has been viewed over 120 times on our YouTube channel (<https://www.youtube.com/watch?v=entTihxt3Fw>).



**28 SEPTEMBER 2021**

### PERSPECTIVES ON SOCIAL PRESCRIBING

Social prescribing is the practice of linking patients to social services and community-based programs to address the social determinants of ill health. This webinar included presentations from James Sanderson (Director of Personalised Care at the NHS, England), Carolyn Dew (Head of the Cultural Pharmacy), Professor Mark Morgan (Professor of General Practice at Bond University and Chair, RACGP Expert Committee – Quality Care), and Professor Zurynski followed by a lively panel discussion on how to increase the uptake of social prescribing in Australia. The event summary and Q&A are on our website (<https://healthsystemsustainability.com.au/webinarperspectives-on-social-prescribing/>) and the video, which has been viewed more than 130 times, is available on our YouTube channel (<https://www.youtube.com/watch?v=5HZ-3QcLbUg&t=87s>).



## OUTREACH (CONTINUED)



### 2 DECEMBER 2021

## EXPLORING THE NEXUS OF CLIMATE CHANGE, HUMAN HEALTH, AND HEALTHCARE SYSTEM SUSTAINABILITY

Fifteen distinguished speakers presented on the impact of climate change on the healthcare system and on how healthcare drives climate change. The two sessions were followed by panel discussions with questions from the audience. Over 380 people registered for the event. Videos of the presentations were published on PCHSS' YouTube channel and have been viewed over 200 times.

(<https://www.youtube.com/playlist?list=PLPcIBwZ1c4-zzC4GGIx0FgS6UgJEqORTK>).



### 28 MARCH 2022

## VOICE OF THE AUSTRALIAN HEALTH CONSUMER REPORT

PCHSS and CHF hosted the launch of the Voice of the Australian Health Consumer report.

The event was attended by over 250 people. A recording of the event is on our YouTube channel.

([https://www.youtube.com/watch?v=DKStNDpIZZI&list=PLPcIBwZ1c4-x\\_woEyW1Jxrk5pJq4QqCj0&index=2](https://www.youtube.com/watch?v=DKStNDpIZZI&list=PLPcIBwZ1c4-x_woEyW1Jxrk5pJq4QqCj0&index=2))

## LIST OF ORGANISATIONS PROVIDING IN-KIND SUPPORT (OTHER THAN FUNDING PARTNERS)

Adelaide PHN	MQ Health
Anglicare	Murray PHN
Baptist Care	NSW Agency for Clinical Innovation
Better Care Victoria	NSW Health
Black Dog Institute	NSW Pathology
Blacktown Hospital	NSW Regional Health Partners
BUPA	Outcome Health Australia
Cabrini Health	Prince of Wales Hospital
Consumers Health Forum of Australia	Queensland Health
Country SA PHN	RareVoices Australia
Curtin University	Research Australia
Department of Health and Human Services Victoria	Sax Institute
Department of Health Australia	Scalabrini
Digital CRC	SEALS
ECH	Social Prescribing Network
e-Health NSW	South Adelaide LHN
Gold Coast Hospital and Health Service	Spinifex Rural Health Research network
GW Collaboratory	Stroke Foundation Australia
Health Department Western Australia	Sydney Children's Hospital Network
Health Translation SA	Sydney Health Partners
Independent Hospital Pricing Authority	Sydney Local Health District
Loddon Mallee Rural Health Alliance	Uniting Aged Care
Metro North Hospital and Health Service	Victorian PHN Alliance
Metro South Health	West Victoria PHN
Monash Partners	





# APPENDIX 1 PUBLICATIONS

## PUBLICATIONS ARISING FROM PARTNERSHIP CENTRE FUNDED RESEARCH

### RS 1.1 SHARED HEALTH INFORMATION

1. Franco GS, Hardie RA, Li L, Imai C, Sezgin G, Li J, McLeod A, Pearce C, Georgiou A. Prostate-specific antigen testing of asymptomatic men in Australia: an observational study based on electronic general practice data. *Medical Journal of Australia*. 2021;215(5):228-9.
2. Hibbert PD, Molloy CJ, Wiles LK, Cameron ID, **Gray LC**, Reed RL, Kitson A, Georgiou A, **Westbrook J**, Arnolda G, Mitchell R, Rapport F, Estabrooks C, Alexander G, Vincent C, Edwards A, Carson-Stevens A, Wagner C, McCormack B, **Braithwaite J**. Designing clinical indicators for common residential aged care conditions and processes of care: the CareTrack aged development and validation study. *International Journal for Quality in Health Care*. 2022.\*
3. Ludlow K, **Westbrook J**, Jorgensen M, Lind KE, Baysari MT, Gray LC, Day RO, Ratcliffe J, Lord SR, Georgiou A, **Braithwaite J**, Raban MZ, Close J, Beattie E, Zheng WY, Debono D, Nguyen A, Siette J, Seaman K, Miao M, Root J, Roffe D, O'Toole L, Carrasco M, Thompson A, Shaikh J, Wong J, Stanton C, Haddock R. Co-designing a dashboard of predictive analytics and decision support to drive care quality and client outcomes in aged care: a mixed-method study protocol. *BMJ Open*. 2021;11(8):1-10.\*
4. Raban M, Gates P, Gasparini C, **Westbrook J**. How does antibiotic use in Australian residential aged care compare globally? A systematic review and meta-analysis. *Infection, Disease & Health*. 2021;26:S10-S11.
5. Raban MZ, Gates PJ, Gasparini C, **Westbrook J**. Temporal and regional trends of antibiotic use in long-term aged care facilities across 39 countries, 1985-2019: systematic review and meta-analysis. *PLoS One*. 2021;16(8):1-24.
6. Raban M, Gonzalez G, Nguyen A, Li L, Newell B, **Westbrook J**. Reducing antibiotic prescribing using

nudges: a systematic review of interventions in primary care. *Infection, Disease & Health*. 2021;26(1):S11.

7. Ratcliffe J, Khadka J, Crocker J, Lay K, Caughey G, Cleland J, Gordon S, **Westbrook J**. Measurement tools for assessing quality of life, consumer satisfaction and consumer experience across residential and in-home aged care. 2021.
8. Siette J, Knaggs GT, **Zurynski Y**, Ratcliffe J, Dodds L, **Westbrook J**. Systematic review of 29 self-report instruments for assessing quality of life in older adults receiving aged care services. *BMJ Open*. 2021;11(11):e050892.\*
9. Seaman KL, Jorgensen ML, Raban MZ, Lind KE, Bell JS, **Westbrook J**. Transforming routinely collected residential aged care provider data into timely information: current and future directions. *Australasian Journal on Ageing*. 2021;40(3):262-8.

### RS 1.2 BIG DATA AND THE QUALITY, EFFECTIVENESS AND COST OF CARE

1. **Coiera E**, **Braithwaite J**. Turbulence health systems: engineering a rapidly adaptive health system for times of crisis. *BMJ Health & Care Informatics*. 2021;28:e100363.\*

### RS 1.3 TELEHEALTH

1. De Guzman KR, **Snoswell CL**, Taylor ML, **Gray LC**, Caffery LJ. Economic evaluations of remote patient monitoring for chronic disease: a systematic review. *Value in Health*. 2022; Online ahead of print.
2. Hibbert PD, Molloy CJ, Wiles LK, Cameron ID, **Gray LC**, Reed RL, Kitson A, Georgiou A, **Westbrook J**, Arnolda G, Mitchell R, Rapport F, Estabrooks C, Alexander G, Vincent C, Edwards A, Carson-Stevens A, Wagner C, McCormack B, **Braithwaite J**. Designing clinical indicators for common residential aged care conditions and processes of care:

the CareTrack aged development and validation study. *International Journal for Quality in Health Care*. 2022. Online ahead of print.\*

3. Ludlow K, **Westbrook J**, Jorgensen M, Lind KE, Baysari MT, **Gray LC**, Day RO, Ratcliffe J, Lord SR, Georgiou A, **Braithwaite J**, Raban MZ, Close J, Beattie E, Zheng WY, Debono D, Nguyen A, Siette J, Seaman K, Miao M, Root J, Roffe D, O'Toole L, Carrasco M, Thompson A, Shaikh J, Wong J, Stanton C, Haddock R. Co-designing a dashboard of predictive analytics and decision support to drive care quality and client outcomes in aged care: a mixed-method study protocol. *BMJ Open*. 2021;11(8):1-10.\*
4. **Snoswell CL**, Taylor M, Caffery LJ. Why telehealth does not always save money for the health system. *Journal of Health Organization and Management*. 2021;35(6).
5. **Snoswell CL**, Taylor ML, **Gray LC**, Caffery LJ. International remote patient monitoring programs. Report for the NHMRC Partnership Centre for Health System Sustainability. 2022/01/13.
6. **Snoswell CL**, Smith AC, Page M, Scuffham P, Caffery LJ. Quantifying the societal benefits from telehealth: productivity and reduced travel. *Value in Health Regional Issues*. 2021;28:61-6.
7. Vitangcol K, **Snoswell CL**, **Gray L**, Scott A, Caffery LJ. The impact of telehealth financial incentives on telehealth service uptake in Australia. Report for the NHMRC Partnership Centre for Health System Sustainability. 2022/02/22.
8. **Zurynski Y**, Ellis LA, Dammary G, Smith CL, Halim N, Ansell J, Gillespie J, Caffery L, Vitangcol K, Wells L, **Braithwaite J**. The Australian health consumer sentiment survey: preliminary analysis and key findings. NHMRC Partnership Centre for Health System Sustainability; 2022/03/07.\*

\* This publication was co-authored by multiple Streams and is listed more than once but was only counted once in the total number of publications.



## + SELECTED PUBLICATIONS

### RS 2.1 IMPACT OF DIFFERENT SOURCES OF HEALTHCARE WASTE

1. Bakhit M, Baillie E, Krzyzaniak N, van Driel M, Clark J, **Glasziou P**, Del Mar C. Antibiotic prescribing for acute infections in synchronous telehealth consultations: a systematic review and meta-analysis. *BJGP Open*. 2021;BJGPO.2021.0106.
2. Bell KJL, White S, Hassan O, Zhu L, Scott AM, Clark J, **Glasziou P**. Evaluation of the incremental value of a coronary artery calcium score beyond traditional cardiovascular risk assessment: A systematic review and meta-analysis. *JAMA Internal Medicine*. 2022;182(6):634-42.
3. Carlini J, Bahudin D, Michaleff ZA, Plunkett E, Shé É N, Clark J, Cardona M. Discordance and concordance on perception of quality care at end of life between older patients, caregivers and clinicians: a scoping review. *European Geriatric Medicine*. 2022;13(1):87-99.
4. Doust JA, **Glasziou P**, d'Emden MC. A large trial of screening for gestational diabetes mellitus in the United States highlights the need to revisit the Australian diagnostic criteria. *Medical Journal of Australia*. 2022;216(3):113-5.
5. Greenwood H, Krzyzaniak N, Peiris R, Clark J, Scott AM, Cardona M, Griffith R, **Glasziou P**. Telehealth versus face-to-face psychotherapy for less common mental health conditions: systematic review and meta-analysis of randomized controlled trials. *JMIR Mental Health*. 2022;9(3):1-16.
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### RS 2.1 IMPACT OF DIFFERENT SOURCES OF HEALTHCARE WASTE

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\* This publication was co-authored by multiple Streams and is listed more than once but was only counted once in the total number of publications.



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