Centre for Big Data Research in Health

Annual Report 2020
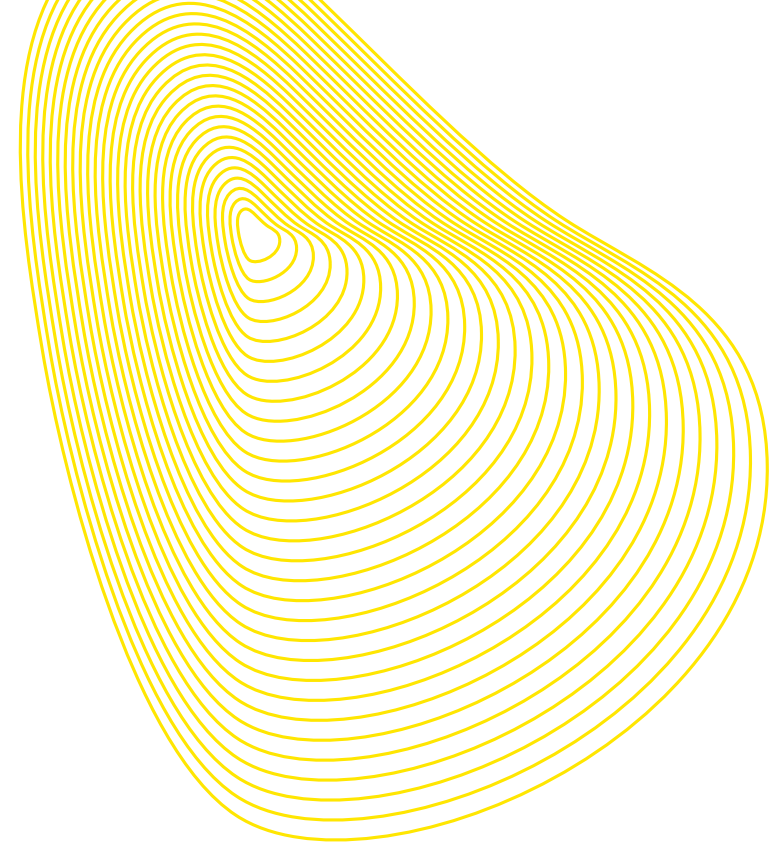
UNSW

UNSW
SYDNEY

CENTRE FOR
BIG DATA RESEARCH
IN HEALTH

Contents

Centre for Big Data Research in Health

UNSW SYDNEY | CENTRE FOR BIG DATA RESEARCH IN HEALTH

Director's message

I am very pleased to share with you the achievements and successes of the Centre for Big Data Research Health in 2020, our 6th full year of operation.

The Centre started the year in our new location on Level 2 of the AGSM building, a fantastic space with facilities that will support our Centre's work and foster collaboration and teamwork. However, before we were able to settle in and fully unpack COVID-19 arrived.

COVID-19 had significant impacts on the work of the Centre, necessitating a rapid shift to fully online teaching and remote working. I would like to thank the staff of the Centre for how they rose to the challenges and produced stellar outcomes, while enduring lockdowns, uncertainty, home schooling, separations from family, and endless Teams and Zooms calls. Our team also made some important, rapid, contributions to COVID-19 modelling methodology and research.

In 2020 our students no longer had opportunities to enhance their learning through face-to-face interactions with teachers and peers. However, they displayed great adaptability and achieved strong results, as demonstrated by outstanding final presentations of the Master of Science in Health Data Science dissertation students. I would like to congratulate our 2020 graduates from the Master of Science in Health Data Science program (Samira Afrazi, Pei-Chen Hsu and Yalin Zhao) and wish them every success in their new careers as Health Data Scientists.

Finally, I warmly congratulate are our two 2020 PhD graduates, **Dr Stella Settumba Nalukwago and Dr Mei Lin Lee**, and wish them all the best as they forge their post-doctoral pathways.

Louisa Jorm

Professor, Faculty of Medicine

Director, Centre for Big Data Research in Health

Centre for Big Data Research in Health

UNSW SYDNEY | CENTRE FOR BIG DATA RESEARCH IN HEALTH
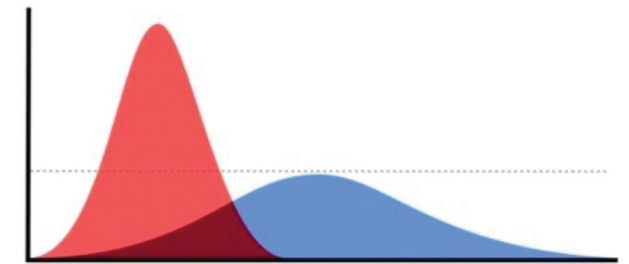
Research highlights

2020

We can "shrink" the COVID-19 curve, rather than just flatten it

In March 2020, medically-trained epidemiologist Dr Tim Churches and Professor Louisa Jorm, Foundation Director of the Centre for Big Data Research in Health, explained how their epidemiological modelling showed public health interventions could do more than just "flatten" the COVID-19 epidemic curve.

Dr Churches and Professor Jorm said: "Leaders and officials who are currently making crucial decisions about responses to COVID-19 can take heart that 'flattening' the epidemic curve will not inevitably result in a need to apply drastic social distancing measures over a much longer period of time.

"These public health measures, in particular, intensive case-finding and strict enforcement of isolation and quarantine, can potentially 'shrink' the curve, resulting in many fewer cases and deaths overall, with minimal or no extension to the duration of the epidemic.

"Our work illustrates the complexity of predicting the potential impact of public health interventions on the

course of the COVID-19 epidemic and it is important to note that our model has been developed very rapidly at a time when we don't have good data to inform many of our assumptions.

"We shall continue to refine our model and it is freely available for others to use, test and further develop to ensure that policy actions are informed by the best possible evidence (we have described the model in detail on Tim Churches' website and have made the code available on Github)." For the full story.

Chances of having a second IVF baby after fertility treatment for the first child 'favourable': new report

For the first time, a study – led by the Centre for Big Data Research in Health – estimated a woman's chances of having a second IVF baby. The research showed women had a good chance of having a second child with the help of fertility treatment after their first child was born this way.

Researchers analysed data from more than 35,000 women and found that after a live birth using IVF, also known as assisted reproductive technology (ART), a woman's chances of a second ART baby were between 51 per cent and 88 per cent after six cycles of treatment.

While the study presented population estimates and researchers noted every couple is different, they hoped their findings could be used to counsel patients.

Senior author Professor Georgina Chambers, Director of the National Perinatal Epidemiology and Statistics Unit in the Centre for Big Data Research in Health, said: "We also found that the chances of a second ART baby decreased with increased maternal age." For the full story.

Centre for Big Data Research in Health

UNSW SYDNEY | CENTRE FOR BIG DATA RESEARCH IN HEALTH

Popular high blood pressure drug linked to increased skin cancer risk in older Australians

Hydrochlorothiazide use increases older people's risk of developing skin cancer, a study by Centre for Big Data Research in Health scientists showed – but the researchers warned against suddenly stopping the medicine.

The drug, one of the most prescribed high blood pressure drugs in Australia, contains photosensitising properties, which can make skin more sensitive to the sun.

The findings were based on a big data analysis of skin cancer rates in a case-control study among older Australians and supported similar findings from previous international studies.

Dr Benjamin Daniels, lead author of the study and Research Fellow at the Centre for Big Data Research in Health, said: "We found increased risk for developing malignant melanoma and squamous cell cancer of the lip (lip cancer) with hydrochlorothiazide use. For the full story.

Cardiovascular toxicity of targeted therapies for cancer: an overview of systematic reviews

Dr Marina van Leeuwen, a cancer epidemiologist in the Centre for Big Data Research in Health, has led new research that synthesises the evidence of cardiovascular toxicity of targeted therapies for cancer.

The findings will assist clinicians and patients when managing cardiovascular health. The research was performed in collaboration with experts in oncology, cardiovascular disease and people affected by cancer. This research has been published in the Journal of the National Cancer Institute Cancer Spectrum.

'Quite amazing': One in 10 babies born to women over 35 now conceived via IVF

The 2020 report of the Australia and New Zealand Assisted Reproductive Technology Database (ANZARD), produced by the National Perinatal Epidemiology and Statistics Unit in the Centre for Big Data Research in Health, was the featured as a front page article in the Sydney Morning Herald and The Age on Sunday newspapers.

For the complete ANZARD report.

Dr Mark Hanly talks COVOID R package (eRUM 2020)

Dr Mark Hanly from the Centre for Big Data Research in Health, presented an invited talk on the COVOID R package at the European R Users Meeting (eRUM) 2020. COVOID stands for Covid-19 Opensource Infection Dynamics, and the COVOID package provides users with a set of opensource tools for modelling Covid-19 and other infectious diseases while incorporating time-varying interventions.

The COVOID package was developed by Oisin Fitzgerald, Mark Hanly and Tim Churches, and was joint winner of the eRUM CovidR competition, a contest of R contributions around the topic of the Covid-19 pandemic. R users can download the package.
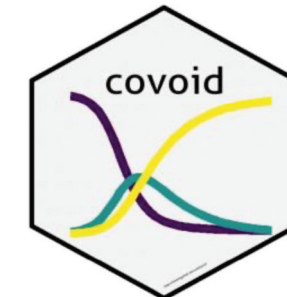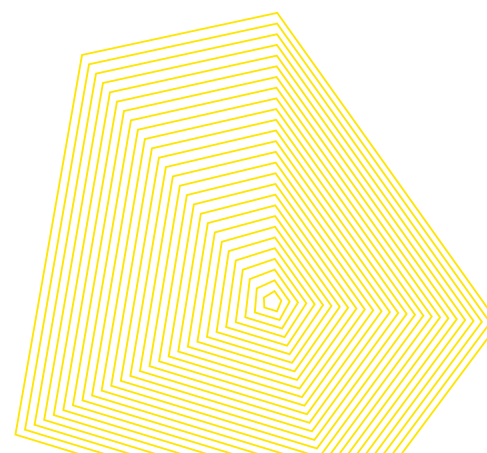
COVOID also includes an interactive dashboard that can be accessed online.

https://www.youtube.com/watch?v=yHJ7RSv6nio&feature=youtu.be&t=5757

CBDRH wins international COVID-19 data science competition

UNSW Sydney academics have been recognised for their open-source COVOID software built to model COVID-19 transmission and intervention strategies. A team of UNSW academics from UNSW's Centre for Big Data Research in Health (CBDRH) in collaboration with the South Western Sydney Clinic School (SWSCS) have won CovidR, a global competition assessing the contributions of the R software platform to the COVID-19 pandemic.

CBDRH industry PhD Scholar Oisin Fitzgerald and Lecturer Dr Mark Hanly, joined by Senior Research Fellow at SWSCS Dr Tim Churches were awarded for their open-source COVOID software built to model COVID-19 transmission and intervention strategies.

"Widespread social distancing and lock-downs have been remarkably effective in containing the spread of COVID-19, but they are blunt tools that come with enormous social and economic costs," Dr Tim Churches said.
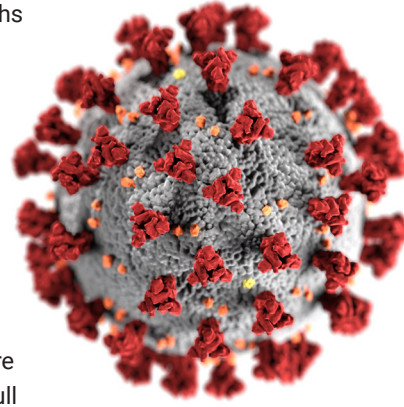
'We need to be seen' – why data is vital in the fight against COVID-19

Epidemiologist and data scientist Dr Kalinda Griffiths says "data is power" for Aboriginal and Torres Strait Islander communities facing the threat of coronavirus.

The global COVID-19 pandemic has propelled 'Big Data' into the national spotlight. In real-time, the public is being exposed to population-level data at an unprecedented rate and detail.

For UNSW Scientia Fellow Dr Kalinda Griffiths – a Yawuru woman and epidemiologist at the UNSW Centre for Big Data Research – this has brought into focus the critical role data plays in health, not just with the COVID-19 pandemic, "but also for other health issues, and particularly for Aboriginal and Torres Strait Islander communities".

"Data is critical to understand how this disease is impacting communities," Dr Griffiths says. "We know that data is the central source of information around any sort of epidemic or pandemic. But when we start to break it down by different population groups, that's where it gets more complicated." For the full story.

Over-the-counter painkiller sales up after codeine rescheduling

Medical researchers at UNSW have revealed how painkiller sales have developed since codeine was rescheduled in 2018.

Sales of painkillers like paracetamol and ibuprofen have soared after the Australian government made codeine products prescription-only just over two years ago – but in what medical researchers consider good news, consumers don't seem to have 'switched' to potentially harmful opioid derivatives instead.

The study – led by Dr Andrea Schaffer from the Centre for Big Data Research in Health and published in March 2020 in the Medical Journal of Australia – analysed sales to pharmacies of a range of products, both codeine-containing and codeine-free, across four years, including in the year before and after the rescheduling. The data represent about 96 per cent of pharmaceutical sales in Australia.

Using quit smoking medication during pregnancy not linked to higher risk of complications

Studies analysing the safety of using quit smoking medication during pregnancy have been few and far between – now, new research from the Centre for Big Data Research in Health sheds light on the matter.

The study led by Dr Alys Havard from UNSW Medicine's Centre for Big Data Research in Health was published in February 2020 in BMC Medicine. It analysed data from nearly 100,000 women who smoked during pregnancy, comparing birth outcomes of women who used smoking cessation medication – specifically varenicline, bupropion or nicotine replacement therapies (NRT) – to those who didn't.

It found that women who use smoking cessation aids during pregnancy don't put their babies at a higher risk of adverse outcomes such as pre-term births. One medication in particular was even shown to reduce the risk of these adverse outcomes. For the full story.

Centre
<u>overview</u>

"Big data" refers to datasets whose size or complexity is beyond the ability of traditional methods and tools to capture, store, manage, and analyse. Big data in health and medicine are generated through operating the health system (e.g. medical service claims), clinical care (e.g. hospital records, primary care records), laboratories (e.g. imaging data, pathology records, genetic testing) and research studies (e.g. clinical trials, observational studies), to support disease prevention, control (e.g. disease notifications) and survivorship, and by individuals themselves (e.g. "life logging"). This type of 'real-world' data is growing rapidly and will continue to expand exponentially for the foreseeable future.

There is enormous potential to inform improvements in the effectiveness, safety and efficiency of health care by bringing these data together and using them for research to understand the determinants of disease risk, target therapies to those who will benefit most, compare the effectiveness of alternative preventative and therapeutic interventions, and model the health and economic impacts of interventions and policies. Recognising this potential, research that will lead to "better models of care and services that improve outcomes, reduce disparities, increase efficiency and provide greater value" is listed first among the new national research priorities for health . Moreover, it is estimated that effective use of big data could also deliver reductions to national health care expenditure of around 8 percent which would translate to more than $11 billion annually in Australia.

The Centre for Big Data Research in Health (CBDRH) is a world-first research centre that is focused on delivering this value. The Centre supports UNSW Medicine's Thematic Research model in which key research themes (Neuroscience, mental health and addiction; Infectious disease, immunity and inflammation; Cancer; Non-communicable diseases) are supported by cross-cutting enabling capabilities including 'Big data in health'.

Vision

The power of "big data" is harnessed to transform the prevention and management of disease, and the delivery of health services.

Mission

To maximise the productive use of all possible sources of health big data in order to enhance the health and well being of Australians and the global community.

Values

• **Excellence**: Our research is scientifically rigorous and of high quality

• **Innovation:** We use creative and novel approaches in study design, analysis techniques and reporting

• **Impact:** Our high impact research benefits population health and the health care system

• **Leadership:** We are influential in the health data science field and aim to be regarded as a world leader

• **Collaboration:** We develop and maintain open and respectful relationships with research partners, the community, and each other

Functions

• Foster and develop innovation in health data science

• Undertake high impact, high-quality and multi-disciplinary health and medical research using big data

• Facilitate the rapid translation of research findings into health improvements and better value in health care

• Build multi-disciplinary capacity in health research using big data

• Promote public, clinical and policy awareness of the health and societal benefits of research using big data

UNSW SYDNEY | CENTRE FOR BIG DATA RESEARCH IN HEALTH

Research Units

While the Centre has broad expertise that spans multiple health domains and the capability to address any health issue that can be informed through research using large-scale electronic data, it has a longstanding reputation as world leaders in thematic areas that correspond to its four internal research units:

• Health Services and Outcomes Unit: undertakes research to identify variations and disparities in the use, outcomes and costs of health services, investigates the factors that drive these, and evaluates the outcomes of health policies and programs.

• National Perinatal Epidemiology and Statistics Unit: conducts national epidemiological, health services, policy and health economic research in reproductive, perinatal and maternal health.

• Cancer Epidemiology Research Unit: performs genetic epidemiology and population-based health record linkage studies aimed at understanding the causes and consequences of cancer.

• Medicines Policy Research Unit: conducts research regarding the judicious use, safety, costs and cost-effectiveness of prescribed medicines.

Clinical Analytics and Machine Learning Research Unit: design, develop and evaluate technology that supports evidence-based decision making by patients and clinicians

Centre for Big Data Research in Health

UNSW SYDNEY | CENTRE FOR BIG DATA RESEARCH IN HEALTH

Dr Alys Havard
Senior Research Fellow

Dr Amy Gibson
Research Fellow

Dr Andrea Schaffer
Research Fellow

Mr Andrew Blance
Senior Lecturer

Dr Benjamin Daniels
Research Fellow

Dr Benjumin Hsu
Research Fellow

Dr Bich Tran
Research Fellow (until June)

A/Prof Blanca Gallego Luxan
Unit Head

Dr Bronwyn Brew Haasdyk
Senior Research Fellow

Dr Christos Venetis
Senior Lecturer

A/Prof Claire Vajdic
Scientia Fellow & Unit Head

Ms Claudia Bruno
Research Assistant

Dr Danielle Tran
Research Fellow

Dr Danni Han
Research Associate (until July)

Ms Elena Keller
Research Associate

Ms Evelyn Karantonis
Data Management Officer

A/Prof Georgina Chambers
Scientia Fellow & Unit Director

Dr Hanna Tervonen
Research Fellow

Ms Hina Salimuddin
Data Management Officer

Dr Hon Hwang
Research Fellow

Dr Helga Zoega
Scientia Fellow

Ms Jade Newman
ANZARD Data Manager

Dr Jon Brett
Research Fellow

Dr Juliana de Oliveira Costa
Research Associate

Dr Kalinda Griffiths
Scientia Fellow

Dr Kathleen Falster
Snr Research Fellow (until May)

Dr Kylie-ann Mallitt
Research Fellow

Professor Louisa Jorm
Director

Ms Louise Francis
Centre Manager

Dr Maarit Laaksonen
Senior Research Fellow

Dr Marina van Leeuwen
Research Fellow

Ms Margot Murphy
Project Officer

Dr Mark Hanly
Lecturer

Ms Melisa Litchfield
Data Manager

Dr Michael Falster
Research Fellow

Ms Michele Partridge
Administrative Officer

Ms Natasha Donnolley
Project Manager

Mr Oisin Fitzgerald
Research Officer

Dr Oscar Perez Concha
Lecturer

Ms Prudence Creighton
Statistician

Dr Repon Pau
Research Officer

Dr Sabita Rana
Project Coordinator

Dr Stephanie Choi
Research Fellow

Professor Sallie Pearson
Unit Head

Ms Sanja Lujic
Lecturer

Dr Sebastiano Barbieri
Research Fellow

Dr Sharon Chow
Coordinator (ANZNN)

Dr Stephanie Choi
Research Fellow

Centre for Big Data Research in Health

UNSW SYDNEY | CENTRE FOR BIG DATA RESEARCH IN HEALTH

Research Students 2020

Jared Brown

Topic: Using big data to evaluate pharmaceutical policy interventions

Primary Supervisor: Professor Sallie Pearson

Co-Supervisor(s): Dr Helga Zoega, Dr Andrea Schaffer, Professor Nicholas Buckley

Funding source: Scientia Scholarship

....

Claudia Bruno

Topic: Evaluating the safety of medicines during pregnancy using big data

Joint Supervisors: Dr Helga Zoega, Dr Alys Havard

Co-Supervisor(s): Prof Sallie Pearson

....

Michael Hennessy

Topic: Cataract Surgery in NSW and relationship to health status

Primary Supervisor: Professor Minas Coroneo

Secondary Supervisor(s): Dr Ian Harris, Professor Louisa Jorm

....

Dominque Favell (Masters by Research)

Topic: The application of real-world evidence to support regulatory and reimbursement decisions

Primary Supervisors: Professor Sallie Pearson

Co-Supervisor: Dr Helga Zoega

....

Oisin Fitzgerald

Topic: Patient phenotyping to support new care pathways

Joint Supervisors: Professor Louisa Jorm, Dr Oscar Perez Concha

Co-Supervisor(s): Lachlan Rudd (eHealth NSW), Dr Alejandro Metke Jimenez (CSIRO)

Funding source: iPhD Industry Scholarship

Elena Keller

Topic: Using behavioural economics to inform decision making in fertility treatment

Joint Supervisor(s): Professor Georgina Chambers, Professor Andreas Ortmann

Secondary Supervisor: Professor Louisa Jorm

....

James Kemp

Topic: Deep learning to detect anomalies in big datasets

Joint Supervisors: Professor Louisa Jorm, Dr Sebastiano Barbieri

Co-Supervisor(s): Laura Sham (DoH), Norm Good (CSIRO)

Funding source: iPhD Scholarship

....

Georgina Kennedy

Topic: Automation of patient trajectory management at St Vincent's Hospital, Sydney

Primary Supervisor: A/Professor Blanca Gallego Luxan

Co-Supervisor: Mark Dras

....

Damian Kotevski

Topic: Using machine learning to understand and improve care and outcomes for head and neck cancer patients

Joint Supervisors: A/Professor Robert Smee, A/Professor Claire Vajdic

Co-Supervisor: Dr Matthew Field

Funding source: Prince of Wales Hospital

....

Mei Lin Lee (PhD Awarded)

Topic: The utilisation of Smoking Cessation Pharmacotherapies in pregnant smokers

Primary Supervisor: Dr Alys Havard

Secondary Supervisor(s): Dr Duong Tran, Professor Alec Welsh

Funding source(s): University International Postgraduate Award (UIPA)

Peiwen Liao

Topic: Health service utilization by people with an intellectual disability

Joint Supervisor(s): A/Professor Claire Vajdic and Professor Julian Trollor

Secondary Supervisor: Dr Simone Reppermund

Funding source: Scientia Scholarship

....

Leibo Liu

Topic: Extracting value from unstructured health data

Joint Supervisors: Professor Louisa Jorm, Dr Oscar Perez Concha

Co-Supervisor(s): Dr Anthony Nguyen, Vicki Bennett

Funding source: iPhD Scholarship

....

Sanja Lujic

Topic: Comborbidity and Multiborbidity in New South Wales: Prevalence, Trajectories and Implications for Healthcare Utilization and Costs

Primary Supervisor: Professor Louisa Jorm

Secondary Supervisor(s): Professor Judy Simpson

....

Matthew Miller

Topic: The application of machine learning with spatial statistics to a prehospital critical care environment

Primary Supervisor: A/Professor Blanca Gallego Luxan

Secondary Supervisor: Professor Louisa Jorm

....

Tarun Malviya

Topic: Using interpretable machine learning to increase prediction accuracy in cancer

Primary supervisor: Professor Salil Kanhere

Secondary Supervisor(s): Professor Claire Vajdic, Professor Michael Barton, Dr Helen Paik

....

Elizabeth Nguyen

Topic: Cancer health service utilization by people with an intellectual disability".

Joint Supervisor(s): A/Professor Claire Vajdic and Professor Julian Trollor

Secondary Supervisor: Dr Simone Reppermund

Funding source: Translational Cancer Research Network Scholar

Michael Odutola

Topic: Lifestyle, occupational and genetic risk factors for follicular lymphoma in Australia

Primary Supervisor: A/Professor Claire Vajdic

Co-Supervisor: Dr Marina van Leeuwen

Funding source: University International Postgraduate Award (UIPA)

....

Smriti Raichand

Topic: Antidepressants use during pregnancy and their effects on mother and child

Primary Supervisor: Dr Alys Havard

Secondary Supervisor(s): Professor Sallie Pearson, Professor Nick Buckley

Funding source(s): Australian Postgraduate Award (APA), NHMRC Centre for Research Excellence Medicines and Ageing Top-up Scholarship

....

Oluwadamisola Sotade

Topic: Using machine learning algorithms to predict the surgical outcomes of Australians with multimorbidity

Joint Supervisors: Professor Louisa Jorm, Dr Michael Falster

Co-Supervisor: Professor Sallie Pearson

Funding source: Scientia Scholarship

....

Monica Tang

Topic: Assessing and Optimising Anti-Cancer Drug Utilisation

Primary Supervisor: Professor Sallie-Anne Pearson

Co-Supervisor(s): Dr Andrea Schaffer, Professor John Simes, Chee Lee

Funding source(s): NHMRC Postgraduate Scholarship, NBCF Scholarship

....

Skye Trudgett

Topic: Evaluation of national-wide programs for high-risk young people, including a focus on Indigenous data sovereignty

Joint Supervisors: Professor A Shakeshaft and Dr Kalinda Griffiths

Co-Supervisor(s): Dr Timothy Dobbins and Professor Robert Sanson-Fisher

Heidi Welberry

Topic: Using big data to understand health care trajectories for older Australians at risk of dementia

Primary Supervisor: Professor Louisa Jorm

Co-Supervisor(s): Scientia Professor Henry Brodaty, Dr Benjumin Hsu, Dr Sebastiano Barbieri

Funding source: NHMRC Dementia Team Grant

....

Brooke Wilson

Topic: Understanding the utility of chemotherapy and targeted treatments for cancer in high as well as low and middle-income countries

Joint Supervisors: Professor M Barton, Professor S Pearson

Co-Supervisor(s): Eitan Emir

....

Jie (Elliot) Zhu

Topic: Enabling Personalised Cohort Studies from Large Repositories of Clinical Practice Data

Primary Supervisor(s): A/Professor Blanca Gallego Luxan

Co-Supervisor: Ian Marschner

UNSW SYDNEY | CENTRE FOR BIG DATA RESEARCH IN HEALTH

Research Funding 2020

New Grants awarded – 2020

1. **Pearson S,** Pratt N, Preen D, Buckley N, Degenhardt L, van Gool K, Vajdic C, **Jorm L**, Wilson A, Henry D. Centre for Research Excellence in Medicines Intelligence. *NHMRC Centres for Research Excellence* 2020-2025 ($2,500,000).

2. **Jorm L**, Arnott C, Barbieri S, Brennan P, Rodgers A, Woodward M, Poppe K, Gandomkar Z, Gallego Luxan B, Douglas K. Novel deep learning methods for large-scale cardiovascular risk screening using Australian digital health data. *MRFF Cardiovascular Mission* 2020-2022 ($1,467,000)

3. **Vajdic C**, Neideck G, von Sanden N, Betbeder-Matibet L, Hurley R, Green D, McNeil K, Penna T, Smith M, **Jorm L**. The LINked Data Asset for Australian Health Research (LINDAHR). Australian Research Data Commons (ARDC) National Collaborative Research Infrastructure Strategy 2021-2023 ($522,726).

4. **Chambers GM**, Halliday J, McLachlan R, O'Bryan MK. Men and infertility over the lifecourse (MAIL). *Medical Research Future Fund (MRFF)* 2020-2024 ($4,600,000).

5. Peiris D, Elshaug A, **Jorm LR**, Jan S, Billot L, **Pearson S**, Schierhout G, Huckel-Schneider C, Landon BE. Development and evaluation of regional health care alliances to improve health system performance in New South Wales - Patient Centred Co-commissioning Groups. NHMRC Partnership Project 2020-2025 ($956,151).

6. **Pearson S**, Solomon B, McArthur G, Fox S, Desai J, IJzerman M, Zhang Y, Gibbs P, Degeling K, Franchini F. Predicting the population health economic Impact of current and new Cancer Treatments (PRIMCAT). MRFF Targeted Health Sydney and Community Organisation Research Grant 2020-2023 ($335,688).

7. **Barbieri S.** The Health Gym: An Open Platform with Health-Related Benchmark Problems for the Development of Reinforcement Learning Algorithms. *Wellcome Trust* 2020-2021 ($98,386).

8. **Schaffer A**. Disentangling the interrelationship between multimordibity, multimedicine use, and cardiovascular *NHMRC Ideas Grant* 2021-2023 ($480,979)

9. Trollor J, Agar, Cvejic, Currow, Strutt, **Vajdic C**, Chye, Srasuebkul, Weise, Reppermund S, Szanto, Harlum, Tuffrey-Wijne. 2020-22. Improving palliative care services for people with an intellectual disability. *NHMRC Public Health and Chronic Disease Grant Program* 2020-2022 ($1,140,915)

10. Stephenson, Ritter, **Vajdic C**, Engelmann. Realising big data's potential to address social and health inequalities. *Australian Research Council Discovery Project Grant* (DP200100062) 2020-22 ($300,515).

11. Trollor J, Reppermund S, Sachdev P, Brodaty H, Christensen H, Vajdic C, Srasuebkul, Watkins, Dowse, Fisher, Katz, Baldry, Dean K, Dobbins T, Butler, Harris, Sowmya, Mohammadi. An interdisciplinary data platform to make neuropsychiatric and disability population-based research accessible and efficient. *UNSW Sydney Research Infrastructure Scheme* 2020-2022 ($150,763).

12. **Camacho X**. Leveraging big data to assess medicines safety in Australia. *NHMRC Postgraduate Scholarship* 2021-2023 ($91,538).

13. **Teede H, Chambers GM**. Australian Health Research Alliance (AHRA) National Women's Health Research, Translation and Impact Network (WHRTN). MRFF Emerging Priorities and Consumer Driven Research initiative. 2020-2025 ($5,000,000).

UNSW SYDNEY | CENTRE FOR BIG DATA RESEARCH IN HEALTH

ONGOING GRANTS

1. **Jorm L**, Baily M, Boyle D, Churches T, Herbert S, Neal B, Neideck G, Palmer L, Preen D, Smith M. E-Research Institutional Cloud Architecture (ERICA): secure cloud computing for sensitive microdata. *ARDC Platforms Projects* 2020-2022 ($2,015,000).

2. **Gallego Luxan B**. Learning what works and for which patients: efficient framework and novel technologies for precision comparative effectiveness research. *NHMRC Ideas Grant* 2020-2023 ($587,183).

3. **Falster M0.** Same patient, same care: is out funding of hospitals promoting inequities in care and outcomes? *NHMRC Ideas Grant* 2020-2022 ($566,781)

4. Falster K, Pilkington R, Lynch J, **Hanly M**, Shakeshaft A, Edwards B, Lingam R, Brownell M, Transforming the health system response to child maltreatment: the need for cross-jurisdictional e-cohorts. *NHMRC Clinical Trials and Cohort Studies Grant* 2020-2023 ($1,248,388)

5. **Griffiths K**. Data sovereignty tools, services and/or resources: Phase 1 – identification of potential and viable tools, services and/or resources. CRC for Aboriginal and Torres Strait Islander Health - Lowitja Institute 2020-2021 ($108,824).

6. **Gallego Luxan B, Jorm LR, Perez Concha O, Quiroz Aguilera JC**. Software tools for the provision of EMR data for research. South Eastern Sydney Local Health District2020-2022 ($498,96).

7. Maher C, Buchbinder R, Hancock M, O'Sullivan P, McAulay J, Blyth F, **Jorm L**, Collie A, McCaffrey K, Hayes A. Low Back Pain Centre for Research Excellence. *NHMRC Centre for Research Excellence in Clinical Research* 2020-2024 ($2,499,199).

8. Anstey K, Peters R, Lautenschlager N, Shaw J, Anderson C, **Jorm L**, Kiely K, Whitmer R, Matthews F, Kivipelto M. Translating the evidence on dementia risk reduction to generate assessments, advice and training for health professionals, policy makers, patients and public. *NHMRC Boosting Dementia Research* 2020-2023 ($1,995,480.60).

9. Rhee J, **Vajdic C**, Carey M, Sitas F, Goldstein D, Bonney A, Ferreira I, Mullan J, Emery J, Bergin R, Garne D, Smith M, Harland D, Prioretto A, Chantrill L. Not getting a fair go: why do people in rural areas with cancer have worse outcomes? *NUW Alliance Project Grant* 2019-2020 ($225,000).

10. **Pearson A, Jorm L, Chambers GM,** Degenhardt L, Dobbins T, Falster K, Harris I, Guy R, **Havard A**, Ivers R, Jaffe A, Levi C, Lingam R, Liu B, Sedrakyan A, Woodward M, **Vajdic CM, Zoega H**. A "Big Data" Platform for Real World Evidence in Health. *UNSW Sydney Research Infrastructure Scheme* 2020 ($217,443).

11. Lui, K; Gale, C; Tarnow-Mordi, WO; Schindler, T; **Chambers, GM**; Martin, A; Battin, M; Harris, D; Cruz, M. Does Withholding Enteral feeds Around blood Transfusion reduce the incidence of necrotising enterocolitis (NEC) in very preterm infants? The international WHEAT Study. National Health & Medical Research Council / Rare Cancers, Rare Diseases and Unmet Need (MRFF) 2019-2024 $1606825.

12. **van Leeuwen M**, Anazodo A, Vajdic C, Chambers G, Boydell K, Cohn R. Linked data platform for adolescents and young adults diagnosed with cancer: improving survivorship care through population data analytics. *UNSW Medicine and SPHERE Cancer Clinical Academic Group* (Cancer CAG) seed grant 2019-2020 ($200,000).

13. **Pearson SA, Jorm LJ, Vajdic C, Zoega H**, Falster K, **Havard A**, Sedrakyan A, Dobbins T, **Chambers G**, Ivers R, Guy R, Woodward M, Harris L, Levi C, Lingham R, Jaffe A, Liu B. A "Big Data" Platform for Real World Evidence in Health. *UNSW Research Infrastructure Scheme* 2019-2020 ($254,225).

14. **Schaffer AL**. Health service and medicine utilisation before suicide: optimising suicide prevention using population-based linkage of routinely collected data. NHMRC New Investigator Project Grant ($354,526).

15. Smith VH, **Griffiths K**, Marsh R, Mayo M. Ramaciotti Centre for Excellence in Building Regional and Remote Biomedical Capability. *Perpetual - Ramaciotti Biomedical Research Award* 2019-2023 ($1,000,000).

16. **Chambers, GM**. ANZNN Data Collection. *South Eastern Sydney Local Health Distric*t 2019-2024 ($971,062).

17. **Jorm LR**, Hill A, Varcoe RL, Freeman A, Sedrakyan A, Beiles B. Linkage Study Pilot Project. *Australian and New Zealand Society for Vascular Surgery (ANZSVS)* 2019-2021 ($63,586)

18. Lingam RP, Falster KA, Fernandez EA, **Hanly MJ**, Hu N, Katz I, Nassar N, Newton B, Stephensen J. Pathways of Change: optimising the mental health of children in OOHC. NSW Department of Communities & Justice 2020-2021 $30,000.

19. **Zoega H, Pearson S**. Medicine utilisation review based on dispensing records of PBS-listed medicines from a 10% random sample of PBS-eligible Australia residents. *Allergan Australia Pty Ltd* 2019-2020 ($76,499).

20. **Chambers GM**, Farrar MA. Economic evaluation and budget impact analysis: Implementation of a newborn screening for Spinal Muscular Atrophy (SMA) or primary immune deficiency disorder (PID). *Luminesce Alliance / NSW Health Medical Research Support Program* 2019-2020 ($180,000).

21. **Chambers, GM**. Contract for data collection, analysis and reporting services. *Victorian Assisted Reproductive Treatment Authority (VARTA)* 2020 ($35,000).

22. Butcher K, Ooi S, Lovell N, Delbaere K, Dong Z, Celler BG, **Pearson S**, Lung TW, Liaw S, Yu JJ, Dong J. Total Cardiac Care - STROKE: A randomised controlled trial of a comprehensive smartphone application-centric model of care to improve outcomes in stroke patients. *NHMRC Cardiovascular Health Mission (MRFF)* 2020-2023 ($1,629,906).

23. **Jin, X**. Discovering Optimal Weight Loss Interventions to Prevent Osteoarthritis in Obesity Through the Lens of Early Biomarkers: the TANGO Diet Trial. *NHMRC Early Career Fellowships* 2020-2022 ($205,642).

24. **Brew BK**. Exploring the genetic mechanisms of asthma and gastroesophageal reflux comorbidity in adults. *Hjärt Lungfonden Project Grant, Sweden* 2020-2021 ($150,000).

25. Houston S, Perdue S, **Griffiths K**, Watts S. Development of the National Aboriginal and Torres Strait Islander Health and Medical Workforce Plan (the Workforce Plan). *Commonwealth of Australia* 2019-2020 ($217,382).

26. Miller P, Smith J, Livingston M, Guthridge S, Whyte C, Boffa J, Paradies Y, **Griffiths K**, Chikritzhs T, Room R, Mayshak R, Smith L, Stevens M, Paterson J, Ward J, Crane M, Thorn M, Scott D. Investigating the impacts of the banned drinker register re-introduction in the Northern Territory. *Australian Research Council – Linkage Project* 2019-2023 ($1,191,949).

27. **Jorm L**, Sedrakyan A, Elshaug A, Falster M. Post-surgery care fragmentation: impacts and implications. *NHMRC Project Grant* 2019-2021 ($554,537)

28. **Vajdic C, Venetis C, Chambers G**, Sutcliffe, Opdahl, Hacker. Cancer risk in women and children after medically assisted reproduction. *NHMRC Project Grant* 2019-2023 ($1,025,422).

29. Liauw W, Goldstein D, Barton M, Apte M, **Vajdic C**, Delaney G. Development, validation and application of a Variation Framework for Pancreatic Cancer Care based on Australian Consensus Guidelines. *SPHERE Clinical Academic Group Seed Grant* 2018-2020 ($199,820).

30. **Chambers G**. *UNSW Sydney Scientia Fellowship* 2018-2020 ($989,665).

31. **Vajdic C**. *UNSW Sydney Scientia Fellowship* 2018-2020 ($989,665).

32. **Zoega H**. *UNSW Sydney Scientia Fellowship* 2018-2021 ($925,864).

33. **Griffiths K**. *UNSW Sydney Scientia Fellowship* 2018-2021 ($767,912).

34. **Pearson, S; Tang, MM**. Assessing and Optimising Anti-Cancer Drug Utilisation - Postgraduate Scholarship for Miss Monica Min Tang. *NHMRC Postgraduate Scholarship* 2018-2021 ($100,937).

35. Neal B, Wu Y, **Pearson SA**, Elliott P, Tian M. The Salt Substitute and Stroke Study (SSaSS): a large-scale cluster randomised controlled trial to assess whether sodium reduction, achieved through salt substitution, prevents stroke. *NHMRC Project Grant* 2019-2020 ($1,519,450).

36. **Chambers GM**. Management of Australian and New Zealand Assisted Reproductive Technology Database. Fertility Society of Australia (undisclosed) 2019-2021.

37. **Chambers G**. Assisted reproductive technology in New Zealand report. *New Zealand Ministry of Health* 2020.

38. **Brown J**. *UNSW Sydney Scientia PhD Scholarship* 2019-2022 ($200,000).

39. **Fitzgerald O**. Patient phenotyping using machine learning to support new care pathways. *iPhD Scholarship* 2019-2022 ($242,384).

40. **Leibo L**. Extracting value from unstructured health data. *iPhD Scholarship* 2019-2022 ($242,384).

41. **Griffiths K**. Superstars of STEM. *Science and Technology Australia* 2019-2020.

42. **Schaffer AL.** Evaluating population-level medicine policy interventions: generating high-quality evidence about intended and unintended consequences. NHMRC Early Career Fellowship 2019-2022 ($327,192).

43. Eades S, Sanson-Fisher R, McAullay D, Ivers R, **Jorm L**, Bryant J, Goldfeld S, Oldmeadow C, Searles A. Aboriginal child and adolescent health improvement through Aboriginal leadership and collaborative research teams. *NHMRC Centre for Research Excellence in Population Health Research* 2017-2021 ($2,499,589).

44. Woodward M, **Jorm L**, Redfern J, **Havard A**, Randall D, Peters S. Sex disparities in management of myocardial infarction. *NHMRC Project Grant* 2018-2020 ($615,585).

45. **Havard A**. The safety, comparative effectiveness and utilisation of smoking cessation pharmacotherapies among smokers hospitalised for a major cardiovascular event in NSW. *NSW Health / Early-Mid Career Fellowship* 2018-2020 ($594,995).

46. **Falster MO**. Using big data to reduce inappropriate medicine use. *NHMRC Early Career Fellowship* 2018-2021 ($322,952).

47. **Venetis CA.** Improving the outcomes for mothers and babies after IVF using big data research. *NHMRC Early Career Fellowship* 2018-2021 ($306,362).

48. Graves S, Pratt N, Inacio M, de Steiger R, Harris I, Ackerman I, **Jorm L**. Enhancing joint replacement outcomes through national data linkage. *NHMRC Project Grant* 2018-2020 ($765,349).

49. Degenhardt L, **Pearson S**, Dobbins T, Gisev N, Currow D, Blyth F, Larney S, Dunlop A, Mattick R, Wilson A. Combating escalating harms associated with pharmaceutical opioid use. *NHMRC Project Grant* 2018-2021 ($925,000).

50. Gandhi M, MacManus M, Seymour J, **Vajdic C**, Fink L, Green M, Cheah C, Trau M, Korbie D. NHMRC Project Grant - Application Title: Integrating immunity and genetics in Follicular Lymphoma to establish a prognostic score fit for the modern era. *NHMRC Project Grant* 2018-2021 ($1,377,174).

51. Garvey G, Cunningham J, Whop L, Brotherton J, Girgis A, Olver I, Howard K, **Griffiths K**, Baxi S. Targeted Approaches to Improve Cancer Services for Aboriginal and Torres Strait Islander Australians. *NHMRC Targeted Grant* 2018-2023 ($2,499,981).

52. Brown M, **Chambers G** (AI). Adverse cardiovascular outcome after hypertensive disorders of pregnancy: altering this trajectory. *South Eastern Sydney Local Health District* 2018-2020 ($632,843).

53. Korda R, Banks E, Lynch J, **Jorm L**, Lovett R, Calabria B. Whole-of-population linked data: strengthening the evidence to drive improvement in health and health care in Australia. *NHMRC Partnership Project Grant* 2017-2020 ($1,130,376).

54. Sachdev P, Ganguli M, **Jorm L**, Brodaty H, Peterson R, Lipton R, Ritchie K, Kim K. Cohort Studies of Memory International Consortium (COSMIC). *NIH Project Grant* 2017-2022 (US$2,600,000)

55. Lui K, Haslam R, **Chambers G**, Gill A, Callander I, Cruz M, Tarnow-Mordi. Using a clinical registry to reduce variation in clinical outcomes in Neonatal Intensive Care Unit. *HCF Foundation* 2018-2021 ($211,000).

56. **Chambers G, Jorm L**, Norman R, Lui K, Havard A. Medically assisted fertility treatment and infant outcomes: The role of IVF (in vitro fertilisation), ovulation induction and subfertility. NHMRC Project Grant 2017-2020 ($463,000).

57. Pearse J, **Jorm L**, Hall J, Mazevska D, McElduff P, **Pearson S, Falster M**, van Gool K. Evaluation of the Health Care Homes model of care. *Commonwealth Department of Health* 2016-2022 ($3,135,369).

58. **Chambers, G**. Australian and New Zealand Assisted Reproduction Database (ANZARD). Fertility Society of Australia (FSA) 2016-2020.

59. Trollor J, **Vajdic C**, Lennox N, Moorin R, Reppermund S. Understanding health service system needs for people with intellectual disability. *NHMRC Project Grant* 2017-2021 ($1,216,388).

60. Miller P, Egerton-Warburton D, Shakeshaft A, Caldicott D, Staiger P, **Havard A**, Doran C, Baker T, Weiland T, Bowe S. Driving Change: Using emergency department data to reduce alcohol-related harm. *NHMRC Partnership Grant* 2016-2020 ($3,596,826).

61. Brodaty H, Valenzuela M, Sachdev P, McNeil J, Maeder A, Lautenschlager N, **Jorm L**, Fiatarone Singh M, Anstey K, Andrews G. Maintain Your Brain. NHMRC *Dementia Team Grant* 2015-2020 ($6,467,016).

62. **Chambers G**. Assisted reproductive technology in New Zealand report. *New Zealand Ministry of Health.*

6 Publications 2020

BOOK CHAPTERS

1. Kolibianakis E, Olga P, **Venetis CA**. (2020). Controversies in Recurrent Implantation Failure: From Theory to Practice. In *Controversies in Assisted Reproduction* 2020 (pp. 128-137). CRC Press.

2. **Karanges EA, Litchfield M, Mellish L, Pearson SA.** The Pharmaceutical Benefits Scheme (PBS) dispensing database: Databases for pharmacoepidemiological research. *Springer Series on Epidemiology and Public Health: Wolfgang and Pigeot.* 2020.

PAPERS PUBLISHED IN PEER-REVIEWED JOURNALS

1. **de Oliveira Costa J, Schaffer AL,** Medland NA, Litchfield M, Narayan SW, Guy R, et al. Adherence to Antiretroviral Regimens in Australia: A Nationwide Cohort Study. *AIDS Patient Care STDS.* 2020;34(2):81-91.

2. **Falster MO**, Buckley NA, Brieger D, Pearson SA. Antihypertensive polytherapy in Australia: prevalence of inappropriate combinations, 2013-2018. *J Hypertens.* 2020;38(8):1586-92.

3. **Hsu B, Falster MO, Schaffer AL, Pearson S, Jorm L,** Brieger DB. Antiplatelet therapy within 30 days of percutaneous coronary intervention with stent implantation. *Med J Aust.* 2020;213(3):124-5.

4. Reutfors J, Cesta CE, Cohen JM, Bateman BT, Brauer R, … **Havard A, … Schaffer A, … Zoega H**, … et al. Antipsychotic drug use in pregnancy: A multinational study from ten countries. *Schizophr Res.* 2020;220:106-15.

5. Dyer S, **Chambers GM**, Adamson GD, Banker M, De Mouzon J, Ishihara O, et al. ART utilization: an indicator of access to infertility care. *Reprod Biomed Online.* 2020;41(1):6-9.

6. Lainas GT, Lainas TG, Sfontouris IA, **Venetis CA,** Bosdou JK, Chatzimeletiou A, et al. Association between body mass index and oocyte maturation in patients triggered with GnRH agonist who are at high risk for severe ovarian hyperstimulation syndrome: an observational cohort study. *Reprod Biomed Online.* 2020;40(1):168-75.

7. Caffrey Osvald E, Bower H, Lundholm C, Larsson H, **Brew BK**, Almqvist C. Asthma and all-cause mortality in children and young adults: a population-based study. *Thorax.* 2020;75(12):1040-6.

8. Lundholm C, **Brew BK**, D'Onofrio BM, Osvald EC, Larsson H, Almqvist C. Asthma and subsequent school performance at age 15-16 years: A Swedish population-based sibling control study. *Sci Rep.* 2020;10(1):7661.

9. **Barbieri S**, Kemp J, **Perez-Concha** O, Kotwal S, Gallagher M, Ritchie A, …et al. Benchmarking Deep Learning Architectures for Predicting Readmission to the ICU and Describing Patients-at-Risk. *Sci Rep.* 2020;10(1):1111.

10. Henry A, Arnott C, Makris A, Davis G, Hennessy A, Beech A, … **Fitzgerald O**, …et al. Blood pressure postpartum (BP2) RCT protocol: Follow-up and lifestyle behaviour change strategies in the first 12 months after hypertensive pregnancy. *Pregnancy Hypertens.* 2020;22:1-6.

11. Hong S, Youk T, Lee SJ, Kim KM, **Vajdic CM**. Bone metastasis and skeletal-related events in patients with solid cancer: A Korean nationwide health insurance database study. *PLoS One.* 2020;15(7):e0234927.

12. Rosales BM, De La Mata N, **Vajdic CM**, Kelly PJ, Wyburn K, Webster AC. Cancer mortality in kidney transplant recipients: An Australian and New Zealand population-based cohort study, 1980-2013. *Int J Cancer.* 2020;146(10):2703-11.

13. **Favell DL, Tang M, Daniels B, Vajdic CM, Zoega H, Pearson SA.** Capture of systemic anticancer medicines in Pharmaceutical Benefits Scheme (PBS) data likely higher than previously. *Public Health Res Pract.* 2020;30(2).

14. **van Leeuwen MT**, Luu S, Gurney H, Brown MR, **Pearson SA**, Webber K, …, **Vajdic CM**. Cardiovascular Toxicity of Targeted Therapies for Cancer: An Overview of Systematic Reviews. *JNCI Cancer Spectr.* 2020;4(6):pkaa076.

15. **Brett J**, Wylie C, Brown J. A case of significant hypotension following a human ingestion of veterinary pimobendan. *Clin Toxicol.* 2020;58(2):146-8.

16. **Schaffer AL**, Cairns R, Brown JA, Gisev N, Buckley NA, Pearson SA. Changes in sales of analgesics to pharmacies after codeine was rescheduled as a prescription only medicine. *Med J Aust.* 2020;212(7):321-7.

17. **Bruno C, Pearson SA, Daniels B,** Buckley NA, **Schaffer A, Zoega H**. Passing the acid test? Evaluating the impact of national education initiatives to reduce proton pump inhibitor use in Australia. *BMJ Qual Saf.* 2020.

18. **Jorm LR**. Commentary: Towards machine learning-enabled epidemiology. *Int J Epidemiol.* 2021;49(6):1770-3.

19. Scott D, Seibel MJ, Cumming R, Naganathan V, Blyth F, … **Hsu B**, …et al. Comparison of clinical risk factors for incident fracture in obese and non-obese community-dwelling older men. *Bone.* 2020;137:115433.

20. **Tang M, Schaffer A,** Kiely BE, **Daniels B**, Simes RJ, Lee CK, et al. Correction: Treatment patterns and survival in HER2-positive early breast cancer: a whole-of-population Australian cohort study (2007-2016). *Br J Cancer.* 2020;123(5):868.

21. **Brett J, Pearson SA, Daniels B**, Wylie CE, Buckley NA. A cross sectional study of psychotropic medicine use in Australia in 2018: A focus on polypharmacy. *Br J Clin Pharmacol.* 2021;87(3):1369-77.

22. **Falster K, Hanly M**, Pilkington R, Eades S, Stewart J, Jorm L, et al. Cumulative Incidence of Child Protection Services Involvement Before Age 5 Years in 153670 Australian Children. *JAMA Pediatr*. 2020;174(10):995-7.

23. **Paul RC**, Fitzgerald O, Lieberman D, **Venetis C**, **Chambers GM**. Cumulative live birth rates for women returning to ART treatment for a second ART-conceived child. *Hum Reprod.* 2020;35(6):1432-40.

24. Lainas GT, Lainas TG, Sfontouris IA, **Venetis CA**, Kyprianou MA, Petsas GK, …et al. A decision-making algorithm for performing or cancelling embryo transfer in patients at high risk for ovarian hyperstimulation syndrome after triggering final oocyte maturation with hCG. *Hum Reprod Open.* 2020;2020(3):hoaa013.

25. Bond-Smith D, Seth R, de Klerk N, Nedkoff L, Anderson M, … **Griffiths, K**, … et al. Development and Evaluation of a Prediction Model for Ascertaining Rheumatic Heart Disease Status in Administrative Data. *Clin Epidemiol.* 2020;12:717-30.

26. **Schaffer AL, Pearson SA, Perez-Concha O**, Dobbins T, Ward RL, **van Leeuwen MT, …, Vajdic CM.** Diagnostic and health service pathways to diagnosis of cancer-registry notified cancer of unknown primary site (CUP). *PLoS One.* 2020;15(3):e0230373.

27. Homaira N, **Daniels B, Pearson S**, Jaffe A. Dispensing Practices of Fixed Dose Combination Controller Therapy for Asthma in Australian Children and Adolescents. *Int J Environ Res Public Health.* 2020;17(16).

28. Laranjo L, Ding D, Heleno B, Kocaballi B, **Quiroz JC**, Tong HL, et al. Do smartphone applications and activity trackers increase physical activity in adults? Systematic review, meta-analysis and metaregression. *Br J Sports Med.* 2021;55(8):422-32.

29. Hossain FB, **Shawon MSR**, Al-Abid MSU, Mahmood S, Adhikary G, Bulbul MMI. Double burden of malnutrition in children aged 24 to 59 months by socioeconomic status in five South Asian countries: evidence from demographic and health surveys. *BMJ Open.* 2020;10(3):e032866.

30. Chowdhury R, Heng K, **Shawon MSR**, Goh G, Okonofua D, Ochoa-Rosales C, et al. Dynamic interventions to control COVID-19 pandemic: a multivariate prediction modelling study comparing 16 worldwide countries. *Eur J Epidemiol.* 2020;35(5):389-99.

31. Slob EMA, **Brew BK**, Vijverberg SJH, Kats C, Longo C, Pijnenburg MW, et al. Early-life antibiotic use and risk of asthma and eczema: results of a discordant twin study. *Eur Respir J.* 2020;55(4).

32. Robijn AL, **Brew BK**, Jensen ME, Rejno G, Lundholm C, Murphy VE, et al. Effect of maternal asthma exacerbations on perinatal outcomes: a population-based study. *ERJ Open Res.* 2020;6(4).

33. Kunwar R, Lamichhane P, **Vajdic C**, Muscatello DJ. Effect of overseas parental employment migration on healthcare seeking for common childhood illnesses and nutritional status among left-behind young children: A systematic review. *J Child Health Care.* 2020;24(3):351-64.

34. **Jin X,** Antony B, Wang X, Persson MS, McAlindon T, Arden NK, … et al. Effect of vitamin D supplementation on pain and physical function in patients with knee osteoarthritis (OA): an OA Trial Bank protocol for a systematic review and individual patient data (IPD) meta-analysis. *BMJ Open.* 2020;10(4):e035302.

35. Gomes RM, Barbosa WB, Godman B, **Costa JO**, Ribeiro Junior NG, … et al. Effectiveness of Maintenance Immunosuppression Therapies in a Matched-Pair Analysis Cohort of 16 Years of Renal Transplant in the Brazilian National Health System. *Int J Environ Res Public Health.* 2020;17(6).

36. Yin X, Liu H, Trieu K, Webster J, Farrand C, …, **Pearson S**, … et al. The effectiveness, feasibility, and acceptability of low-sodium salts worldwide: An environmental scan protocol. *J Clin Hypertens.* 2020;22(12):2258-65.

37. Godman B, McCabe H, Leong TD, Mueller D, Martin AP, …, **de Oliveira Costa J**, … et al. Fixed dose drug combinations – are they pharmacoeconomically sound? Findings and implications especially for lower- and middle-income countries. *Expert Rev Pharmacoeconomics Outcomes Res.* 2020;20(1):1-26.

38. Stock SJ, Brockway M, **Zoega H**, Been JV, Sheikh A, Bhutta ZA, et al. Enabling a healthy start for vulnerable newborns. *Lancet.* 2020;396(10261):1490.

39. Kocaballi AB, Ijaz K, Laranjo L, **Quiroz JC**, Rezazadegan D, Tong HL, … et al. Envisioning an artificial intelligence documentation assistant for future primary care consultations: A co-design study with general practitioners. *J Am Med Inform Assoc.* 2020;27(11):1695-704.

40. **Favelle D, Tang M, Daniels B**, Vajdic C, **Zoega H, Pearson SA**. Capture of systemic anticancer medicines in Pharmaceutical Benefits Scheme (PBS) data likely higher than previously reported. *Public Health Res Pract.* 2020;30(2):e3022013.

41. Judd JA, **Griffiths K**, Bainbridge R, Ireland S, Fredericks B. Equity, gender and health: A cross road for health promotion. *Health Promot J Austr.* 2020;31(3):336-9.

42. Badgery-Parker T, **Pearson SA**, Elshaug AG. Estimating misclassification error in a binary performance indicator: case study of low value care in Australian hospitals. *BMJ Qual Saf.* 2020;29(12):992-9.

43. Khalifa M, Magrabi F, **Gallego Luxan B**. Evaluating the Impact of the Grading and Assessment of Predictive Tools Framework on Clinicians and Health Care Professionals' Decisions in Selecting Clinical Predictive Tools: Randomized Controlled Trial. *J Med Internet Res.* 2020;22(7):e15770.

44. **Falster MO, Schaffer AL**, Wilson A, Nasis A, J**orm LR, … Pearson SA,** …et al. Evidence-practice gaps in P2Y12 inhibitor use after hospitalisation for acute myocardial infarction: findings from a new population-level data linkage in Australia. *Intern Med J.* 2020.

45. Gould GS, **Havard A**, Lim LL, The PSANZ Smoking In Pregnancy Expert G, Kumar R. Exposure to Tobacco, Environmental Tobacco Smoke and Nicotine in Pregnancy: A Pragmatic Overview of Reviews of Maternal and Child Outcomes, Effectiveness of Interventions and Barriers and Facilitators to Quitting. *Int J Environ Res Public Health.* 2020;17(6).

46. Gisev N, **Brett J**, Peacock A. Extra-medical use of antipsychotics: what can be learnt from experiences with other prescription medicines? *Addiction.* 2020;115(7):1203-5.

47. Mackenzie P, **Vajdic C**, Delaney G, Gabriel G, Agar M, Comans T, et al. Factors affecting radiotherapy utilisation in geriatric oncology patients in NSW, Australia. Tech Innov *Patient Support Radiat Oncol.* 2020;16:17-23.

48. Huang L, Yu J, Neal B, Liu Y, Yin X, Hao Zm ,… **Pearson S,** …et al. Feasibility and validity of using death surveillance data and SmartVA for fact and cause of death in clinical trials in rural China: a substudy of the China salt substitute and stroke study (SSaSS). *J Epidemiol Community Health.* 2020.

49. **Churches T, Jorm L**. Flexible, Freely Available Stochastic Individual Contact Model for Exploring COVID-19 Intervention and Control Strategies: Development and Simulation. *JMIR Public Health Surveill.* 2020;6(3):e18965.

50. **Hsu B**, Naganathan V, Blyth FM, Hirani V, Le Couteur DG, Waite LM, et al. Frailty and Cause-Specific Hospitalizations in Community-Dwelling Older Men. *J Nutr Health Aging.* 2020;24(6):563-9.

51. **Chambers GM, Keller E**, Choi S, Khalaf Y, Crawford S, **Botha W**, …et al. Funding and public reporting strategies for reducing multiple pregnancy from fertility treatments. *Fertil Steril*. 2020;114(4):715-21.

52. **Laaksonen MA**, MacInnis RJ, Canfell K, Giles GG, Hull P, Shaw JE, et al. The future burden of kidney and bladder cancers preventable by behavior modification in Australia: A pooled cohort study. *Int J Cancer*. 2020;146(3):874-83.

53. Barr ML, **Welberry H**, Hall J, Comino EJ, Harris E, Harris-Roxas BF, …et al. General practitioner follow-up after hospitalisation in Central and Eastern Sydney, Australia: access and impact on health services. *Aust Health Rev.* 2021;45(2):247-54.

54. Lenzen M, Li M, Malik A, Pomponi F, Sun YY, … **Gallego B**, … et al. Global socio-economic losses and environmental gains from the Coronavirus pandemic. *PLoS One.* 2020;15(7):e0235654.

55. **Lee ML, Tran DT,** Welsh A, Kennedy D, **Havard A**. Health-care providers' concern regarding smoking cessation pharmacotherapies during pregnancy: Calls to a teratology information service. *Drug Alcohol Rev.* 2020;39(3):223-31.

56. Stefani M, Roberts DM, **Brett J.** High-dose insulin euglycemic therapy to treat cardiomyopathy associated with massive venlafaxine overdose. *Clin Toxicol.* 2020;58(4):299-300.

57. Badgery-Parker T, **Pearson SA**, Elshaug AG. Hospital characteristics associated with low-value care in public hospitals in New South Wales, Australia. *BMC Health Serv Res*. 2020;20(1):750.

58. **Quiroz JC,** Laranjo L, Kocaballi AB, Briatore A, Berkovsky S, Rezazadegan D, et al. Identifying relevant information in medical conversations to summarize a clinician-patient encounter. *Health Informatics J.* 2020;26(4):2906-14.

59. Dyer S, **Chambers GM**, Adamson GD, Banker M, De Mouzon J, Ishihara O, …et al. Identifying suitable indicators of access to infertility care - a discussion. *Reprod Biomed Online.* 2020;41(6):1158.

60. McNamara BJ, Jones J, Shepherd C, Gubhaju L, Joshy G, …, **Jorm LR**, …et al. Identifying young Aboriginal and Torres Strait Islander children in linked administrative data: A comparison of methods. *Int J Popul Data Sci.* 2020;5(1):1100.

61. Clifford SC, **Griffiths KE**, Smith JA. The impact of an alcohol floor price on critical care admissions in Central Australia. *Med J Aust.* 2020;212(8):385-e1.

62. Wu J, Dickinson S, Elgebaly Z, Blogg S, Heaney A, … **Daniels B**, …et al. Impact of NPS MedicineWise general practitioner education programs and Choosing Wisely Australia recommendations on prescribing of proton pump inhibitors in Australia. *BMC Fam Pract*. 2020;21(1):85.

63. **Welberry HJ**, Brodaty H, **Hsu B, Barbieri S, Jorm LR.** Impact of Prior Home Care on Length of Stay in Residential Care for Australians With Dementia. *J Am Med Dir Assoc.* 2020;21(6):843-50 e5.

64. Kaandorp MPT, **Barbieri S**, Klaassen R, van Laarhoven HWM, Crezee H, While PT, …et al. Improved unsupervised physics-informed deep learning for intravoxel incoherent motion modeling and evaluation in pancreatic cancer patients. *Magn Reson Med.* 2021;86(4):2250-65.

65. Kleinstern G, Yan H, Hildebrandt MAT, Vijai J, Berndt SI, … **Vajdic CM**, …et al. Inherited variants at 3q13.33 and 3p24.1 are associated with risk of diffuse large B-cell lymphoma and implicate immune pathways. *Hum Mol Genet*. 2020;29(1):70-9.

66. de Mouzon J, **Chambers GM**, Zegers-Hochschild F, Mansour R, Ishihara O, Banker M, et al. International Committee for Monitoring Assisted Reproductive Technologies world report: assisted reproductive technology 2012dagger. *Hum Reprod.* 2020;35(8):1900-13.

67. Karatasiou GI, Bosdou JK, **Venetis CA,** Zepiridis L, Chatzimeletiou K, Tarlatzi TB, et al. Is the probability of pregnancy after ovarian stimulation for IVF associated with serum estradiol levels on the day of triggering final oocyte maturation with hCG? A systematic review and meta-analysis. *J Assist Reprod Genet.* 2020;37(7):1531-41.

68. Dyer S, **Chambers GM**, Adamson GD, Banker M, De Mouzon J, … et al. ART utilization: an indicator of access to infertility care. *Reprod Biomed Online.* 2020;14(1);6-9.

69. Prentice L, Sadler L, Lensen S, Vercoe M, Wilkinson J, Edlin R, et al. IVF and IUI in couples with unexplained infertility (FIIX study): study protocol of a non-inferiority randomized controlled trial. *Hum Reprod Open.* 2020;2020(3):hoaa037.

70. Odutola MK, Nnakelu E, Giles GG, **van Leeuwen MT,** Vajdic CM. Lifestyle and risk of follicular lymphoma: a systematic review and meta-analysis of observational studies. *Cancer Causes Control.* 2020;31(11):979-1000.

71. Kleinstern G, Camp NJ, Berndt SI, Birmann BM, Nieters A, …, **Vajdic C**, …et al. Lipid Trait Variants and the Risk of Non-Hodgkin Lymphoma Subtypes: A Mendelian Randomization Study. *Cancer Epidemiol Biomarkers Prev.* 2020;29(5):1074-8.

72. **Falster MO**, Charrier R, **Pearson SA**, Buckley NA, **Daniels B**. Long-term trajectories of medicine use among older adults experiencing polypharmacy in Australia. *Br J Clin Pharmacol.* 2021;87(3):1264-74.

73. **Daniels B, Pearson SA**, Buckley NA, Bruno C, **Zoega H**. Long-term use of proton-pump inhibitors: whole-of-population patterns in Australia 2013-2016. *Therap Adv Gastroenterol.* 2020;13:1756284820913743.

74. Kelty E, **Tran D**, Atkinson A, Preen DB, **Havard A.** Maternal and neonatal health outcomes associated with the use of gliclazide and metformin for the treatment of diabetes in Pregnancy: A Record Linkage Study. *Diabetes Technol Ther.* 2020;22(2):96-102.

75. **Welberry HJ**, Brodaty H, **Hsu B, Barbieri S, Jorm LR**. Measuring dementia incidence within a cohort of 267,153 older Australians using routinely collected linked administrative data. *Sci Rep.* 2020;10(1):8781.

76. **Griffiths K**, Smith J. Measuring health disparities in Australia: Using data to drive health promotion solutions. *Health Promot J Austr.* 2020;31(2):166-8.

77. Maor D, **Vajdic CM**, Cumming S, Fahey V, Bala HR, Snaidr V, et al. Melanoma in a cohort of organ transplant recipients: Experience from a dedicated transplant dermatology clinic in Victoria, Australia. *J Am Acad Dermatol.* 2020;83(3):773-9.

78. Fraison E, Kostova E, Moran LJ, Bilal S, Ee CC, **Venetis C**, …et al. Metformin versus the combined oral contraceptive pill for hirsutism, acne, and menstrual pattern in polycystic ovary syndrome. *Cochrane Database Syst Rev*. 2020;8:CD005552.

79. **Venetis C**, d'Hooghe T, Barnhart KT, Bossuyt PMM, Mol BWJ. Methodologic considerations in randomized clinical trials in reproductive medicine. *Fertil Steril.* 2020;113(6):1107-12.

80. Peng Z, Hayen A, Kirk MD, **Pearson S**, Cheng AC, Liu B. Microbiology testing associated with antibiotic dispensing in older community-dwelling adults. *BMC Infect Dis.* 2020;20(1):306.

81. Laranjo L, **Quiroz JC**, Tong HL, Arevalo Bazalar M, Coiera E. A Mobile Social Networking App for Weight Management and Physical Activity Promotion: Results From an Experimental Mixed Methods Study. *J Med Internet Res.* 2020;22(12):e19991.

82. **Brew BK,** Gong T. Modelling paternal exposure as a negative control. *Int J Epidemiol.* 2020;49(3):1053-4.

83. **Venetis CA**. Monozygotic twinning after PGT: methodological considerations. *BJOG.* 2020;127(5):570.

84. Wylie CE, **Daniels B, Brett J, Pearson SA**, Buckley NA. A national study on prescribed medicine use in Australia on a typical day. *Pharmacoepidemiol Drug Saf.* 2020;29(9):1046-53.

85. Joseph FA, Hyett JA, Schluter PJ, McLennan A, Gordon A, **Chambers GM**, Hilder L, **Choi SKY**, de Vries B. New Australian birthweight centiles. *Med J Aust.* 2020;213(2):79-85.

86. Kunwar R, **Vajdic C**, Muscatello DJ. Parental international migration is not associated with improved health care seeking for common childhood illnesses and nutritional status of young children left-behind in Nepal. *Public Health.* 2020;186:137-43.

87. **Chambers GM, Venetis CA, Jorm LR**, Stavrou EP, **Vajdic CM**. Parity: A key measure of confounding in data-linkage studies of outcomes after medically assisted reproduction. *Int J Popul Data Sci.* 2020;5(1):1119.

88. Wertheimer G, Mathieson S, Maher CG, Lin C-WC, McLachlan AJ, Buchbinder R, **Pearson SA,** Underwood M. The Prevalence of Opioid Analgesic Use in People with Chronic Noncancer Pain: Systematic Review and Meta-Analysis of Observational Studies. *Pain Medicine.* 2020.

89. Chiu T, **Brett J, Pearson SA, Schaffer AL**. Patterns of pregabalin initiation and discontinuation after its subsidy in Australia. *Br J Clin Pharmacol.* 2020;86(9):1882-7.

90. **Choi SKY,** Gordon A, Hilder L, Henry A, Hyett JA, **Brew BK**, …et al. Performance of six birth-weight and estimated-fetal-weight standards for predicting adverse perinatal outcome: a 10-year nationwide population-based study. *Ultrasound Obstet Gynecol.* 2021;58(2):264-77.

91. Zheng D, **Brett J, Daniels B**, Buckley NA, **Pearson SA, Schaffer AL**. Potentially inappropriate benzodiazepine use in Australian adults: A population-based study (2014-2017). *Drug Alcohol Rev.* 2020;39(5):575-82.

92. Aitken SJ, **Lujic S**, Randall DA, Noguchi N, Naganathan V, Blyth FM. Predicting outcomes in older patients undergoing vascular surgery using the Hospital Frailty Risk Score. *Br J Surg.* 2020.

93. **Schaffer AL**, Busingye D, Chidwick K, **Brett J**, Blogg S. Pregabalin prescribing patterns in Australian general practice, 2012-2018: a cross-sectional study. *BJGP Open.* 2021;5(1).

94. **Chambers GM**, Settumba SN, Carey KA, Cairns A, Menezes MP, Ryan M, …et al. Prenusinersen economic and health-related quality of life burden of spinal muscular atrophy. *Neurology.* 2020;95(1):e1-e10.

95. **Falster K, Hanly M**, Edwards B, Banks E, Lynch JW, Eades S, et al. Preschool attendance and developmental outcomes at age five in Indigenous and non-Indigenous children: a population-based cohort study of 100 357 Australian children. *J Epidemiol Community Health.* 2020.

96. Teixeira LSL, Ceccato M, Carvalho WDS, **Costa JO**, Bonolo PF, Mendes JC, et al. Prevalence of smoking and associated factors in people living with HIV undergoing treatment. *Rev Saude Publica.* 2020;54:108.

97. Cohen JM, Cesta CE, Furu K, Einarsdottir K, Gissler M, **Havard A**, …et al. Prevalence trends and individual patterns of antiepileptic drug use in pregnancy 2006-2016: A study in the five Nordic countries, United States, and Australia. *Pharmacoepidemiol Drug Saf.* 2020;29(8):913-22.

98. Raymer J, Guan Q, Norman RJ, Ledger W, **Chambers GM**. Projecting future utilization of medically assisted fertility treatments. *Popul Stud.* 2020;74(1):23-38.

99. Sexton JK, Coory M, Kumar S, Smith G, Gordon A, **Chambers G**, et al. Protocol for the development and validation of a risk prediction model for stillbirths from 35 weeks gestation in Australia. *Diagn Progn Res.* 2020;4(1):21.

100. Pimentel GS, Ceccato M, **Costa JO**, Mendes JC, Bonolo PF, Silveira MR. Quality of life in individuals initiating antiretroviral therapy: a cohort study. *Rev Saude Publica*. 2020;54:146.

101. Shand AW, Bell J, Henry A, Grzeskowiak LE, Kidson-Gerber G, **Pearson S**, …et al. Rapid increase in intravenous iron therapy for women of reproductive age in Australia. *Med J Aust.* 2020;213(2):85-6.

102. **Jorm L**, Sedrakyan A, Wright G. Reply. A*nn Thorac Surg.* 2020;109(2):613-4.

103. Kocaballi AB, **Quiroz JC**, Rezazadegan D, Berkovsky S, Magrabi F, Coiera E, …et al. Responses of Conversational Agents to Health and Lifestyle Prompts: Investigation of Appropriateness and Presentation Structures. *J Med Internet Res.* 2020;22(2):e15823.

104. Luckett T, Newton-John T, Phillips J, Holliday S, Giannitrapani K, Powell-Davies G, …., **Pearson SA,** …et al. Risk of opioid misuse in people with cancer and pain and related clinical considerations: a qualitative study of the perspectives of Australian general practitioners. *BMJ Open.* 2020;10(2):e034363.

105. **Daniels B, Pearson SA, Vajdic CM**, Pottegard A, Buckley NA, **Zoega H.** Risk of squamous cell carcinoma of the lip and cutaneous melanoma in older Australians using hydrochlorothiazide: A population-based case-control study. *Basic Clin Pharmacol Toxicol.* 2020;127(4):320-8.

106. **Hanly M**, Falster K, Banks E, Lynch J, **Chambers CM**, Brownell M, …et al. Role of maternal age at birth in child development among Indigenous and non-Indigenous Australian children in their first school year: a population-based cohort study. *Lancet Child Adolesc Health*. 2020;4(1):46-57.

107. Liu D, Gunther K, Enriquez LA, **Daniels B**, O'Mara TA, Tang K, …et al. ROR1 is upregulated in endometrial cancer and represents a novel therapeutic target. *Sci Rep.* 2020;10(1):13906.

108. Rosales B, Hedley J, De La Mata N, **Vajdic CM**, Kelly P, Wyburn K, et al. Safety and Biovigilance in Organ Donation (SAFEBOD): Protocol for a Population-Based Cohort Study. *JMIR Res Protoc.* 2020;9(10):e18282.

109. Tran B, **Vajdic CM**, Webber K, Laaksonen MA, Stavrou EP, Tiller K, …et al. Self-reported health, lifestyle and social circumstances of Australian adult cancer survivors: A propensity score weighted cross-sectional study. *Cancer Epidemiol.* 2020;67:101773.

110. Ghinea N, Wiersma M, Kerridge I, Olver I, **Pearson S**, Day R, et al. "Some sort of fantasy land": A qualitative investigation of appropriate prescribing in cancer care. *J Eval Clin Pract.* 2020;26(3):747-54.

111. Ghinea N, Critchley C, Morrell B, Kerridge I, Campbell T, … **Pearson S**, …et al. A survey of Australian public attitudes towards funding of high cost cancer medicines. *Health Policy*. 2021;125(3):327-34.

112. Cunio CB, Uster DW, Carland JE, Buscher H, Liu Z, **Brett J**, …et al. Towards precision dosing of vancomycin in critically ill patients: an evaluation of the predictive performance of pharmacometric models in ICU patients. *Clin Microbiol Infect.* 2020.

113. Black E, Govindasamy L, Auld R, McArdle K, Sharpe C, … **Brett J**, …et al. Toxicological analysis of serious drug-related harm among electronic dance music festival attendees in New South Wales, Australia: A consecutive case series. *Drug Alcohol Depend.* 2020;213:108070.

114. Glanville EJ, **Venetis C**, Boothroyd CA, Farquhar C, Hull ML. The use of oil-soluble contrast media for tubal flushing in infertility: A consensus statement from ACCEPT (Australasian CREI Consensus Expert Panel on Trial evidence). *Aust N Z J Obstet Gynaecol.* 2020;60(5):667-70.

115. Andrews CJ, Ellwood D, Middleton PF, Homer CSE, Reinebrant HE, **Donnolley N**, … et al. Survey of Australian maternity hospitals to inform development and implementation of a stillbirth prevention 'bundle of care'. *Women and Birth.* 2020;33(3), 251-258.

116. D'Souza R, Villani L, Hall C, Seyoum M, Kingdom J, … **Donnolley N**, Javid, N. Core outcome set for studies on pregnant women with vasa previa (COVasP): a study protocol. *BMJ Open.* 2020;10(7):e034018.

117. Halfdanarson OO, Pottegard A, Lund SH, Ogmundsdottir MH, Ogmundsdottir HM, **Zoega H.** Use of proton pump inhibitors and mortality among Icelandic patients with prostate cancer. *Basic Clin Pharmacol Toxicol.* 2020;126(6):484-91.

118. **Tran DT,** Preen DB, Einarsdottir K, Kemp-Casey A, Randall D, **Jorm LR, Choi SKY, Havard A**. Use of smoking cessation pharmacotherapies during pregnancy is not associated with increased risk of adverse pregnancy outcomes: a population-based cohort study. *BMC Med.* 2020;18(1):15.

119. **Raichand S, Pearson SA, Zoega H**, Buckley NA, **Havard A**. Utilisation of teratogenic medicines before and during pregnancy in Australian women. *Aust N Z J Obstet Gynaecol.* 2020;60(2):218-24.

120. Ha TK, Rao RR, Maykin MM, Mei JY, **Havard AL,** Gaw SL. Vaginal birth after cesarean: Does accuracy of predicted success change from prenatal intake to admission? *Am J Obstet Gynecol MFM*. 2020;2(2):100094.

121. **Sotade O, Falster M,** Girardi L, P**earson SA, Jorm LR**. Age-stratified outcomes of bioprosthetic and mechanical aortic valve replacements in an Australian cohort of 13 377 patients. *BMJ Surg Interv Health Technologies*. 2020;2:e000036.

122. Lainas G, Lainas T, Sfontouris I, **Venetis CA,** Bodsou J, …et al. Association between body mass index and oocyte maturation in patients triggered with GnRH agonist who are at high risk for severe ovarian hyperstimulation syndrome: an observational cohort study. *Reprod Biomed Online.* 2019;40(1):P168-175.

123. Chitty KM, Schumann J, **Schaffer A,** Cairns R, Gonzaga NJ, Raubenheimer JE, Carter G, Page A, **Pearson SA**, Buckley NA. Australian Suicide Prevention using Health-Linked Data (ASHLi): Protocol for a population-based case series study. *BMJ Open.* 2020;10:e038181.

124. Le Couteur DG, Ribeiro R, Senior A, **Hsu B**, Hirani V … et al. Branched Chain Amino Acids, Cardiometabolic Risk Factors and Outcomes in Older Men: The Concord Health and Ageing in Men Project. *J Gerontol A Biol Sci Med Sci*. 2020;75(10):1805-1810.

125. Furtado Dos Santos S, Almeida-Brasil CC, **Costa J**, Reis EA, Afonso Cruz M, Silveira MR Ceccasto MDGB. Does switching from multiple to single-tablet regimen containing the same antiretroviral drugs improve adherence? A group-based trajectory modeling analysis. *AIDS Care.* 2020;32(10):1268-1276.

126. **Lee ML, Tran DT,** Welsh A, Kennedy D, **Havard A.** Health-care providers' concern regarding smoking cessation pharmacotherapies during pregnancy: Calls to a teratology information service. *Drug Alcohol Rev.* 2020;39(3):223-231.

127. Kelty E, **Tran D**, Atkinson A, Preen DB, **Havard A.** Maternal and Neonatal Health Outcomes Associated with the Use of Gliclazide and Metformin for the Treatment of Diabetes in Pregnancy: A Record Linkage Study. *Diabetes Technol Ther.* 2020;22(2):96-102.

128. **Tran DT**, Preen DB, Einarsdottir K, Kemp-Casey A, Randall D, J**orm LR, Choi SKY, Havard A**. Use of smoking cessation pharmacotherapies during pregnancy is not associated with increased risk of adverse pregnancy outcomes: a population-based cohort study. *BMC Med.* 2020;18(1):15.

129. **Welberry H,** Brodaty H, **Hsu B, Barbieri S, Jorm L.** Measuring dementia incidence within a cohort of 267,153 older Australians using routinely collected linked administrative data. *Scientific Reports*. 2020;10(1):1-14.

130. **Keller E,** Botha W, Ortmann A, **Jorm LR, Chambers GM**. PIH2 Does Fertility Treatment Provide Good VALUE for Money? a Cost-Benefit Analysis. *Value in Health Regional*. 2020;22:S44.

131. Gidding HF, Flack LK, Sheridan S, Liu B, Fathima P, Sheppeard V, … **Jorm LR,** …et al. Infant, maternal and demographic predictors of delayed vaccination: A population-based cohort study. *Vaccine*. 2020;38(38);6057-6064.

132. **Zhu J, Gallego B**. Evolution of disease transmission rate during the course of SARS-COV-2: patterns and determinants. 2020 Available at SSRN: https://ssrn.com/.

133. Kennedy G, Rihari-Thomas J, Dras M, **Gallego B.** Developing a deep learning system to drive the work of the critical care outreach team. *medRxiv*. 2020.

134. Mathieson S, Wertheimer G, Maher CG, Christine Lin CW, McLachlan AJ, Buchbinder R, **Pearson SA**, Underwood M. What proportion of patients with chronic noncancer pain are prescribed an opioid medicine? Systematic review and meta-regression of observational studies. *J Intern Med*. 2020;287(5):458-474.

135. **Daniels B,** Tervonen HE, **Pearson SA.** Identifying incident cancer cases in dispensing claims: A validation study using Australia's Repatriation Pharmaceutical Benefits Scheme (PBS) data. *Int J Popul Data Sci.* 2020;5(1):1152.

136. Gedye C, Sachchithananthan M, Leonard R, Jeffree RL, Buckland ME, Ziegler DS, Graeber MB, Day BW, McDonald KL, Lasocki A, BCBA Consortium incl. **Vajdic C,** Nowak AK. Driving innovation through collaboration: development of clinical annotation datasets for brain cancer biobanking. *Neuro-Oncology Practice*. 2020;1(1):31-37.

137. Moore A, Kane E, Wang Z, Panagiotou OA, Teras LR, … **Vajdic CM**, … et al. Genetically determined height and risk of non-Hodgkin lymphoma. *Frontiers in Oncology*. 2020;9:1529.

138. Kleinstern G, Hildebrand MAT, Joseph V, Yan H, Berndt SI, … **Vajdic CM,** … et al. Inherited variants at 3q13.33 and 3p24.1 are associated with risk of diffuse large B-cell lymphoma and implicate immune pathways. *Human Mol Gen*. 2020;29(1):70-79.

LETTER TO EDITORS

1. Favell DL, **Monica T, Daniels B, Vajdic CM, Zoega H, Pearson SA.** Capture of systemic anticancer medicines with Pharmaceutical Benefits Scheme data likely higher than previously reported. *Public Health Res Pract.* 2020;30(2):3022013.

2. Stock SJ, Brockway M, **Zoega H**, Been JV, Sheikh A, … et al. Enabling a healthy start for vulnerable newborns. Lancet. 2020.

REPORTS

1. Department of Health and Human Services (Victoria) and Expert Working Group (including **Vajdic CM**). Optimal care pathway for people with cancer of unknown primary (CUP) 2020.

2. Pearse J, Mazevska D, McElduff P, Tuccia J, Stone C, Cho O, Robertson E, Taylor P, J**orm L, Pearson S, Falster M, Tran D**, … et al. Evaluation of the Health Care Homes Program - Interim Evaluation Report 2020.

3. **Newman JE, Paul RC, Chambers GM**. Assisted reproductive technology in Australia and New Zealand 2018. Sydney: National Perinatal Epidemiology and Statistics Unit, the University of New South Wales, Sydney. 2020.

Invited conference presentations
2020

1. **Chambers GM**. Fertility & Sterility Journal Club Global - LIVE at ASRM 2020: High multiple pregnancy rates in IVF are not a thing of the past! Could we do better? *Virtual American Society of Reproductive Medicine* (ASRM) October 2020 [Invited speaker].

2. **Falster M**. Evidence-practice gaps in post-discharge cardiovascular care: findings from a novel population-level data linkage. *SAHMRI Registry Centre Data Linkage Workshop*, 12 October 2020 [Invited speaker].

3. **Gallego Luxan B**. *Austin Health Informatics and Analytics Grand Round,* 2020 [Invited speaker].

4. **Gallego Luxan B.** COVID19 in Latin America. *ANU Webinar Series,* 2020 [Invited speaker].

5. **Jorm LR.** Australian 'big data' approaches to real-world evidence. *Federal Drug Administration, USA,* virtual seminar, 2020 [Invited speaker].

6. **Jorm LR.** Privacy and open access to health data. *Australian Clinical Trials Alliance Summit*, held virtually, 2020 [Invited keynote speaker].

7. **Jorm LR**. Towards machine learning-enabled epidemiology. *International Population Data Linkage Network Conference,* held virtually, 2020 [Invited keynote speaker].

8. Jorm LR. **Realising the potential of government** data. Network of Research and Data Specialists, (NeRDS) *NSW Department of Customer Service data day,* Sydney, 2020 [Invited keynote speaker].

9. **Venetis CA.** Is more eggs better? *Scientific Meeting of SIRT (Scientists in Reproductive Technology),* Sydney, 2020 [Invited speaker].

10. **Venetis CA**. Interpreting progesterone to guide treatment. *Updates in Infertility Treatment 2020– UIT 2020,* Seville, Spain, 2020 [Invited speaker].

11. **Venetis CA.** The evidence for the use of FSH in IVF: a comprehensive review. *8th Masterclass of ASPIRE,* Tokyo, Japan, 2020 [Invited speaker].

12. **Venetis CA.** Evidence for the use of Melatonin, CoQ10 and other agents in poor ovarian response. *8th Masterclass of ASPIRE*, Tokyo, Japan, 2020 [Invited speaker].

13. **Venetis CA.** Progesterone monitoring: when to test and how to use it in ART. *Annual Conference Fertility Innovation in Reproductive Endocrinology – FIRE,* Sydney, 2020 [Invited speaker].

14. **Venetis CA.** Optimizing ovarian stimulation to improve live birth rates. *Genesis Conference, Intas Pharmaceuticals,* India, 2020 [Invited speaker].

15. **Venetis CA.** COVID-19, Fertility and Pregnancy. *Meet the Experts Seminar organised by Merck,* 2020 [Invited speaker].

16. **Venetis CA.** What is the optimal GnRH antagonist protocol? *Webinar for Chinese Healthcare Professionals, InMed Medical Communication,* Αύγουστος 2020 [Invited speaker].

17. **Venetis CA**. The future of Clinical Research in IVF. *Virtus Health Clinical Meeting,* 2020 [Invited speaker].

18. **Venetis CA.** Critical appraisal of the literature: Prognosis. *Critical Appraisal of the literature for RANZCOG trainees in CREI, Merck Australia,* 2020 [Invited speaker].

19. **Venetis CA.** What is the role of endometrium in recurrent implantation failure? The Endometrium in ART: Truths and Fallacies of the black box of embryo implantation. *European Society of Human Reproduction and Embryology, ESHRE,* 2020 [Invited speaker].

20. **Venetis CA.** What is the optimal GnRH antagonist protocol? *FertiVision 2020 Indian Fertility Society,* 2020 [Invited speaker].

21. **Venetis CA.** Thin Endometrium - Hormones. *Webinar "Thin Endometrium" ASPIRE,* 2020 [Invited speaker].