

**AUSTRALIAN INSTITUTE
OF HEALTH INNOVATION**

*Faculty of Medicine and
Health Sciences*



**MACQUARIE
University**

Australian Institute of Health Innovation

ANNUAL REPORT

2016



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Who we are

The Australian Institute of Health Innovation (AIHI) at Macquarie University conducts world-class research with national and international research communities, governments, policymakers, providers of health services, managers, clinicians, patients and the community. Our work underpins health reforms and systems improvement, providing new tools, perspectives and evidence to help stakeholders who are interested in making the health system more effective, efficient and productive. Our overarching aim is to produce new, high-quality research evidence to support change, prevention and improvement in the Australian health system.

Across the Institute, our research projects, with prevention as their primary focus, include: the use of online tools to support consumer behaviour and lifestyle change to manage obesity; modelling the reasons for community refusal of vaccination, and; resultant methods of communication with vaccination-hesitant communities. Additionally, our work focuses on developing core research competencies, infrastructure and methods that have broad application across Australia. We have a particular focus on clinical analytics and implementation science.

We have over 180 researchers, fellows and visiting appointees, and over 20 higher degree research students, including PhD candidates, Master of Research and Master of Philosophy students. We publish more than 250 scientific papers and chapters per annum, and numerous monographs and reports. We also develop tools which enable interoperable evidence gathering, visualisation, analysis, and research automation methods.



AIHI IS COMPRISED OF THREE INTERRELATED RESEARCH CENTRES

1. Centre for Health Informatics (CHI)
2. Centre for Healthcare Resilience and Implementation Science (CHRIS)
3. Centre for Health Systems and Safety Research (CHSSR)

We are funded by the National Health and Medical Research Council (NHMRC), the Australian Research Council (ARC), NSW Ministry of Health and many other supporters, partners and stakeholders.

The Institute conducts a mix of research in the areas of prevention, early intervention, sustainability and research centred on adopting evidence and supporting its translation into practice. Our research provides evidence, theories and practical solutions (including tools and technology), as well as testing and evaluating policies and practices that contribute to enhancing the health of the population of Australia.

Founding Director's report

The Institute is celebrating its 10th anniversary and, in this our second full year at Macquarie University, we have gone from strength to strength. With my colleagues and fellow directors, Professors Enrico Coiera and Johanna Westbrook, the Institute carries out nationally-relevant and internationally-regarded research and collaborates on a multitude of health systems research projects, conducted in various ways. At the core of our interests, we want to do meaningful research which contributes to improving the health system and to making it safer and more effective for patients and their carers, and cost effective and sustainable for the government and the community.

Methodologically, we range from conducting randomised controlled trials (RCTs) to qualitative and quantitative studies, to analysing big data and applying analytics expertise to problems, through to smaller-scale projects, often run by higher degree research students. In many of our research projects we are applying a mix of methods, including combining quantitative and social science methods to develop more thorough answers to research questions, or to exhaustively test hypotheses.

Our superb accommodation is located off Innovation Road in North Ryde—a perfect name for the main driveway just outside our building and more than just symbolic. This is where we build on studies we have done in the past, the work of other scientists who share our interests in systems improvement and where we try to come up with new bright ideas. Our ideas come from many sources—our own staff, other staff in the faculty and beyond, including fellow academics across Macquarie University, and people in the health system who collaborate with us as partners. In fact, we are happy to work with a wide variety of partners and to generate

new ideas—such ideas build a study that might answer an important research question, or create an intervention designed to improve healthcare and its delivery to patients. We are acutely aware that new questions, new methods to tackle them and new ideas come from relationships.

As highlights of 2016, we are currently running over 50 different funded projects valued at almost \$40 million, and participating in another 17 grants administered by other institutions worth a similar amount. Overall, we attracted new funding in 2016 valued in excess of \$15 million. One notable milestone is that we secured the largest grant ever awarded to the Institute and the largest to Macquarie University in 2016: the NHMRC Partnership Centre in Health System Sustainability, valued at \$10.75 million.

It is always very pleasing when a wide range of the Institute's staff manage to secure their own new funds for research. This year, twenty-three of our staff were awarded Fellowships, or Grants, as the main investigator. In addition to that, twenty of our staff were conferred external awards or prizes for their work, including people who were invited to be a Fellow of a Learned Society, and others who won awards for presenting their work or for best paper in a journal. By way of example, the Institute celebrated the first AIHI paper published in *Nature*, a perspective by Dr Adam Dunn.

In addition, 16 staff members received an AIHI end-of-year award for meritorious service. They were recognised as Researcher of the Year, for Professional Excellence, for the Publication Prize, our Student Prize and our prize for Rising Stars; Ms Sheree Crick received the Directors' Award for Contributions to the Institute. These were all richly deserved internal awards.

We made excellent progress with our Doctor of Philosophy (PhD), Master of Research (MRes) and Master of Philosophy (MPhil) projects, including the graduation of our first doctorate at Macquarie University—Dr Scott Walter. Congratulations to Scott, and all our higher degree students for their progress. The next generation of health systems researchers are the key platform for our future.

In the following pages, you will find the names of our staff and students, some of their key projects, and their accomplishments, and the partners with whom they work. On behalf of my fellow Directors I would like to thank our Executive Dean, Professor Patrick McNeil, for chairing our Board, and for all Board Members, staff, students and collaborators for their diligent efforts and unstinting dedication to our research enterprise.



Professor Jeffrey Braithwaite
Founding Director

Our board



**PROFESSOR
PATRICK McNEIL
(CHAIR)**

Patrick McNeil is Macquarie University's inaugural Executive

Dean of the Faculty of Medicine and Health Sciences (FMHS) where he leads the Faculty's tripartite and integrated missions of academic clinical practice, education and research. He is also the Managing Director of Macquarie University Clinical Associates, which provides professional clinical services to Macquarie University Hospital which together with the Faculty forms MQ Health (Macquarie University Health Sciences Centre), Australia's first, fully integrated academic health sciences enterprise under a university's leadership.

As a clinical academic for over 21 years, Professor McNeil combined research with teaching medical students, and treating patients with arthritis. Arthritis is a common problem and seriously under-funded and under-recognised for its contribution to the overall health burden. As Chair of Arthritis Australia from 2010 to 2014 he served to assist in its mission of advocating for and improving the lives of the 3 million Australians living with arthritis.

Professor McNeil spent 12 years at Prince of Wales Hospital and in 2005 took up the Chair in Rheumatology at Liverpool Hospital. His interest in teaching and learning led him to complete a Graduate Diploma in Higher Education, and to a leadership role as Associate Dean, Education where he led the transformation of UNSW Sydney's medical curriculum to a highly innovative outcomes-based program that many now regard as one of Australia's pre-eminent medicine programs.

From 2012 to 2014 Professor McNeil joined the leadership team at Liverpool Hospital as

the Executive Clinical Director. In this role he worked to transform the ways that doctors, nurses and health professionals interact with each other and work to ensure patients receive timely, safe and effective care when they require hospital treatment.



**PROFESSOR
LESLEY HUGHES**

Lesley Hughes is a distinguished Professor of Biology and Pro Vice-Chancellor

(Research Integrity & Development) at Macquarie University. Professor Hughes has the responsibility to help sustain and grow the University's research profile through the development of research capability and the promotion of research integrity. Professor Hughes has been researching and communicating the science of climate change for more than 20 years. She was appointed Commissioner of the independent government advisory Climate Commission in 2011 and in 2013, became a pro-bono founding councillor of the Climate Council of Australia. She was a lead author for the UN's IPCC Fourth and Fifth Assessment Reports.



**PROFESSOR
LES WHITE AM**

Les White AM was appointed the inaugural New South Wales Chief Paediatrician

in September 2010. Professor White was Executive Director of Sydney Children's Hospital (1995–2010), President of Children's Healthcare Australasia (1999–2004), Convenor of the Greater Eastern and Southern NSW Child Health Network (2001–2010) and the John Beveridge Professor of Paediatrics (2005–2010). He was awarded a Doctorate of Science for research contributions

related to childhood cancer and completed his Master of Health Administration in 1995. He has served on numerous state and national boards/committees related to children's health and community support. In 2007 he received an Order of Australia award for service to medicine in the field of paediatrics, to medical administration, and to the community through a range of organisations.



**PROFESSOR
SALLY REDMAN AO**

Sally Redman AO, Chief Executive Officer of the Sax Institute, has extensive experience

in public health research, particularly the evaluation of programs designed to improve health and healthcare. Previously, she was the inaugural Director of the National Breast Cancer Centre. In 2001, Professor Redman was awarded the Centenary Medal for service to women diagnosed with breast cancer.



**PROFESSOR
CLIFF HUGHES AO**

Cliff Hughes AO is the President of the International Society for Quality

in Health Care (ISQua). Previously, he was the Chief Executive Officer of the Clinical Excellence Commission, a statutory health corporation established in 2004 to build capacity and design programs to promote and support improvement in quality and safety for health services across NSW. This appointment followed a 25-year career as a cardiothoracic surgeon in Sydney. He has been Chairman or member of numerous state and federal government committees associated with quality, safety and research in clinical practice for healthcare services. He has held various positions in the Royal Australasian College of Surgeons, including Senior

Examiner in Cardiothoracic Surgery and member of the College Council. In October 2015 he was awarded the Sir Hugh Devine Medal, the highest honour bestowed by the College. Professor Hughes has served on four editorial boards and has published widely in books, journals and conference proceedings on cardiothoracic surgery, quality and safety. He has a particular passion for patient-based care, improved incident management, quality improvement programs and the development of clinical leaders.



**PROFESSOR
PATRICK BOLTON**

Patrick Bolton has been Director of Clinical Services at Prince of Wales Hospital since

2007. During this period Professor Bolton fostered the development of processes to support improved patient outcomes including facilitating, resourcing and providing executive sponsorship for such improvements. Areas of particular interest included VTE prophylaxis and anticoagulant management, antimicrobial stewardship, infection prevention and control, handover, hand hygiene and medication safety.

These initiatives build on a career of leadership and innovation in health services reform, with a focus on health services integration underpinned by scholarship and evaluation. He was a member of the Commonwealth-funded General Practice Integration Support, Education and Research Unit (SERU) at UNSW Sydney where he was, and remains, Conjoint Associate Professor in the School of Public Health and Community Medicine.

He has been a co-recipient of over \$750,000 of peer reviewed grants and \$2m of other grants and consultancies. Professor Bolton is the author of 45 refereed publications

including 36 original research articles in peer reviewed journals. The main focus of his publications has been health service evaluation, care integration and health informatics. Recent publications contain reports of initiatives at the Prince of Wales Hospital to improve hand hygiene and infection control. He holds a PhD in Health Services Evaluation and his contribution to health services research has been recognised in a number of academic appointments.

Professor Bolton continues a modicum of clinical work in primary care, including hospital emergency departments. He has worked clinically in Aboriginal health and in rural and metropolitan areas. He has held appointments in NSW Ministry of Health and senior levels in Area Health Services, consulted to the Commonwealth Department of Health on information management in health and integrated care and was Vice-President of the Australian Hospitals and Healthcare Association. He has contributed to policy development at senior levels and in doing so has been informed by the breadth of his past and continuing experience of direct service delivery.



MS CARRIE MARR

Carrie Marr is the Chief Executive of the Clinical Excellence Commission (CEC) and brings to the role a wealth of

experience in quality improvement and patient safety, both within Australia and overseas. Prior to her role of Chief Executive, she was the Executive Director, Organisation Effectiveness at Western Sydney Local Health District (WSLHD). Ms Marr earlier held a number of leading executive and consultant positions in the United Kingdom where she specialised in organisational effectiveness, modernisation and development.

She was with the Tayside Health Board on the National Health Service, Scotland where she held a number of senior positions including Director of the Tayside Centre for Organisational Effectiveness; Associate Director, Change and Innovation; and Head of Modernisation and Development. Earlier she held the positions of Head of Learning and Development for Tayside Acute Hospitals and Director of Development for the National Health Service, Scotland, Dumfries and Galloway Health Board.

Ms Marr began her career in health as a nurse before moving into nursing education at St Columbus Hospice, Edinburgh, and after that with the Royal College of Nursing, Scotland. Carrie holds a Bachelor of Science (Nursing); a Diploma in Education (Nurse Teaching); and a Master of Science (Organisation Consulting). She has also completed an advanced training program in Quality Improvement at Intermountain Health Care, Utah, USA.



**PROFESSOR
GEORGE RUBIN**

George Rubin is Associate Medical Director for Epidemiology, Quality

and Safety in South Eastern Sydney Health District (SESLHD) and a Professor of Public Health at The University of Sydney and UNSW Sydney. He was President of the Australasian Faculty of Public Health Medicine; chaired the Australian Technical Advisory Group on Immunisation and served as Director of Epidemiology and then Chief Health Officer for NSW Ministry of Health. Professor Rubin worked as a medical epidemiologist with the US Centres for Disease Control in Atlanta, USA and in Bangladesh and has published more than 150 scientific papers and works clinically as an addiction medicine specialist.

He recently served a term on the Advisory Board of the National Blood Authority. As Chief Health Officer of NSW and Director of Epidemiology and Health Services Evaluation for NSW he was instrumental in establishing a public health infrastructure in NSW and helped establish the Australian Communicable Disease and Public Health Networks during which time he led many population health investigations.



**PROFESSOR
ADAM JAFFÉ**

Adam Jaffé is the John Beveridge Professor of Paediatrics, Head of Discipline of

Paediatrics, School of Women's and Children's Health at UNSW Sydney and Associate Director of Research for the Sydney Children's Hospitals Network (Randwick). He is also a paediatric respiratory consultant at the Sydney Children's Hospital, Randwick. Professor Jaffé was appointed Consultant in Respiratory Research at Great Ormond Street Hospital for Children, London, UK and headed up Respiratory Medicine Research at the Institute of Child Health, London, UK before moving to Sydney 10 years ago. His interests lie in the areas of paediatric respiratory diseases, respiratory infections, health services research and rare "orphan" lung diseases. Professor Jaffé has published in excess of 150 peer reviewed publications and has been associated with more than \$12 million in grant awards including two current NHMRC grants as Chief Investigator.



**PROFESSOR
CHRISTOPHER
COWELL**

Chris Cowell was appointed the Director of Research for the

Sydney Children's Hospitals Network in 2011. He is a Conjoint Professor of

The University of Sydney and staff specialist in paediatric endocrinology. As Director of Research, Professor Cowell's major focus is in developing research strategies that improve the health and wellbeing of young people. Facilitating research through effective collaborations is a key platform and he is co-leading the development of Paediatrio, a joint research initiative between the Sydney Children's Hospitals Network, Children's Cancer Institute, Children's Medical Research Institute, The University of Sydney and UNSW Sydney. He has also co-led the development of the Paediatric Trials Network Australia (PTNA). His own research interests are in prevention of metabolic effects of obesity and optimising bone health, and has over 180 peer-reviewed publications.

Our Directors



*Professor Jeffrey Braithwaite,
Professor Johanna Westbrook
and Professor Enrico Coiera*

PROFESSOR JEFFREY BRAITHWAITE
Founding Director, Australian Institute of Health Innovation and Director, Centre for Healthcare Resilience and Implementation Science

Professor Braithwaite has contributed over 800 total publications, 630 of which are peer-reviewed; he has presented at, or chaired, international and national conferences, workshops and seminars on more than 890 occasions, including 83 keynote addresses. His research appears in journals such as British Medical Journal, The Lancet, Social Science & Medicine, BMJ Quality and Safety, and International Journal of Quality in Health Care. He has received 33 different national and international awards for his teaching and research. Most recently, in 2015 he received the Health Services Research Award by Research Australia.

His research examines the changing nature of health systems, attracting funding of more than \$92 million. He is particularly interested in healthcare as a complex adaptive system, and applying complexity science to health care problems.

Professor Braithwaite has appointments at six other universities internationally and he is a board member of the International Society for Quality in Health Care (ISQua) and consultant to the World Health Organization (WHO).

Professor Braithwaite is currently working on research on improving delivery systems, particularly examining patient safety, change, resilience and implementation science.

PROFESSOR ENRICO COIERA
Director, Centre for Health Informatics and Director, NHMRC Centre for Research Excellence in E-health

Professor Coiera is an internationally recognised research leader in digital health and health systems science. He is dual trained in medicine and computer science with a doctorate in Artificial Intelligence (AI). He has a long-standing reputation for opening up new avenues of research in his field, allowing others to follow and extend his work. His ground-breaking research in the mid-1990s into clinical communication outlined the interruptive, multi-tasking nature of clinical work and its implications for patient safety and technology design.

In 2000 he founded the Centre for Health Informatics—now Australia’s first, longest-running and most successful digital health research organisation. With over 10,600 citations, Enrico has an h-index of 50 in Google scholar; 25 of these publications have more than 100 citations, 7 more than 300 with one having over 1,500. He has over 270 journal articles, books, chapters, and conference presentations.

He was the founding president of the Australasian College of Health Informatics (ACHI) in 2001, the first Australian Fellow of the American Medical Informatics Association and the first non-US Associate Editor of JAMIA—the peak Journal of the American Medical Informatics Association. Professor Coiera is a co-author of the seminal paper in digital health safety, published in JAMIA in 2003, and which now is the journal’s highest-cited paper of all time.

In 2015 Professor Coiera won the highest international award for digital health—the IMIA Francois Gremy Award of Excellence. He is a highly influential commentator on national e-health strategies, advocating strongly for rational policymaking based on sound evidence. His work has translated into policy and practice changes for e-health safety, multiple patented inventions, as well as for a US-based consumer e-health start-up company. He is author of one of the earliest textbooks on health informatics, which is widely used internationally, translated into multiple languages and now in its 3rd edition.

PROFESSOR JOHANNA WESTBROOK
Director, Centre for Health Systems and Safety Research

Professor Westbrook is internationally recognised for her research evaluating the effects of information and communication technology (ICT) in healthcare. She has over 390 publications, an h-index of 46 and been awarded in excess of \$50M in research grants.

Her research has included the development of new tools and methods which have been adopted internationally. She developed the Work Observation Method by Activity Timing (WOMBAT) technique and supporting data collection software to capture multi-dimensional aspects of clinical work and communication. WOMBAT is now used by over 30 research teams in 12 countries.

Professor Westbrook has made particular contributions to research in medication safety and the impact of information technologies, and currently leads research investigating the role of ICT in the community and aged care sector. Her research has led to significant advances in our understanding of how clinical information systems deliver (or fail to deliver) expected benefits. She has actively supported the translation of this evidence into policy, practice, and IT system changes, and governments and policy-makers internationally, have used her research to make informed decisions about health technology design, selection and use.

Professor Westbrook is an elected Fellow of the American College of Medical Informatics (ACMI) – one of only four Australians. In 2014 she was named Australian ICT Professional of the Year by the Australian Information Industry Association for her research contributions. In 2015 she was appointed as an Associate Editor of the Journal of the American Medical Informatics Association (JAMIA). She was also appointed Chair of the Deeble Institute Advisory Board by the Australian Healthcare and Hospitals Association in 2015. The Deeble Institute has a major focus on driving evidence-based health policy. In 2016, Professor Westbrook was elected by members to the Sax Institute Board.

In 2016, Professor Westbrook was appointed by the Federal Minister for Health to the Board of the Australian Digital Health Agency and chairs the national Digital Health Quality and Safety Governance Committee.

MACQUARIE UNIVERSITY
FACULTY OF MEDICINE AND HEALTH SCIENCES



**AUSTRALIAN INSTITUTE OF
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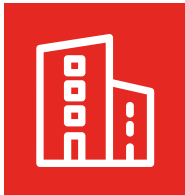
Institute Board



Institute Director
Professor Jeffrey Braithwaite



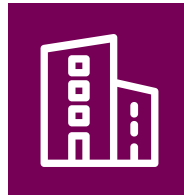
Institute Manager
Reza Bilimoria



**CENTRE FOR
HEALTH SYSTEMS AND
SAFETY RESEARCH**



Director
Professor Johanna Westbrook



**CENTRE FOR
HEALTHCARE RESILIENCE AND
IMPLEMENTATION SCIENCE**



Director
Professor Jeffrey Braithwaite



**CENTRE FOR
HEALTH INFORMATICS**



Director
Professor Enrico Coiera



Business Manager
Sheree Crick




Business Manager
Sue Christian-Hayes



Operations & Students Manager
Denise Tsiros

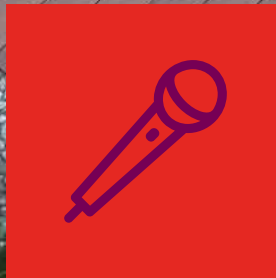
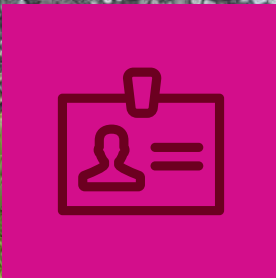
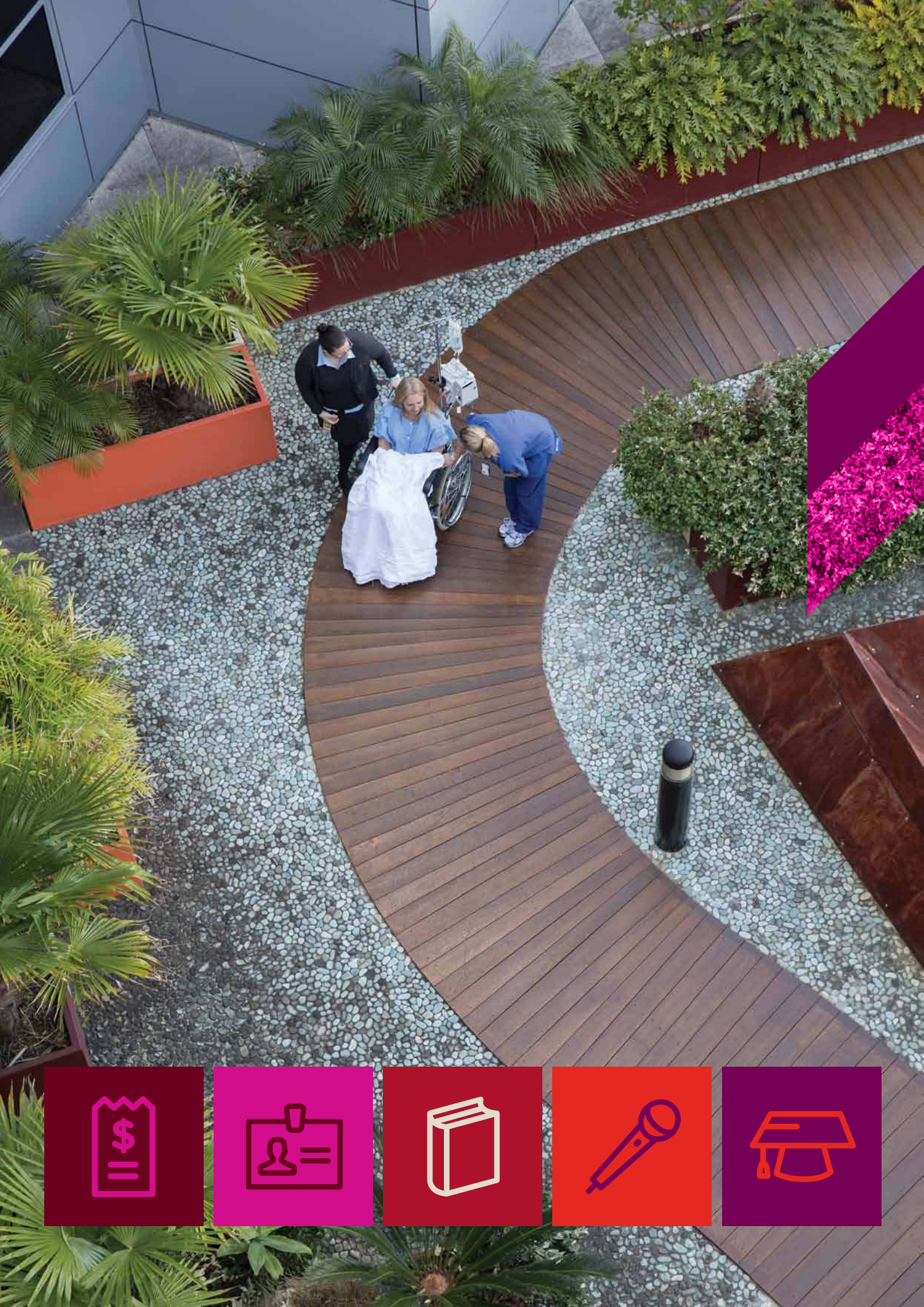


Business Manager
Jenny Waldie

A photograph of a modern building with a glass and brick facade. The building has a curved glass section and a brick wall on the left. A person is walking away on a paved walkway. The sky is blue with white clouds. The text is in the top right corner.

At the core of our interests, we want to do meaningful research which contributes to improving the health system and to making it safer and more effective for patients and their carers.

Professor Jeffrey Braithwaite
Founding Director



AIHI at a glance

53 GRANTS UNDER MANAGEMENT	NHMRC	10
	ARC	2
	Other	41

159 STAFF	Academic	50
	Professional	55
	Visiting	54

258 PUBLICATIONS	Books	2
	Book Chapters	30
	Refereed Journal Articles	132
	Conference Papers – Full Paper	12
	Conference Abstracts and Posters	82

29 EVENTS	Seminars	27
	Conferences	1
	Symposium	1

41 POSTGRADUATE AND VISITING STUDENTS	Postgraduate	28
	Visiting	13

The Institute's Centres



A



B



C



D

- A** Australian Institute of Health Innovation
- B** Centre for Health Informatics
- C** Centre for Health Systems and Safety Research
- D** Centre for Healthcare Resilience and Implementation Science





Centre for Health Informatics (CHI)

WHAT WE DO

The Centre for Health Informatics (CHI) is at the forefront of studying the potential for Information and Communication Technology (ICT) to change the way healthcare systems work. As the largest academic group in Australia researching health informatics, we have developed an international reputation as a research leader in the application of information technology to healthcare. CHI is a highly collaborative research centre working in partnership with major healthcare providers, research institutions, governments, and industry in Australia and overseas.

Our principal aim is to design and evaluate future healthcare systems in areas including Artificial Intelligence (AI), safety models and standards, communication systems, clinical decision support, patient care

and the application of data mining and social networks to healthcare. Our work at CHI is of direct relevance to clinicians, administrators, policy makers at all levels of government and industry healthcare providers.

In 2016, a highly successful year in attracting grant funding with multiple NHMRC project grants, a NSW Ministry of Health Early-Mid Career Research Fellowship and various industry contracts, we were also able to further our collaborative partnerships in Australia and overseas. Our researchers were highly sought-after to present at conferences in Australia and overseas and recognised for their work through awards, including the inaugural Women in Research Citation Award (health informatics) and the prestigious International Medical Informatics Association (IMIA) Working Group of the Year Award (for the third year in a row).

We have developed an international reputation as a research leader in the application of information technology to healthcare.





OUR COLLABORATORS

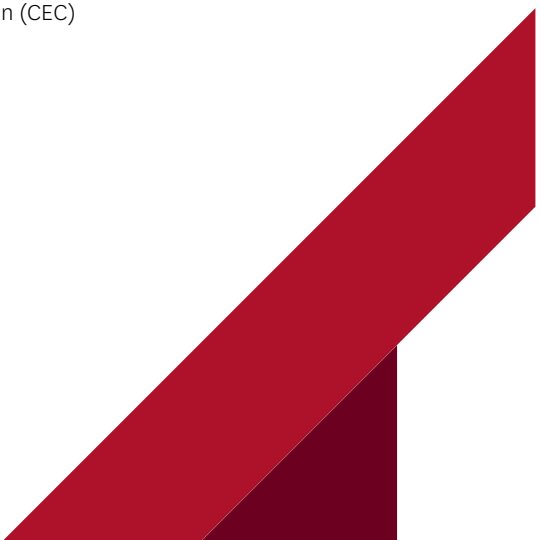
Our valued partners for 2016 included the following:

NATIONAL

- Alcidion Corporation Pty Ltd
- Austin Hospital, Melbourne
- Australian Commission on Safety and Quality in Healthcare (ACSQHC)
- Australian Digital Health Agency
- Australian National Data Service
- Australian Patient Safety Foundation
- Blackdog Institute
- Bond University
- Cochlear Ltd
- Healthdirect Australia
- Macquarie University Hospital (MUH)
- National Collaborative Research Infrastructure Strategy
- Northern NSW Area Health Service
- Northern Sydney Primary Health Network
- Novo Nordisk
- NSW Ministry of Health
- Prince of Wales Hospital, NSW
- Royal Hospital for Women
- Queensland University of Technology
- Sax Institute
- Spokade Pty Ltd
- St Vincent's Hospital, Sydney
- Sydney South Primary Health Network
- Telstra Emerging Systems
- The Clinical Excellence Commission (CEC)
- The George Institute
- The Kirby Institute
- The University of Sydney
- Therapeutic Guidelines Australia
- University of Adelaide
- University of Melbourne
- University of Technology
- UNSW Sydney
- WentWest
- Westmead Hospital
- Westmead Medical Institute

INTERNATIONAL

- Boston Children's Hospital, USA
- Danish Centre for Health Informatics, Aalborg University, Denmark
- Environmental Protection Agency, USA
- Harvard Medical School, USA
- ICF International, USA
- Indraprastha Institute of Information Technology, Delhi, India
- Memorial Hermann Center for Healthcare Quality and Safety, Houston, USA
- National Toxicology Program (NTP), National Institute of Environmental Health Sciences, USA
- Northeastern University, MA, USA
- Nuffield Department of Primary Care, University of Oxford, UK
- Stanford Centre for Biomedical Informatics Research Medicine, USA
- Trip Database, UK
- Université de Lille Nord de France, France
- University College London, UK
- University of Applied Sciences Weihenstephan-Triesdorf, Germany
- University of Illinois, USA
- University of Iowa, USA
- University of Tromsø, Norway



CHI key research streams



DIGITAL HEALTH

Health informatics and digital health enables Australia's health system to benefit from the digital revolution and translate advances into effective working health services. Led by Professor Enrico Coiera, the research conducted enables improved clinical outcomes and efficiencies to ensure our health system is sustainable. New tools are being created to support self-management and new ways of collaboratively engaging with health services to improve how patient outcomes are being investigated. Professor Coiera also leads the NHMRC Centre of Research Excellence in e-health (CRE) which targets major evidence gaps in the safety and quality of clinical and consumer e-health systems.

In 2016 we continued to further our research, developed new industry relationships, participated as an exhibitor at the Health Informatics Conference in Melbourne in July (Australia's premier health informatics conference) and delivered keynote presentations at national and international conferences. Our team also won prestigious national and international awards including the inaugural Women in Research Citation Awards for Health Informatics presented by Clarivate Analytics and the Australian National University and International Medical Informatics Association (IMIA) Working Group of the Year Award for the third year in a row.



Professor Enrico Coiera
E: enrico.coiera@mq.edu.au



PATIENT SAFETY INFORMATICS

The use of information technology (IT) or digital health is revolutionising care delivery. At the same time, digital health can introduce new, often unforeseen risks that can affect the safety and quality of care and may lead to patient harm. The Patient Safety Informatics team, led by Associate Professor Farah Magrabi, is researching the safety risks of current and future digital health technologies. We are developing automated methods for surveillance of IT systems to enable timely detection of emerging threats, and are investigating new models for the safety governance of digital health. Our work is used nationally and internationally by healthcare systems, government departments, patient safety agencies and industry.

In 2016 we helped the Australian Commission on Safety and Quality in Health Care (ACSQHC) review practices for managing the availability of the national "My Health Record" system. Another review of international best practices for investigating patient safety events was used by ACSQHC to inform procedures for the "My Health Record". We also worked with Telstra Health to review safety features of a new medications management system.



Associate Professor Farah Magrabi
E: farah.magrabi@mq.edu.au



HEALTH ANALYTICS

At the Health Analytics Lab, led by Dr Blanca Gallego Luxan, we have brought together a multidisciplinary team of medical practitioners, pharmacologists, data scientists and software developers to design, develop and validate evidence-based, safe and effective methods needed to support a learning health system. The last few years have seen an amazing increase in the digitalisation of healthcare and, in particular, in the implementation and use of electronic health records. This large investment comes with the expectation that electronic health record systems and the data they contain will produce better patient outcomes while reducing costs. Realising this goal requires investment in high-quality information systems, cultural change and the right tools to learn from large repositories of routinely collected data in real time.

Our core strength lies in the combination of deep analytic and computing theory and methods with understanding of clinical decision support systems. We conduct several research and translational activities in collaboration with both national (UNSW Sydney, The University of Melbourne, NSW Ministry of Health) and international (Stanford University and University of Oxford) partners and hospitals.



Dr Blanca Gallego Luxan
E: blanca.gallegoluxan@mq.edu.au



COMPUTABLE EVIDENCE LAB

The Computable Evidence Lab (CEL), led by Dr Guy Tsafnat, researches, develops and tests software tools that help clinicians make effective and evidence-based decisions. The team focusses on developing tools that synthesise evidence from the literature, automating evidence synthesis using computational linguistics and machine learning, and integrating evidence from multiple sources such as the literature, clinical records, genetics and other sources.

In 2016 the team created the first proof-of-concept workflow for evidence synthesis automation. The workflow brings together several evidence-gathering and appraisal tools to create evidence syntheses. The workflow automatically updates these syntheses as new evidence emerges. Also in 2016, CEL led the Macquarie University's efforts to provide its hospital's data to researchers.



Dr Guy Tsafnat
E: guy.tsafnat@m.q.edu.au



EVIDENCE SURVEILLANCE

The Evidence Surveillance team, led by Dr Adam Dunn, develops new ways to measure and mitigate biases in evidence-based medicine, spanning the entire process of evidence-based medicine from the design and undertaking of clinical trials through to the representation of evidence in the public domain. The team have expertise in data mining, epidemiology, network science, and machine learning, and have close ties to leading biomedical informatics and clinical epidemiology groups in Boston and Sydney.

In 2016 the team attracted new funding from the US Agency for Healthcare Research and Quality (AHRQ) and the NHMRC totalling over \$600K, published widely (including in Nature), and presented at national and international symposiums including the Conflicts of Interest in Healthcare Symposium at The University of Sydney, the Charles Perkins Centre in Sydney, the Boston Children's Hospital and the American Medical Informatics Association (AMIA) Annual Symposium in the US. The team's research continues to focus on the impact of financial competing interests on the integrity of clinical evidence; the development of new tools for improving the efficiency of systematic reviews and using social media data to understand how health information in the media influences decision making and shapes health outcomes in the community.



Dr Adam Dunn
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CONSUMER INFORMATICS

Dr Annie Lau leads the Consumer Informatics team which focusses on investigating the impact, design, and science of Information and Communications Technology (ICT) on consumers, patients and their carers. The team have developed Healthy.me, a research platform which allows individuals to connect with health services, peers, information sources, and tools to manage their health together with a mobile app. They are also researching how patients and consumers use social media for health purposes and how "social network interventions" impact health outcomes.

In 2016, we co-designed a mobile app with our clinical collaborators to help patients undertaking rotator cuff recovery with their post-operative rehabilitation program. We also commenced evaluation of the app at Macquarie University Hospital in an outpatient setting.



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Taking a step closer towards clinical data sharing

Macquarie University Hospital (MUH) is Australia's first digital hospital. Opened in 2010, MUH's systems capture patient clinical data in real-time. MUH is wholly owned and operated by Macquarie University, facilitating direct collaboration between the Australian Institute of Health Innovation (AIHI) and the Hospital. The Centre for Health Informatics (CHI) has initiated a research partnership with MUH, supported in part by the Australian National Data Services (ANDS), to facilitate the use of routinely collected electronic patient record data for research and quality assurance purposes.

CHI technologies are being developed to allow multiple data sets to be accessible through a single point for researchers, facilitating access to data and minimising

the effort involved in gaining such access. The technologies also allow for different data analytics applications to connect into the data gateway, allowing for powerful assembly of different analytic 'pipelines'.

The strategic partnership between CHI and MUH is already teaching us important lessons about the technical and governance barriers to clinical data sharing. With time, it is anticipated that this service will be a routinely offered service by Macquarie University to researchers, and that the model and methods developed here will be translatable to other health services in the public and private sectors.

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Healthy.me

Healthy.me is a personal health management system developed by the Centre for Health Informatics (CHI). It is a research platform, available in web-based and mobile app platform (iOS, Android), which allows individuals to connect with health services, peers, information sources, and tools to manage their health. Healthy.me is a personalised, convenient, interactive 24/7 app, relevant to a wide range of health issues and ages and is a distribution hub for tools and technologies.

The Healthy.me platform has also informed e-health service delivery for consumers through commercialisation and provision of collaborative access to research infrastructure. In 2014, the Healthy.me technology spun off into a new start-up venture, *Healthbanc*, which was launched in the US in 2016. The Healthy.me platform is also available for other research groups to design and evaluate consumer e-health systems.

Since 2009, the platform has supported 11 clinical studies and 3,600 consumers across multiple settings, including Liverpool Hospital, St Vincent's Hospital, Macquarie University Hospital, general practice, and a fertility clinic. Clinical studies have delivered significant results in assisting consumers and practitioners working together to manage a wide range of health conditions in the areas of preventative care, chronic disease self-management, cancer survivorship and specialist care. Several studies are still in progress and informing ongoing development of the platform, personal management system and app.

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Centre for Healthcare Resilience and Implementation Science (CHRIS)

WHAT WE DO

The Centre for Healthcare Resilience and Implementation Science (CHRIS) is reconceptualising healthcare systems research to build more resilient healthcare systems. The Centre aims to help stressed modern healthcare systems cope with concurrent challenges posed by the growing and increasingly complex care demands of ageing populations, rapid technological and organisational change and stretched healthcare budgets.

The Centre pursues highly collaborative, multidisciplinary research into how our complex healthcare systems really work, and is pioneering new approaches to ensure research findings are translated into better and more cost-effective care. By scrutinising the myriad, dynamic interactions between interconnected webs of clinical professionals, their patients and new healthcare technologies, communication systems and equipment, the Centre is committed to enhancing the understanding of the big picture of healthcare delivery.

In particular, CHRIS is leading new organisational research into the multitude of factors that combine to produce system-wide resilience. Such resilience can be harnessed to ensure healthcare organisations are more resistant to costly contemporary challenges, such as medical errors and other iatrogenic harm, and are able to reduce waste, improve patient outcomes and save money into the future. The Centre is also scrutinising the processes of change to help ensure that many more research findings are translated in real-world gains for patients, policymakers, healthcare providers and funding agencies.





OUR COLLABORATORS

Our valued partners for 2016 include the following:

NATIONAL

ACT Government Health Directorate Aged Care Standards and Accreditation Agency Ltd
 Australian Centre for Agricultural Health and Safety (ACAHS)
 Australian College of Health Service Management (ACHSM)
 Australian Commission on Safety and Quality in Health Care (ACSQHC)
 Australian Council on Healthcare Standards (ACHS)
 Australian Defence Force (ADF)
 Australian General Practice Accreditation Ltd (AGPAL)
 Australian Health Insurance Association (AHIA)
 Australian Healthcare and Hospitals Association (AHHA)
 Australian Hearing Hub (AHH)
 Australian Patient Safety Foundation (APSF)
 Australian Research Council (ARC)
 Bupa Health Foundation
 Cancer Institute NSW (CINSW)
 Children's Health Queensland
 Commonwealth Department of Health
 Department of Health and Human Services Victoria
 Liverpool Hospital, NSW
 Menzies Health Institute Queensland, Griffith University
 Motor Neurone Disease Research Institute of Australia
 National Acoustics Laboratories (NAL)
 National Health and Medical Research Council (NHMRC)
 National Health Performance Authority (NHPA)
 Neuroscience Research Australia
 Northern Sydney Medicare Local
 NSW Kids and Families, NSW Ministry of Health

NSW Ministry of Health
 North Western Mental Health and School of Nursing, Midwifery and Paramedicine Australian Catholic University
 Population Health and Health Services Research, NSW Ministry of Health
 Prince of Wales Hospital, NSW
 Royal Australasian College of Medical Administrators (RACMA)
 Royal College of Pathologists of Australia Quality Assurance Programs
 Queensland Health
 School of Nursing, The University of Sydney
 School of Psychiatry, UNSW Sydney
 School of Public Health and Community Medicine, UNSW Sydney
 South Australian Department of Health and Ageing
 St Vincent's Hospital, Sydney
 Sydney Children's Hospital Network
 The Australian Health Care Reform Alliance
 The Clinical Excellence Commission (CEC)
 The Sax Institute, NSW
 The University of Sydney
 Townsville Hospital and Health Service
 University of Melbourne
 University of Queensland
 University of South Australia, Centre for Population Health Research
 University of Technology, Sydney
 UNSW Sydney
 Westmead Hospital

INTERNATIONAL

Aalborg University, Denmark
 Canon Institute for Global Studies, Japan
 Cardiff University, Division of Population Medicine, UK
 Harvard Medical School, USA
 Harvard Injury Control Research Center, Harvard School of Public Health, Harvard University, USA
 Health Services Management Centre, University of Birmingham, UK

Imperial College, London, UK
 International Society for Quality in Health Care, ISQua, Dublin, Ireland
 Kings College, London, UK
 Medical Management Centre, Karolinska Institutet, Sweden
 National Health Service, UK (Various NHS agencies)
 Shanghai Municipal Health Bureau, People's Republic of China
 Society for the Study of Organising in Health Care, UK
 Swansea University, Wales, UK
 The London School of Hygiene and Tropical Medicine, UK
 Universitat Autònoma de Barcelona, Spain
 University College London, UK
 University of Edinburgh, UK
 University of Leeds, UK
 University of Manchester, UK
 University of Southampton, UK
 University of Southern Denmark, Institute of Regional Health Research, Denmark
 University of Florida, Health Science Center, Jacksonville, USA
 University of Tromsø, Norway
 World Health Organization, Kobe Centre, Japan
 World Health Organization, Patient Safety, Geneva, Switzerland



CHRIS key research streams



APPROPRIATENESS OF HEALTHCARE DELIVERY

The landmark CareTrack Australia study revealed, in 2012, Australians receive “appropriate” healthcare in only 57 percent of consultations. A follow-up study to CareTrack Australia, “CareTrack Kids” will, for the first time, determine the percentage of healthcare encounters at which Australian children receive evidence- and consensus-based care for 16 paediatric conditions and examine the frequency and types of adverse events involving Australian children.

We aim to deliver a range of important outcomes in this highly significant and overdue research. Led by Peter Hibbert, this research stream is building on CareTrack Australia’s findings to pilot new approaches to clinical standards and to explore digital platforms for their delivery. This stream aims to provide a new evidence base to reduce healthcare costs and improve care by helping clinicians deliver the right care at the right time to the right patients.



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IMPLEMENTATION SCIENCE

Much is made of the patient experience, but what does it mean to be the recipient of a long-term care plan and what do we know of patients’ experiences of consultations where important, often life-changing conversations take place? How do patients respond to an unexpected diagnosis or a prognosis of long-term ill health, and how would patients wish to be better supported during clinical interactions? Associate Professor Rapport’s work, driving the Implementation Science stream, employs qualitative and multi-method approaches to address health services research questions through trials and exploratory and complex study designs. The research aims to clarify the social, emotional, and physical determinants of ill-health.

Current studies are being undertaken in the negotiation of risk in cancer and the impact of chronic conditions such as epilepsy on patients’ quality of life.

The Implementation Science stream aims to include patients, carers and clinicians in decision-making and negotiated care, and to combine data sources such as interviews, focus groups and large-scale surveys, to ensure rich data translates into practice. The stream is developing a range of projects for collaborations across Macquarie University and is currently funded to ensure complex epilepsy is managed appropriately across NSW healthcare settings. The new study concentrates on bridging the gap that currently exists between initial identification of people with complex epilepsy, and their assessment and treatment with surgical intervention. The study will lead to a larger-scale, pan-Australian intervention to ensure the burden of treatment and care is reduced for those suffering from this condition.



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HUMAN FACTORS AND RESILIENCE

While the rate of medical error remains stubbornly high at around 10 percent in modern hospital systems, there are considerable untapped opportunities to improve care by turning our attention to what healthcare systems do well.

Instead of focussing on why systems sometimes fail, resilience science engineering seeks to understand how dynamic and highly complex organisations and systems, like healthcare, usually get things right.

Successful approaches to improving care also consider human factors, or how healthcare professionals interact with their work environment. The Human Factors and Resilience stream is pioneering a new approach to understanding the many factors that underpin the delivery of high-quality care despite the challenges of large, complex interacting networks of various health professionals, stretched budgets and rapid technological change. This research is bridging the gap between theoretical evidenced-based approaches and practical delivery of safe patient care.



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BEHAVIOUR CHANGE

Improving the delivery of safe, evidence-based care requires healthcare professionals to change their behaviour. While behaviour change is complex, it is entirely possible. The application of behaviour change methods to design interventions can transform healthcare organisations and improve patient outcomes. Co-design with key stakeholders can enhance intervention generalisability across different contexts, and ease the translation of effective approaches from research into practice. One current example of this is the use of behaviour change and implementation science methods to improve the detection and management of colorectal cancer patients with a high risk of carrying hereditary cancer genes. Other work includes scaling up (from completed pilot projects) the implementation of whole genome testing for selected patients, examining practice change training opportunities for employees of NSW Ministry of Health, and assessing the impacts of projects they initiate.



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HEALTH OUTCOMES

Improving estimates of the burden of injury and disease are integral for priority-setting and to evaluate the impact of preventive strategies. Associate Professor Mitchell is leading the largest population-based case-comparison study of injury in Australia to quantify hospitalised morbidity and mortality attributable to traumatic injury. This study has already identified that injured individuals have a higher mortality and increased rates of health service use for at least 4-months after their injury hospitalisation, indicating that trauma services should consider long-term follow up and support services for seriously injured patients post-hospital discharge. Associate Professor Mitchell and colleagues will continue to examine health outcomes following injury and disease with the aim of informing the development of targeted prevention initiatives and improving health services.



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Child injury and chronic health conditions

Injured young people with chronic disease are experiencing longer recovery periods and higher rates of hospital readmission and death. Injury is one of the most common reasons for hospitalisation in young persons aged 25 years or less in Australia. There is a growing number of young people with chronic diseases, such as diabetes, yet little is known about the impact of chronic disease on young people who have been traumatically injured. This study compared the health outcomes of injured young people with and without chronic disease. The health outcomes examined were hospital length of stay, 28-day unplanned hospital readmission, hospital costs, and mortality at 30-days and at 12-months following the injury hospitalisation.

Of the 184,819 injury hospitalisations of young people in New South Wales (NSW) during a 4.5 year period; 13.8% had a chronic disease. Compared to young people without a chronic disease, those with one had double the average hospital cost, and a higher rate of unplanned hospital readmission and mortality. Injured young people were 4 times more likely to have a prolonged hospital length of stay if they had a chronic disease.

Use of a 1:1 matched design allowed direct comparison of the average hospital length of stay and hospital costs for injured young

people who were the same age and gender, and who had the same nature of injury and injury severity by their chronic disease status. Renal conditions, hypertension and anaemia showed the highest excess average hospital length of stay and anaemia, hypertension, coagulation defects and renal conditions showed the highest excess average cost for matched injured individuals with and without chronic disease.

This research has shown that health outcomes following injury are worse for young people who have a chronic disease. The increasing number of young people with a chronic disease has direct implications for hospital treatment, resource use, provision of support services, and survival following traumatic injury.

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Resilience in acute healthcare

This is the story of how an Australian ICU in a large tertiary care hospital managed conflict between the ICU and surgery departments using principles of resilient thinking. Frequent cancelling of elective surgery at short notice, due to lack of ICU beds, resulted in distrust between surgery and the ICU. Resilient thinking was used to develop and implement a process to establish rules for making ICU decisions about post-surgery beds, and to repair relationships between the two departments.

In 2016, one year into the new workplace processes, we interviewed 19 clinicians from the ICU, surgery, and Emergency departments, and hospital management about their ongoing experiences with bedding-in and sustaining the new practices. We also collected data on hospital demand for ICU, and on ICU performance, over the previous 12 months.

Within the ICU and management, perceptions of the utility of the ICU escalation plan varied from neutral to very positive. In general, those who felt more positive about the plan were more involved with patient flow management rather than on the floor medical delivery. Those who found the ICU escalation plan useful identified a variety of mechanisms for this utility including: making it easier to say 'no' when the ICU was at capacity, providing clear reference

points for the concept of 'full' which were universal and not linked to bed numbers, facilitating communication with 'higher ups' about patient load and the need to transfer patients, and as a basis for more constructive conversations. Some also discussed its ability, within the ICU, to provide agreement on current status and give more structure to decision making processes. Those who found the ICU escalation plan of limited use tended to cite bed block as a major concern. Some pointed out that the plan, and the communication of the ICU status, could have little effect on patient flow at the hospital level and the demands and pressures on the ICU if those external to the ICU did nothing to address patient flow issues.

Benefits of the intervention, reflected in the audit data in terms of reduced surgery cancellations due to unavailability of ICU beds, despite daily activity level, daily bed occupancy, and monthly average length of stay (LoS) remaining unchanged. By establishing rules for decision-making around ICU bed allocation, the intervention improved internal professional relationships within the ICU and between the ICU and external departments.

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Centre for Health Systems and Safety Research (CHSSR)

WHAT WE DO

The Centre for Health Systems and Safety Research (CHSSR) is at the forefront of research into the impact of new information and communications technology (ICT) on the safety, effectiveness and cost-efficiency of healthcare delivery. Fast, accurate information exchange is at the heart of healthcare systems that deliver optimum patient outcomes, even in the face of growing budgetary pressures and the many challenges of co-morbidities in ageing populations. In healthcare systems, rapid advances in ICT and biomedical technology are transforming the way clinicians and support staff work, as older information management systems and procedures are replaced by newer ICT-enabled models of healthcare delivery. Telemedicine applications, for example, allow care to be delivered in the community outside large hospitals, while sophisticated information systems now support the decisions clinicians make at a patient's bedside.

Information technology represents a potentially powerful tool for driving systems-wide improvements. Consequently, healthcare systems across the globe are making multi-billion dollar investments based on this promise. Yet until recently little attention has been paid to whether new ICT-enabled processes and systems are performing as expected or if they may also pose unanticipated risks.

CHSSR's internationally-recognised research is filling this gap. Our health informatics evaluation research team—Australia's largest—designs rigorous, innovative ways to assess whether health informatics interventions are effective, efficient and, above all, safe. The Centre aims to make a significant contribution, nationally and worldwide, to health informatics, health information management, evaluation methodologies and safety and quality in healthcare.

By forging innovative partnerships with our national and international peers from many disciplines—and with information industry leaders and health practitioners, administrators and policymakers—we can ensure our work can be readily translated to inform ICT systems design and decision-making for better, more cost-effective healthcare.

Information technology represents a potentially powerful tool for driving systems-wide improvements.

OUR COLLABORATORS

Our valued partners for 2016 included the following:

NATIONAL

Austin Hospital, Victoria
Australian Association of Clinical Biochemists
Australian Catholic University
Australian Commission on Safety and Quality in Health Care (ACSQHC)
Australian Digital Health Agency
Australian Patient Safety Foundation
Australian Research Council (ARC)
Campbelltown Hospital, NSW
Cancer Institute NSW (CINSW)
Concord Repatriation General Hospital, NSW
Commonwealth Department of Health
eHealth NSW
Episoft
Flinders University
Fujitsu Australia
Health Consumers NSW
Healthdirect Australia
La Trobe University, Victoria
Liverpool Hospital, NSW
Mater Health Services, Qld Mater Hospital, Qld
National E-Health Transition Authority (NEHTA)
National Health Foundation
National Prescribing Service
NSW Health Pathology
NSW Health Pathology North
NSW Health Pathology West
NSW Ministry of Health
NSW Office of Kids and Families, NSW
Ministry of Health
Prince of Wales Hospital, NSW
Royal Adelaide Hospital, SA
Royal Australian and New Zealand College of Radiologists
Royal College of Pathologists of Australasia
Quality Assurance Programs
Royal North Shore Hospital, NSW
Royal Prince Alfred Hospital, NSW

South Eastern Area Laboratory Services, NSW (SEALS)
St Vincent's Hospital, Sydney
Sydney Children's Hospitals Network
Sydney South West Pathology Services
The Clinical Excellence Commission (CEC)
The University of Sydney
Uniting, NSW & ACT
University of Adelaide
University of Melbourne
University of Newcastle
University of Southern Queensland
University of Tasmania
University of Technology Sydney
University of Western Sydney
UNSW Sydney
Western Sydney Local Health District

INTERNATIONAL

Albert Einstein Colleague of Medicine, USA
American Medical Association, USA
Canterbury District Health Board, New Zealand
Coastal Carolina University, USA
Dartmouth-Hitchcock Medical Centre, USA
Harvard Medical School, USA
Indiana University, USA
Kuopio University, Finland
London School of Economics, London UK
Montefiore Medical Center, USA
Patient Safety Research Laboratory, Italy
Portsmouth University, UK
Swiss Patient Safety Foundation, Switzerland
Sysmex New Zealand Ltd, New Zealand
The University of Edinburgh, UK
University of Alberta, Canada
University of Birmingham, UK
University of Leeds, UK
University of Lille, France
Vanderbilt University, USA
Veteran Affairs Hospital, Houston, Texas, USA
Western Cape Government, South Africa
Worcestershire Acute Hospitals NHS Trust, UK





CHSSR key research streams



DIAGNOSTIC INFORMATICS

Diagnostic services involving pathology and medical imaging perform a major role in the delivery of patient care by ensuring reliable and accurate results are delivered in a timely fashion to inform clinical management decisions. Over the last three decades, there has been considerable growth in the number of requests for pathology and medical imaging services. Our research is investigating the use and impact of electronic pathology and imaging systems to improve the appropriate and efficient use of pathology and imaging services in hospitals. Topics of investigation include the impact of IT systems on improved laboratory test turnaround times, length of stay and the follow-up and management of test results to inform decision-making.



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ELECTRONIC DECISION SUPPORT AND HUMAN FACTORS IN HEALTHCARE

Human factors studies the design of systems with the aim of improving interactions between people and their environments. Our research examines how well, or otherwise, ICT systems fit in with the work of doctors—specifically, computerised decision support for prescribers, including pre-populated orders, online resources, and electronic alerts. Observing systems in operation, we found nearly half the prescriptions triggered an alert, but most of these were dismissed—a reaction which undermines the system's effectiveness. Current work, which incorporates organisational analysis, focusses on designing effective decision support. This research stream, led by Dr Baysari, is working towards designing resilient systems that can adapt and function effectively in the event of a disturbance.



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MEDICATION SAFETY

Medication error and inappropriate medication therapy are two of the oldest, most-costly, and least tractable safety problems which health systems face. Information technology has the potential to make medication management safer and more effective. With that expectation, health systems worldwide are making vast investments in information technology. Our research is investigating the ways in which information technology can reduce medication errors and support improved medication therapy decisions and outcomes. This includes research on the design and use of electronic decision support systems. In 2016 this work included our NHMRC funded stepped wedge randomised controlled trial to investigate the impact of electronic medication systems on error in paediatric hospitals.



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SAFETY AND INTEGRATION OF AGED AND COMMUNITY CARE

The cost of aged care services across Australia in 2014-15 was approximately \$16 billion. These costs are expected to grow by nearly 5% each year over the next decade. Community care and health systems are seeking effective ways to plan and manage the health and support services required to enable citizens to actively engage in society and maintain a high quality of life. Information and communication technologies (ICT) can help meet these challenges by offering direct assistance (e.g. telehealth) which promote individuals’ engagement and social connection and, through large-scale electronic record systems, that enhance the integration and coordination of care across health and social care sectors. Our research is investigating these issues including the use of community support services by older people, the quality of care provided within residential aged care facilities and the role of ICT or as an enabler of effective care.



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COGNITIVE INFORMATICS AND WORK INNOVATION

Understanding the way clinical care is delivered and decisions are made, within the context of human cognition, is central to supporting the design of interventions which are able to support effective, efficient and safe care to patients.

Applying novel measurement techniques, the Centre has undertaken internationally leading research investigating clinical work flows and decision making. Our research investigates patterns of clinicians’ work, and how ICT influences workflow and workloads. We apply a broad range of methods including direct observational methods, social network analysis and qualitative techniques. ICT provide an opportunity to reshape the composition of teams who deliver care, and the processes of care delivery. ICT may both enhance and disrupt patterns of work. The Work Observation Method by Activity Timing (WOMBAT) developed by the CHSSR, is now used by over 30 research teams around the world. This program of research draws on the broad discipline areas of cognitive psychology, process engineering, communication, health informatics and operations research.



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PRIMARY CARE SAFETY AND DIGITAL HEALTH

The field of patient safety in primary care is an emerging research area which encompasses a broad range of settings and themes. There is limited scientific evidence of the risks to patient safety in primary care settings. Digital health is integral to many daily processes in the delivery of safe primary healthcare in Australia and other countries with a similarly developed healthcare system. It is a major component in the interface of primary care with secondary and tertiary healthcare settings.

We are conducting projects that are defining the nature of threats to patient safety in primary care, and examining interventions that reduce these threats. We are investigating the use of digital health in primary care settings, including electronic clinical information systems, “My Health Record”, secure messaging and electronic medication management and decision support systems.



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Ageing well: Improving social engagement in older adults

Older adults often feel fulfilled when they participate socially in their community. This in turn provides additional resources into the community through, for example, support to families and friends, and additional expertise and experience through volunteering. Increased social engagement by older adults is strongly associated with increased quality of life and improved health.

However, as adults age they are more likely to suffer from social isolation and loneliness when unable to participate like they once did in the community. Community aged care providers aim to deliver services which support older adults to remain active and healthy thus enabling them to engage in the activities they desire. However, in assessing clients' need for services the focus is often on physical rather than psychological well-being.

Professor Andrew Georgiou from the Centre for Health Systems and Safety Research (CHSSR), whose work focuses on how information and communication technologies (ICT) can be used to promote individuals' engagement and social connection, aims to integrate and coordinate seamless care across healthcare sectors. He co-leads a team of researchers, with Professor Johanna Westbrook, identifying how social engagement tools can be adopted into routine practice of community aged care providers, and explores ways to improve their feasibility and acceptability.

"Information from the social engagement assessment tools will be used to identify ways that community aged care services can be provided to build long-lasting social networks and connections and thus add purpose, meaning and value to the lives of care recipients," explains Professor Georgiou.

"...an exciting new area of research. There is a definite lack of focus on how we can integrate technology to improve social engagement and consumer outcomes," says Dr Joyce Siette, a member of the research team. "Our work so far has examined the levels of social engagement and quality of life of over 300 consumers in Sydney. We've received very positive feedback from the Community Care Support Advisors who use the social engagement assessment tool, indicating that they find it easy to use, and it is providing important information about what these consumers want that they would otherwise not have known."

Current analysis is exploring the relationships between social engagement and client outcomes such as quality of life, and health outcomes, such as hospitalisations and time to admission to residential care.

"This is a great opportunity to harness the power of big data to monitor service use and outcomes, and to understand the profiles of older adults who are more, or less, socially engaged," says Dr Mikaela Jorgensen a member of the research team.

From this work, an evidence base can be created to inform the community aged care sector about the specific factors which affect social engagement and quality care indicators, and allow for future tailoring of quality improvement initiatives and interventions.

This research is funded by an ARC Linkage Grant with Uniting Care.

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Delivering safe and effective care for children in hospital with e-health systems

Prescribing, administering and monitoring medicines in children is highly complex. Electronic medication management (eMM) systems have the potential to reduce medication errors and adverse drug events (ADEs) due to improved legibility and completeness of medication orders and via the decision support these systems include (e.g. drug-drug interaction alerts). However, rigorous evidence demonstrating these effects is limited. This five-year NHMRC partnership project presents an innovative and comprehensive program of research to assess the effectiveness of an eMM system in preventing medication errors and reducing ADEs in two major paediatric teaching hospitals in Sydney. It also aims to assess cost-effectiveness and the effects of the eMM system on clinicians' work.

In December 2016 at a symposium, hosted by the Centre for Health Systems and Safety Research and opened by NSW Minister for Health, the Honorable Jillian Skinner, participants heard reports on the first year of the project. In the first stage of the project, trained nurse researchers observed over 5,000 medications being prepared and administered to children (both before and after implementation of the eMM system) and recorded all medication information into a specially designed electronic data collection tool. This observational data will be compared against patients' medication charts to identify any errors which may have occurred. Analysis of the data will allow us to assess the impact of the eMM system on medication administration errors.

The early results present new, comprehensive information about medication administration processes in paediatrics. For example, analgesics (pain relief) were the most frequently administered medications; nurses were interrupted more frequently when administering medications during the week than on weekends, and nurses in

this setting correctly checked patient identification prior to administering medication more frequently than nurses have been previously reported to do in published studies of adult hospitals.

We completed over 100 interviews with doctors, nurses and pharmacists to explore their views of the new eMM system and how it has changed their work. Although the transition from paper to eMM systems entailed several challenges, such as changes to workflow, all users could see long-term and sustainable benefits in using the electronic system.

A large survey of over 200 patients and carers was conducted to assess the costs associated with hospitalisation of children, such as having to take time off work, arrange child minding of siblings etc. This survey is part of the cost-effectiveness study which is underway.

Overall, this study is generating the first Australian data on the effectiveness of eMM systems to reduce administration errors, prescribing errors and ADEs in paediatric settings, as well as data on how eMM systems affect clinicians' work. These results will be particularly valuable for other paediatric hospitals, both nationally and internationally, as they embark on their eMM system implementation journey. The results will also provide valuable information regarding areas to target to improve medication administration processes and systems to reduce the risk of errors and their associated harm and costs.

This research is funded by an NHMRC Partnership Project Grant with the Sydney Children's Hospitals Network, eHealth NSW and the Office of Kids and Families, NSW Ministry of Health.

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Meet some of our Researchers



Dr Adam Dunn

ACADEMIC BACKGROUND

Dr Adam Dunn completed a PhD in computer science at The University of Western Australia 10 years ago, and has a background in data mining, computational modelling, mathematics, and complex systems science.

CURRENT WORK

As part of an interdisciplinary team of researchers in the Centre for Health Informatics (CHI), Dr Dunn studies the translation of clinical evidence into practice, covering everything from the design and reporting of clinical studies through to the ways in which evidence is represented in public discourse.

The team is internationally recognised for their work measuring biases associated with competing financial interests, and has recently established a new stream of research using social media data to understand vaccine hesitancy.

THREE KEY PUBLICATIONS IN 2016

1. **Dunn AG**, Coiera E, Mandl KD, Bourgeois FT (2016). *Conflict of interest disclosure in biomedical research: A review of current practices, biases, and the role of public registries in improving transparency*. Research Integrity and Peer Review, 1:1.
2. Surian D, Nguyen DQ, Kennedy G, Johnson M, Coiera E, **Dunn AG** (2016). *Characterizing Twitter discussions about HPV vaccines using topic modelling and community detection*. Journal of Medical Internet Research, 18(8):e232.
3. **Dunn AG** (2016). *Set up a public registry of competing interests*. Nature, 533:9

GRANTS SUCCESS IN 2016

Grants awarded to Dr Dunn's team in 2016 include one from the US Agency for Healthcare Research and Quality (AHRQ) to develop machine learning methods that can take advantage of clinical trial registry data to improve the way we prioritise and update systematic reviews (with Boston Children's Hospital); and an NHMRC Project to measure online exposure to evidence and misinformation to predict vaccine decision-making and help public health organisations better communicate with people (with The University of Sydney).

VISION STATEMENT

With the inevitable and necessary shift in focus towards preventive medicine, AIHI is well-positioned to help keep Australians healthy and out of hospitals through changes in practice and policy. As health informaticians, Dr Dunn's team aims to improve practice and policy by developing tools that help ensure evidence that makes its way into the community is up-to-date, trustworthy and free of misinformation.

To do this, his team undertakes data-driven research to identify the gaps and bottlenecks in evidence production and translation, and then builds the tools to facilitate healthcare providers and community access to and evaluation of the evidence to make the best decisions about their health.



Associate Professor Rebecca Mitchell

ACADEMIC BACKGROUND

Associate Professor Rebecca Mitchell completed a Bachelor of Arts majoring in psychology from Macquarie University. She went on to complete a Master of Arts, also in psychology, and a Master of Occupational Health and Safety, both at The University of Sydney. Rebecca completed her PhD in injury surveillance systems at the UNSW Sydney.

CURRENT WORK

Associate Professor Mitchell is a psychologist and injury epidemiologist and leads the Health Outcomes stream at CHRIS. Her research focuses on examining health outcomes, particularly following injury, and the delivery of health services. She has a strong history of conducting research that has been used to inform public health policy, health service and injury prevention practice.

Associate Professor Mitchell has established a research program examining health outcomes across the lifespan, often using record linkage and mixed-method techniques. She is leading five NSW-based and two national studies examining health outcomes in Australia. One of the national studies is examining survival following paediatric injury and the second is using a matched-cohort design to examine health service use among injured adults during a three-year period compared to the health service use of a matched comparison population randomly drawn from the Australian electoral roll.

THREE KEY PUBLICATIONS IN 2016

1. **Mitchell, R.** Cameron C. McClure R. (2016). *Quantify the morbidity and*

mortality attributable to traumatic injury using a population-based matched cohort in Australia. BMJ Open, 6 e013266.

2. **Mitchell R.** Harvey L. Brodaty H. Draper B. Close J. (2016) *Hip fracture and the influence of dementia on health outcomes and access to rehabilitation.* Disability and Rehabilitation 38 (23) 2286-2295.

3. **Mitchell R.** Williamson A. Molesworth B. (2016) *Application of a human factors classification framework for patient safety to identify precursor and contributing factors to adverse clinical incidents in hospital.* Applied Ergonomics, 52, 185-195.

GRANTS SUCCESS IN 2016

In 2016, Associate Professor Mitchell was awarded a three-year Career Fellowship from the NSW Ministry of Health to support her mixed-methods research examining transitions between hospital and aged care services and health outcomes among older people. She was also part of a team, being led by The University of Sydney, who were awarded a HCF Research Foundation grant to examine an evidence-based approach to improving outcomes and reducing hospital-acquired complications in patients with rib fractures.

VISION STATEMENT

The research that is conducted at AIHI, with assistance from our collaborators and health system partners, is often invaluable in driving change in health policy and practice. AIHI's research is integral to shaping future health system resource planning and service delivery.



Dr Melissa Baysari

ACADEMIC BACKGROUND

Dr Melissa Baysari completed her Bachelor of Psychology and PhD (Psychology) at The University of Sydney.

CURRENT WORK

Human factors is a discipline that applies evidence-based methods and knowledge about people to design, evaluate and improve the interaction between people, systems and organisations. Dr Baysari leads the Human factors evaluation and design stream at CHSSR. Her research focuses on computerised decision support, in particular, on computerised alerts for prescribers. She uses both quantitative and qualitative methodologies to investigate doctor decision-making processes, to determine the impact of decision support in medicine selection, and to identify areas where redesign of technology is necessary. Her research to date has delivered new knowledge to ensure that decision support is both effective in improving safety and is compatible with the needs, preferences and established workflow of users.

Examples of current projects include

- 1) evaluating and improving computerised alerts embedded in hospital electronic medication management systems—how best to design alerts so they are effective in changing prescriber behaviour and preventing potential patient harm;
- 2) designing computerised decision support to reduce polypharmacy—how can we use electronic tools to encourage de-prescribing; and
- 3) evaluating and improving dosing decision support for antimicrobials.

THREE KEY PUBLICATIONS IN 2016

1. **Baysari MT**, Jackson N, Ramasamy S, Santiago P, Xiong J, Westbrook J, Omari A, Day RO. *Exploring sub-optimal use of an electronic risk assessment tool for venous thromboembolism*. Applied Ergonomics. 2016; 55:63-69.
2. **Baysari MT**, Lehnbohm EC, Li L, Hargreaves A, Day RO, Westbrook JI. *The effectiveness of information technology to improve antimicrobial prescribing in hospitals: A systematic review and meta-analysis*. International Journal of Medical Informatics. 2016; 92:15-34.
3. Richardson LC, Lehnbohm EC, **Baysari MT**, Walter SR, Day RO, Westbrook JI. *A time and motion study of junior doctors' work patterns on the weekend: a potential contributor to the weekend effect?* Internal Medicine Journal. 2016; 46(7): 819-25

GRANTS SUCCESS IN 2016

NSW Ministry of Health Translational Research Grant (\$928,000) for 'Reducing inappropriate polypharmacy for older inpatients'.

VISION STATEMENT

Researchers at AIHI undertake highly applied research that is relevant to research communities, governments, policymakers, health organisations, managers, clinicians and the community. Particularly relevant to Melissa's research, AIHI has strong relationships with IT vendors and this has resulted in research findings being translated into modifications to IT systems that have resulted in improved usability and effectiveness. We have safer and more effective clinical information systems as a result of AIHI's research.



Dr Mary Dahm

ACADEMIC BACKGROUND

Dr Mary Dahm completed her Master of Arts (2008) at the University of Konstanz (Germany) studying Linguistics, Literature and Arts. Her PhD in Linguistics (Macquarie University, 2012) focused on health communication and explored how medical terminology is perceived by doctors and patients from diverse language backgrounds, and how the use of terminology can impact on patient-centred care.

CURRENT WORK

Dr Dahm’s academic background and her position as a Postdoctoral Research Fellow within CHSSR provide her with an excellent opportunity to combine her passion for applied patient-centred health research with her expertise in qualitative and mixed-methods research to focus on patient-centred healthcare delivery, health communication, and improving consumer engagement in health services research. At AIHI, she is currently working on two major projects.

Dr Dahm is part of the NHMRC Partnership Pathology team investigating test result management and follow-up. She leads the qualitative arm of the project and is currently undertaking interviews and observations with clinicians and managers in hospital Emergency Departments (ED), ICU, Pathology and Medical Imaging Departments and providing feedback to stakeholders following analysis. She is also developing the consumer engagement strategies within the project which include interviews with frontline ED patients, and the

establishment of a consumer reference group to participate in all stages of the project.

Dr Dahm is currently working on a review of the health information infrastructure for people with intellectual and/or developmental disabilities living in supported accommodation in Australia. For this, she developed an evidence-based model of the current health information infrastructure to illustrate how health data and information are collected, stored, communicated and used. She is applying this model to case studies published in the NSW Ombudsman ‘Report of Reviewable Deaths for People with Disabilities’ to highlight implications for quality and safety of care in this setting.

THREE KEY PUBLICATIONS IN 2016

1. **Dahm, M. R.,** & Berger, I. (2016). Breaking informed consent: *Strategies for risk communication in surgical practice*. In S. J. White & J. Cartmill (Eds.), *Communication in Surgical Practice* (pp. 94-123): Equinox
2. **Dahm, M. R.,** & Cartmill, J. A. (2016). *Talking their way to success: communicative competence for international medical graduates in transition*. *Medical Education*, 50(10), 992-993.
3. Georgiou, A., Li, L., McCaughey, E., **Dahm, M. R.,** Mumford, V., Robinson, K., & Westbrook, J. I. (2016, unpublished research report). *Evaluation of NSW Health Pathology Point of Care Testing: A study of selected sites in Far West, Murrumbidgee and Western NSW*.

GRANTS SUCCESS IN 2016

Dr Dahm initiated a collaboration between the Sydney Children’s Hospitals Network, Health Consumers NSW and AIHI which led to an Expression of Interest (EOI) for a NSW Ministry of Health Translational Grant currently under consideration.

VISION STATEMENT

Dr Dahm shares AIHI’s strong commitment to the translation of research findings into professional practice and continuous innovation in research. She sees the strengths of the Institute in providing multidisciplinary, evidence based research to support improvements within the Australian health system to keep people healthy and deliver truly integrated care. This includes studying the impact of health informatics in a variety of contexts to develop appropriate, evidence based models of care, such as the work she is currently conducting in the field of disability.

The pursuit of emerging ideas for better healthcare is a conduit for AIHI’s influence on policy and practice. Innovative projects such as the NHMRC funded partnership project on test result management with *SEALS Pathology* and *The Australian Commission on Safety and Quality in Health Care* aims to establish safe, effective and sustainable test result management systems utilising evidence-based practice, health IT and consumer engagement. Outputs and outcomes from this project will make a significant contribution to enhanced patient safety in Australia and internationally.



Dr Mirela Prgomet

ACADEMIC BACKGROUND

Dr Mirela Prgomet completed her undergraduate degree, a Bachelor of Applied Science (Health Information Management) (Honours), at The University of Sydney. She completed her doctoral degree, which investigated how mobile devices support clinical work on hospital wards, at UNSW Sydney.

CURRENT WORK

Dr Prgomet's primary area of research focuses on evaluating the impact of health information technologies on clinical work practices and patient care. Her key project is managing the Work Observation Method by Activity Timing (WOMBAT) tool, which is a time and motion software application developed by the Centre for Health Systems and Safety Research (CHSSR) to allow researchers to undertake direct observational studies of health professionals work. WOMBAT can be used to record multi-dimensional aspects of work and communication patterns, as well as capturing interruptions to work and instances of multi-tasking: all of which are automatically timed. Using WOMBAT to record observational data before and after the implementation of health information technology, allows quality data to be gathered and used to assess how technologies enhance or disrupt existing patterns of clinical work and communication. Currently, WOMBAT is being used by nine research teams internationally for a range of studies and part of Dr Prgomet's work involves exploring new ways and settings in which WOMBAT can be used.

Some of the other projects Dr Prgomet is involved in include: using WOMBAT

to examine the impact of the implementation of an electronic medications management system on hospital pharmacists' work practices; using WOMBAT to investigate the work practices of case managers in community aged care; and investigating the effectiveness of an electronic medication management system to reduce medication errors, adverse events, and average length of stay in a paediatric setting.

THREE KEY PUBLICATIONS IN 2016

1. Sinskey C, Colligan L, **Prgomet M**, Li L, Reynolds S, Blike G, Westbrook J, Tutty M (2016) *Allocation of physician time in ambulatory care: a time and motion study in 4 specialties. Annals of Internal Medicine.* 166(11): 753–760. (Ranked #65 in Altmetric's top 100 articles for 2016)
2. **Prgomet M**, Li L, Niazkhani Z, Georgiou A, Westbrook J (2016) *Impact of commercial computerized provider order entry (CPOE) and clinical decision support systems (CDSS) on medication errors, length of stay, and mortality in intensive care units: a systematic review and meta-analysis. Journal of the American Medical Informatics Association.* ocw145.
3. **Prgomet M**, Cardona-Morrell M, Nicholson M, Lake R, Long J, Westbrook J, Braithwaite J, Hillman K (2016) *Vital signs monitoring on general wards: clinical staff perceptions of current practices and the planned introducing of continuous monitoring technology. International Journal for Quality in Health Care.* 28(4): 515–521.

VISION STATEMENT

AIHI conducts a tremendous amount of research that will be influential to policy and practice within the Australian health system, particularly as we move towards an increasingly digital environment. With regard to Dr Prgomet's work, health information technologies often result in changes to work practices and many questions arise about the nature, value, and safety of these changes. The findings emerging from WOMBAT studies help to provide rigorous evidence to answer these questions so we can identify ways in which systems and/or practice need to be redesigned to minimise or eliminate any negative efficiency or safety outcomes associated with technology and, instead, take advantage of the benefits health information technologies present.



Dr Janet Long

ACADEMIC BACKGROUND

Dr Janet Long originally qualified as a registered nurse before undertaking a BSc (Hons1) in Biological Sciences at Macquarie University. She completed a Master of Nursing (Education) at The University of Technology Sydney (UTS), and her last clinical role was Clinical Nurse Consultant at Sydney Hospital and Sydney Eye Hospital. In 2014 she moved into health services research, undertaking a PhD at UNSW Sydney with Jeffrey Braithwaite. She used social network analysis to evaluate how a new translational research network increased collaborative links across hospital and university silos.

CURRENT WORK

Dr Long is a researcher on the Behaviour Change stream within the Centre for Healthcare Resilience and Implementation Science (CHRIS), working on several linked projects that are seeking to increase identification and management of patients suspected of having Lynch syndrome, a hereditary cancer. Consumers are active partners in this work. She is also working with the Australian Genomic Health Alliance, where lessons learnt from completed pilot programs are informing the implementation of genomic testing across a further five hospitals. She is a member of the Cognitive Decline Partnership Centre and has completed two projects with this group using her expertise of social network analysis. Currently she is working on a project to evaluate collaborative links between community service providers assisting vulnerable families.

THREE KEY PUBLICATIONS IN 2016

1. **Long, J. C.**, Hibbert, P., and Braithwaite, J. (2016). *Structuring successful collaboration: a longitudinal social network analysis of a translational research network*. Implementation Science, 11(19). doi:10.1186/s13012-016-0381-y
2. Taylor, N., **Long, J. C.**, Debono, D., Williams, R., Salisbury, E., O’Neill, S., Chin, M. (2016). *Achieving behaviour change for detection and management of Lynch syndrome using the Theoretical Domains Framework Implementation (TDFI) approach: a study protocol*. BMC Health Services Research, 16, 89. doi:10.1186/s12913-016-1331-8
3. Mitchell, J., **Long, J. C.**, Brodaty, H., & Braithwaite, J. (2016). *Social-professional networks in long term care settings with people with dementia; an approach to better care? A systematic review*. Journal of the American Medical Directors Association, 17(2), e17–e27.

GRANTS SUCCESS IN 2016

Excellence in Translational Research: Premier’s Award for Outstanding Cancer Research, 2016; Cancer Challenge of the Year 2015 Team (\$20,000); Evaluation of a family support collaborative using a social network approach, Sydney LHD (\$15,000)

VISION STATEMENT

Dr Long sees AIHI’s research efforts contributing to a safe, fair and accessible health system; where health service providers are supported in their roles and health service users are assured of receiving high quality, evidence informed care.



Dr Liliana Laranjo

ACADEMIC BACKGROUND

Dr Liliana Laranjo (MD MPH PhD) is a medical doctor and Specialist in Family Medicine/General Practice. She has a Master of Public Health from the Harvard School of Public Health (2013) and in 2015 she was awarded a PhD in Medicine (Epidemiology) from Lisbon Medical School, for her thesis “Person-centered care and health information technology in Portugal—implications for chronic care and health quality improvement”.

CURRENT WORK

Dr Laranjo is part of the Centre for Health Informatics Consumer Informatics team, which is focused on investigating the impact, design and science of Information and Communication Technology on consumers, patients and their carers. She has a broad range of interests in consumer informatics and e-health, including: the use of social media and mobile health in interventions to support behaviour change and chronic disease self-management; the meaningful use of technology to promote patient activation and shared decision-making; and the role of consumer informatics in public health, primary care and evidence-based care.

Dr Laranjo's current research projects are focused on the use of mobile health technologies (particularly mobile applications, wearables and wireless tracking devices), as well as online social networks, to promote behaviour change (e.g. increasing physical activity, modifying dietary habits), with the aim of improving health outcomes.

THREE KEY PUBLICATIONS IN 2016

1. **Laranjo L**, Rodrigues D, Pereira AM, Ribeiro RT, Boavida JM. *Use of electronic health records and geographic information systems in public health surveillance of type 2 diabetes: A feasibility study*. JMIR Public Health and Surveillance. 2016; 2(1):e12.
2. Pinho-Costa L, Yakubu K, Hoedebecke K, **Laranjo L**, Reichel CP, Colon-Gonzalez MdC, Neves AL, Errami H. *Healthcare hashtag index development: Identifying global impact in social media*. Journal of Biomedical Informatics. 2016; 63:390–9.
3. **Laranjo L**, *Social media and health behaviour change* (Panel "Social Media: the dust settles, it's time for a reality check")
21st WONCA World Conference of Family Doctors

VISION STATEMENT

Dr Laranjo believes that AIHI is well-positioned to become an even stronger influencer within the Australian health system. AIHI's multidisciplinary team and high-quality research are aligned with today's most pressing issues in healthcare: quality improvement, safety, efficiency, affordability, and the growing ubiquity and impact of health information technology in every aspect of healthcare. Furthermore, the focus on the translational aspects of research puts AIHI in a key position to directly influence policy and practice, as well as facilitate the implementation of evidence-based health interventions in the real-world. Consequently, she sees AIHI as a pivotal advocate for high-quality person-centred care that is safe, efficient and affordable, both in Australia and worldwide.



Dr Virginia Mumford

ACADEMIC BACKGROUND

Dr Virginia Mumford (MBBS, MBS, MHA, PhD) completed her medical degree at St Thomas's Hospital Medical School (UK). After switching to a career in finance she received her MBA from the City University Business School (UK) in 1987 while working as a derivatives trader. An additional Master in Health Administration from UNSW Sydney (2006) sparked a further career change back to health, and she completed her PhD in health economics from the Faculty of Medicine at UNSW Sydney in 2015.

CURRENT WORK

As an applied health economist, Dr Mumford's main research focus is on evaluating the effectiveness of patient safety and quality of care interventions. She is working in a number of clinical areas including: clinical standards to reduce delirium in acute care; genetic testing in motor-neurone disease; use of surgery in refractory epilepsy; and an economic evaluation of an electronic medication management system in a paediatric hospital. Dr Mumford is also part of the Macquarie University evaluation team for the Pharmaceutical Benefits Advisory Committee as a clinical evaluator and is being trained as an economic evaluator. In these projects she is able to combine her clinical and financial background in designing tools to identify health impacts and costs associated with interventions. Her work in evaluating implementation of an electronic medication management system has included a survey to assess the impact of a child's admission to hospital on the wider network of

friends and family, and a unique tool to systematically identify and measure the harm caused by medication errors in paediatric patients.

TWO KEY PUBLICATIONS IN 2016

1. **Mumford, V.**, Reeve, R., Greenfield, D., Forde, K., Westbrook, J. and Braithwaite, J. *Is accreditation linked to hospital infection rates? A four-year, data linkage study of Staphylococcus aureus rates and accreditation scores in 77 Australian acute hospitals*, International Journal for Quality in Health Care, doi:10.1093/intqhc/mzv078 First published online: 30 September 2015.
2. D Greenfield, A Hogden, R Hinchcliff, **Mumford, V.**, M Pawsey, D Debono, et al. (2016) *The impact of national accreditation reform on survey reliability: a 2-year investigation of survey coordinators' perspectives*. Journal of evaluation in clinical practice, 2016;22:662–667. doi: 10.1111/jep.12512

GRANTS SUCCESS IN 2016

Dr Mumford was awarded a three-year NSW Ministry of Health Early to Mid-Career Fellowship in 2016 within one year of receiving her PhD. This funding was awarded on a research proposal relating to her work on reducing the impact of delirium in acute care. She was also Chief Investigator on a Department of Health grant for PBAC evaluation (\$1.45M over three years), a one-year grant from the MND Research Institute of Australia, and Associate Investigator on a \$20,000 grant from Macquarie University for a pilot study on the use of surgery in refractory epilepsy.

VISION STATEMENT

AIHI benefits from a collegiate approach to research with researchers able to collaborate on research methods and health issues across the Institute. An example of this includes the Early Career Research group which provides a support platform and targeted learning. The "Design Matters" group for quantitative researchers is another example, and creates a forum for researchers across the Institute to discuss study design and outcome analysis, and enables researchers to access experts in biostatistics, epidemiology, and econometrics. These skills, when combined with qualitative, implementation science, and bio-informatics expertise, create a critical mass in the depth and breadth of expertise required to tackle the problem of translating evidence into practice. Healthcare issues are rarely simplistic or linear and this holistic approach to analysing health service interventions is essential in influencing policy makers. AIHI's success in securing funding, attracting staff from the health sector, and in building long term relationships with health policy and quality bodies demonstrates the benefits of this business model.

Key events

DELIVERING SAFER AND BETTER CARE FOR CHILDREN IN HOSPITAL SYMPOSIUM

The Centre for Health Systems and Safety Research (CHSSR) at AIHI and The Children's Hospitals Network held a symposium at The Children's Hospital at Westmead on 6 December 2016, opened by the NSW Minister for Health, the Honorable Jillian Skinner.

The symposium provided an overview of electronic medication management (eMM) systems at The Sydney Children's Hospitals Network and preliminary results from a 5-year NHMRC research program investigating the effects of implementation.

Guest speakers included Professor Chris Lehmann, Professor of Paediatrics and Biomedical Informatics at Vanderbilt University in the United States who discussed the use of eMM systems in the US.

ADVANCES IN QUALITATIVE METHODOLOGIES IN HEALTH, MEDICINE AND SOCIAL SCIENCE RESEARCH 1-WEEK TRAINING COURSE

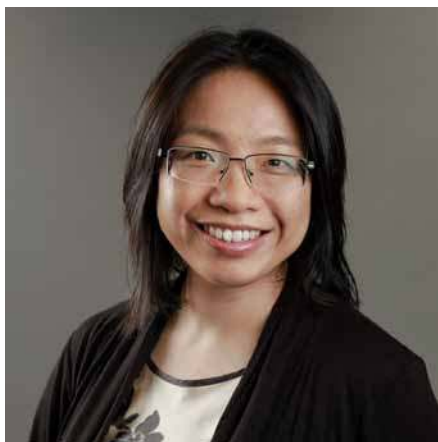
The Centre for Healthcare Resilience and Implementation Science (CHRIS) at AIHI held a week-long training course from 18–22 July 2016 titled, "Advances in qualitative methodologies in health, medicine and social science research". The course was convened by Associate Professor Frances Rapport and showcased the latest and most innovative qualitative methodological developments and applied methods in health, medicine and social science research. Twenty-one attendees from a range of academic, clinical practice, and research consultation backgrounds participated. Course staff were inundated with positive feedback, particularly about the depth and breadth of the course, and an opportunity for networking with others in qualitative research.



Our work underpins health reforms and systems improvement, providing new tools, perspectives and evidence to help stakeholders who are interested in making the health system more effective, efficient and productive.



Our awards



2016 WOMEN IN RESEARCH CITATION AWARDS—HEALTH INFORMATICS

Dr Annie Lau, recipient of the 2016 Women in Research Citation Awards—Health Informatics.

The inaugural award honours the outstanding achievements of early-to-mid-career women researchers in Australia across all fields of research in science, social sciences and the humanities. Dr Lau was one of only 12 researchers selected for these awards across Australia.

Dr Annie Lau (AIHI)



AIHI RESILIENT HEALTH CARE NET INTERNATIONAL PRIZE IN RESILIENT HEALTH CARE

Dr Robyn Clay-Williams (AIHI), Dr Paul Lane (Townsville Hospital and Health Service, THHS), Associate Professor Andrew Johnson (THHS), received second place in the inaugural AIHI Resilient Health Care Net International Prize in Resilient Health Care.

The prize, for the most innovative ideas on improving care and the potential to transform the way we manage patient safety and deliver more effective care to patients were awarded at a ceremony in Denmark in August, 2016. The prize was awarded for the team's submission on the TenCs Model at Townsville Hospital and Health Service (THHS).

L to R: Dr Christian Von Plessen (Centre for Quality, Region of Southern Denmark), Dr Paul Lane (award recipient, Townsville Hospital and Health Service), Dr Robyn Clay-Williams (award recipient, AIHI), Professor Jeffrey Braithwaite (Director, AIHI)



NSW PREMIER'S AWARD FOR EXCELLENCE IN TRANSLATIONAL RESEARCH

Dr Natalie Taylor's Lynch project was awarded the NSW Premier's Award for Excellence in Translational Research.

A CHRIS team in the behaviour change stream led this project. It involved Dr Natalie Taylor, Dr Janet Long, Dr Deborah Debono, and Professor Jeffrey Braithwaite, with colleagues from Prince of Wales Hospital, Lynch Syndrome Australia, Consumer Advisory Council and St. George Hospital.

L to R: Dr Natalie Taylor and Dr Janet Long (AIHI) and Dr Deborah Debono, Visiting Fellow, AIHI.



JOHN LANE AWARD

Dr Melissa Baysari received the John Lane Award conferred at the 51st Annual Human Factors and Ergonomics Society of Australia (HFESA) Conference. The John Lane Award recognises major systematic contributions to advancing the science of human factors and ergonomics and its application in Australia.

Dr Melissa Baysari (AIHI)



ALAN WELFORD AWARD

Professor Johanna Westbrook received the Alan Welford Award at the HFESA Conference, for best paper on a human factors and ergonomics topic.

The paper, “What are incident reports telling us? A comparative study at two Australian hospitals of medication errors identified at audit, detected by staff and reported to an incident system” was published in the *International Journal for Quality in Health Care*. Authors: Professor Johanna Westbrook, Dr Ling Li, Dr Elin Lehnbohm, Dr Melissa Baysari, Professor Jeffrey Braithwaite, Ms Rosemary Burke, Ms Chris Conn, and Professor Richard O. Day.

Professor Johanna Westbrook (AIHI)



NATIONAL MEDICINEWISE AWARDS

Dr Lisa Pont was recognised in the National Medicinewise Awards, presented at the National Medicines Symposium 2016, held in Canberra on 19-20 May 2016.

Dr Pont led the De-prescribing Project Team from the Institute in their project “Managing the behavioural and psychological symptoms of dementia (BPSD) in residential aged care”. The project was the winner of the Excellence in health professional programs: <\$100,000 budget category.

Dr Lisa Pont (AIHI)



DON WALKER AWARD

Associate Professor Meredith Makeham with AIHI colleagues received the Don Walker Award for Effectiveness at the National Health Informatics Conference in July 2016.

This award recognised her project “Risks to patient safety in the RACF Setting: Preliminary findings of the General Practice and Residential Aged Care Concordance of Medications (GRACE-Med) study”.

Professor Johanna Westbrook (AIHI) accepted the award on behalf of Associate Professor Meredith Makeham (AIHI) and the research team.



INTERNATIONAL MEDICAL INFORMATICS ASSOCIATION (IMIA) WORKING GROUP OF THE YEAR AWARD

Associate Professor Farah Magrabi and Professor Andrew Georgiou received the International Medical Informatics Association (IMIA) Working Group of the Year Award (for the third time), awarded in Munich, 28 August 2016. The award is in recognition of outstanding accomplishments and team effort in support of IMIA’s mission.

L to R: Associate Professor Farah Magrabi and Professor Andrew Georgiou (AIHI)

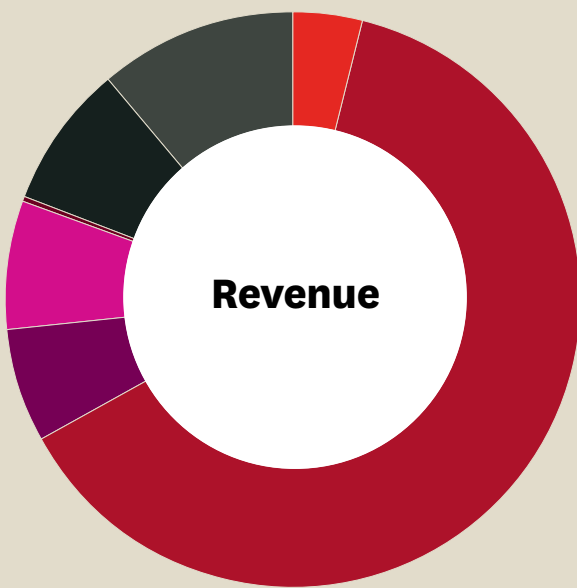


BRITISH SOCIOLOGICAL SOCIETY APPLIED AND CLINICAL RESEARCH

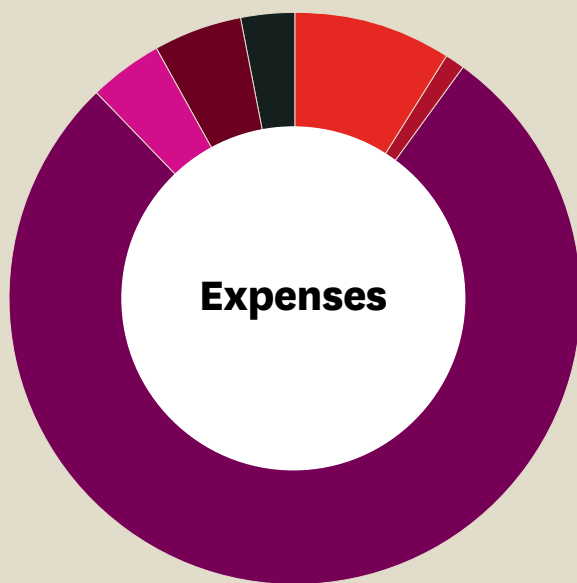
Associate Professor Frances Rapport (with Ms Sarah Hughes and Professor Hayley Hutchings) were awarded by British Sociological Society Applied and Clinical Research for their Applied and Clinical Research Poster “Seeking connectedness: a constructivist grounded theory of subjective listening effort in cochlear implementation”.

Associate Professor Frances Rapport (AIHI)

Financial highlights



● Australian Research Council	4%
● National Health and Medical Research Council	63%
● Other Australian Government financial assistance	6.6%
● Non-capital State and local government financial assistance	7%
● Income from Lead Partners	0.4%
● Income from Lead Partners (NHMRC)	8%
● Contract research	11%



● Payment to Non-lead Partners	9%
● Scholarships, Grants, Fee Waivers	1%
● Employee related expenses	78%
● Consultants and contractors expenses	4%
● Staff Development and Training, Travel	5%
● Other expenses	3%



Our staff

NAME	POSITION
ACADEMIC STAFF	
DIRECTORS/PROFESSORS	
Braithwaite, Jeffrey	Founding Director AIHI, Director CHRIS
Coiera, Enrico	Director, CHI
Westbrook, Johanna	Director, CHSSR
Georgiou, Andrew	Professor, CHSSR
ASSOCIATE PROFESSORS	
Greenfield, David	Associate Professor, CHRIS
Magrabi, Farah	Associate Professor, CHI
Makeham, Meredith	Associate Professor, CHSSR
Mitchell, Rebecca	Associate Professor, CHRIS
Rapport, Frances	Associate Professor, CHRIS
SENIOR RESEARCH FELLOWS	
Baysari, Melissa	Senior Research Fellow, CHSSR
Dunn, Adam	Senior Research Fellow, CHI
Gallego Luxan, Blanca	Senior Research Fellow, CHI
Hibbert, Peter	Senior Research Fellow, CHRIS
Lau, Annie	Senior Research Fellow, CHI
Li, Ling	Senior Research Fellow, CHSSR
Pont, Lisa	Senior Research Fellow, CHSSR
Taylor, Natalie	Senior Research Fellow, CHRIS
Tsafnat, Guy	Senior Research Fellow, CHI
RESEARCH FELLOWS	
Arnolda, Gaston	Research Fellow, CHRIS
Borotkanics, Robert	Research Fellow, CHSSR
Choong, Miew Keen	Research Fellow, CHI
Clay-Williams, Robyn	Research Fellow, CHRIS
Ellis, Louise	Research Fellow, CHRIS
Hogden, Anne	Research Fellow, CHRIS
Jorgensen, Mikaela	Research Fellow, CHSSR

4
DIRECTORS/
PROFESSORS

5
ASSOCIATE
PROFESSORS

9
SENIOR
RESEARCH
FELLOWS

12
RESEARCH
FELLOWS

50
ACADEMIC
STAFF

20
POST-DOCTORAL
RESEARCH
FELLOWS

55
PROFESSIONAL
STAFF

NAME	POSITION
ACADEMIC STAFF (CONTINUED)	
RESEARCH FELLOWS (CONTINUED)	
Maali, Yashar	Research Fellow, CHI
Prgomet, Mirela	Research Fellow, CHSSR
Raban, Magdalena	Research Fellow, CHSSR
Siette, Joyce	Research Fellow, CHSSR
Wang, Ying	Research Fellow, CHI
POSTDOCTORAL RESEARCH FELLOWS	
Blakely, Brette	Postdoctoral Research Fellow, CHRIS
Churruca, Kate	Postdoctoral Research Fellow, CHRIS
Dahm, Mary	Postdoctoral Research Fellow, CHSSR
Debono, Deborah	Postdoctoral Research Fellow, CHRIS
Douglas, Heather	Postdoctoral Research Fellow, CHSSR
Jin, Xingzhong	Postdoctoral Research Fellow, CHSSR
Karystianis, George	Postdoctoral Research Fellow, CHI
Kim, Mi Ok	Postdoctoral Research Fellow, CHI
Laranjo da Silva, Liliana	Postdoctoral Research Fellow, CHI
Long, Janet	Postdoctoral Research Fellow, CHRIS
McCaughey, Euan	Postdoctoral Research Fellow, CHSSR
Mumford, Virginia	Postdoctoral Research Fellow, CHRIS/CHSSR
Ong, Mei-Sing	Postdoctoral Research Fellow, CHI
Selwood, Amanda	Postdoctoral Research Fellow, CHRIS
Shih, Patti	Postdoctoral Research Fellow, CHRIS
Surian, Didi	Postdoctoral Research Fellow, CHI
Tong, William	Postdoctoral Research Fellow, CHI
Weerasinghe, Daminda	Postdoctoral Research Fellow, CHSSR
Wendling, Thierry	Postdoctoral Research Fellow, CHI
Zhang, Min	Postdoctoral Research Fellow, CHRIS
PROFESSIONAL STAFF	
Aversa-Druesne, Shogan	Programmer, CHI
Ayliff, Lee	Research Assistant, CHRIS
Bascombe, Florence	Research Surveyor, CHRIS
Bierbaum, Mia	Research Assistant, CHRIS
Bilimoria, Reza	Institute Manager
Bollen, Jane	Research Surveyor, CHRIS
Campbell, Margaret	Research Officer, CHRIS
Chan Moi Fat, Sandrine	Research Assistant, CHI
Charitou, Theodosia	Research Assistant, CHI
Christian-Hayes, Susan	Centre Manager, CHRIS
Cook, Ian	Research Assistant, CHI
Crick, Sheree	Centre Manager, CHSSR

NAME	POSITION
PROFESSIONAL STAFF (CONTINUED)	
Hardie, Rae-Anne	Research Assistant, CHSSR
Herkes, Jessica	Research Assistant, CHRIS
Hogden, Emily	Research Assistant, CHRIS
Horstead, Sian	Research Officer, CHRIS
Jacob, Vimala	Database Architect, CHI
James, Wendy	Research Assistant, CHRIS
Jasch, Dennis	Research Assistant, CHI
Kennedy, Georgina	Research Assistant, CHI
Kim, Tae Yeun Tara	Research Officer, CHSSR
Kim, Vitaliy	Computer Systems Officer, CHI
Lake, Rebecca	Research Assistant, CHSSR
Lamprell, Gina	Research Assistant, CHRIS
Li, Yu Jia	Research Assistant, CHSSR
Li, Zhicheng	Research Assistant, CHRIS
Liu, Jingbo	Computer Systems Officer, CHI
Lowe, Amy	Research Surveyor, CHRIS
Ludlow, Kristiana	Research Assistant, CHRIS
Lyell, David	Research Assistant, CHI
Martin, Paige	Research Assistant, CHI
McEvoy, AnnMarie	Research Surveyor, CHRIS
Molloy, Charlotte	Research Officer, CHRIS
Mullins, Jacqueline	Administration Assistant, CHRIS
Polhill, Tania	Research Assistant, CHI
Pottumati, Denise	Administration Assistant, CHSSR
Purdy, Helen	Research Assistant, CHSSR
Raichand, Smriti	Research Assistant, CHI
Richardson, Lauren	Research Assistant, CHSSR
Richardson, Stephanie	Research Surveyor, CHRIS
Schmertmann, Marcia	Research Assistant, CHRIS
Seah, Rebecca	Research Assistant, CHRIS
Smith, Kelly	Administration Assistant, AIHI
Summers, Jane	Research Surveyor, CHRIS
Sunderland, Neroli	Research Assistant, CHSSR
Sutton, Annette	Research Surveyor, CHRIS
Testa, Luke	Research Assistant, CHRIS
Thomas, Judith	Research Assistant, CHSSR
Ting, Hsuen Pei	Statistician, CHRIS
Tong, Huong Ly	Research Assistant, CHI
Tsiros, Denise	Operations and Students Manager, CHI
Van Treeck, Michael	Programmer, CHI
Waldie, Jennifer	Business Manager, CHI

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VISITING
ACADEMICS

NAME	POSITION
PROFESSIONAL STAFF (CONTINUED)	
Winata, Teresa	Research Assistant, CHRIS
Zheng, Wu Yi	Research Assistant, CHSSR
VISITING ACADEMICS	
Day, Richard	Visiting Professor
Devinney, Timothy	Visiting Professor
Greenfield, David	Visiting Professor
Hillman, Kenneth	Visiting Professor
Hollnagel, Erik	Visiting Professor
Hyde, Paula	Visiting Professor
Ingebrigtsen, Tor	Visiting Professor
Mannion, Russell	Visiting Professor
Mark, Annabelle	Visiting Professor
Matsuyama, Yukihiro	Visiting Professor
Ovretveit, John	Visiting Professor
Runciman, William	Visiting Professor
Shaw, Charles	Visiting Professor
Sunol, Rosa	Visiting Professor
Thomson, Richard	Visiting Professor
Wald, Heidi	Visiting Professor
Wears, Robert	Visiting Professor
Westbrook, Mary	Visiting Professor
White Leslie	Visiting Professor
Callen, Joanne	Honorary Associate Professor
Pawsey, Marjorie	Visiting Senior Research Fellow
Badrack, Tony	Visiting Fellow
Bishop, Simon	Visiting Fellow
Carson-Stevens, Andrew	Visiting Fellow
Choong, Miew Keen	Visiting Fellow
Chuang, Sheuwen	Visiting Fellow
Cobain, Trevor	Visiting Fellow
Corbett, Angus	Visiting Fellow
Cunningham, Frances	Visiting Fellow
Damen, Nikki	Visiting Fellow
Gardiner, Brett	Visiting Fellow
Groene, Oliver	Visiting Fellow
Hannan, Terry	Visiting Fellow
Hinchcliff, Reece	Visiting Fellow
Horvath, Andrea	Visiting Fellow
Johnston, Brian	Visiting Fellow
Legg, Michael	Visiting Fellow

NAME	POSITION
VISITING ACADEMICS (CONTINUED)	
Lindeman, Robert	Visiting Fellow
Lipworth, Wendy	Visiting Fellow
Long, Paul	Visiting Fellow
Low, Lena	Visiting Fellow
Nugus, Peter	Visiting Fellow
Nytro, Oystein	Visiting Fellow
Pain, Charles	Visiting Fellow
Pantle, Annette	Visiting Fellow
Pereira, David	Visiting Fellow
Perez Concha, Oscar	Visiting Fellow
Plumb, Jennifer	Visiting Fellow
Ramanathan, Shanthi	Visiting Fellow
Ranmuthugala, Geetha	Visiting Fellow
Robinson, Maureen	Visiting Fellow
Roffe, David	Visiting Fellow
Short, Alison	Visiting Fellow
Wiles, Louise	Visiting Fellow
Wilson, Roger	Visiting Fellow
VISITING STUDENTS	
Andersen, Niels	Visiting student
Andersen, Simon	Visiting student
Andersson, Camilla	Visiting student
Bang, Christian	Visiting student
Bousema, Leonoor	Visiting student
Charalambous, Louis	Visiting student
Chahwan, Bahia	Visiting student (Intern)
Chen, Jessica	Visiting student (Intern)
Lau, Victor	Visiting student (Intern)
Leenders, Anna	Visiting student
Meyer, Sonny	Visiting student
Xie, Qingyu	Visiting student
Yuksel, Burcu	Visiting student

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VISITING
STUDENTS

AIHI 2016

Postgraduate students

MASTER OF PHILOSOPHY (MPHIL)

Christoph Camphausen
Brian Johnston
Ken Lee
Natalie Page

DOCTOR OF PHILOSOPHY (PHD)

Rabia Bashir
Tom Bowden
Craig Campbell
Tobias Hodgson
Andre Jenkins
Georgina Kennedy
Klay Lamprell
George Larcos
David Lyell
Appukutty Manickman
Katherine McConnon
Bella St Clair
Scott Walter
Victoria Walton
Nan Zhou

FUTURE AUSTRALASIAN RESEARCHERS

AIHI runs a vibrant capacity-building post graduate program consisting of 1) Master of Research Year 2 (MRes2); 2) Master of Philosophy (MPhil), 3) PhD (Doctor of Philosophy) and, from 2017, 4) a Master of Research Year 1 (MRes1). AIHI will have a postgraduate cohort of over 28 students for 2017.

Our postgraduate program draws on the expertise and experience of an internationally recognised pool of researchers to support and supervise students, across a broad range of disciplines including computer science, medical sciences, health services research, mathematics, law, business, biostatistics, psychology, and engineering. Our postgraduate program places a strong emphasis on academic and professional development. Past doctoral candidates have progressed to senior roles in academia, health services and industry, both locally and internationally.

All postgraduate candidates work with two or more experienced supervisors, and are provided opportunities to interact with researchers and students across AIHI and Macquarie University. Our candidates are encouraged to attend regular seminars at the AIHI Seminar Series, where AIHI research staff and visiting scholars present their work. This experience allows students to learn about the wide range of projects undertaken at AIHI and ensures students are kept up to date with current trends in health services research.

In 2016, Scott Walter was the first student to complete his PhD with the Institute since moving to Macquarie University. Scott was supervised by Professor Johanna Westbrook, Macquarie University and Professor William Dunsmuir UNSW Sydney. Dr Walter's PhD project was titled "The study of clinical work processes in hospitals: Methods and applications of the quantitative observational approach".



OUR MASTER OF RESEARCH YEAR 2 STUDENTS 2016

JADRANKA DOMINKOVIC-COOK



SUPERVISOR(S)

Professor Jeffrey Braithwaite
Dr Robyn Clay-Williams
Dr Natalie Taylor

QUALIFICATIONS

MRes, MA Political Science

RESEARCH TOPIC

'Identifying external influences and understanding factors creating pressure on hospital systems'

KRISTIANA LUDLOW



*Recipient of the AIHI 2016
"Rising Star" award.*

SUPERVISOR(S)

Professor Jeffrey Braithwaite
Associate Professor Meredith Makeham
Dr Virginia Mumford

QUALIFICATIONS

BPsych (Hons)

RESEARCH TOPIC

'The effects of hearing loss on preferences for shared decision making in residential aged care: A mixed method approach'

ANMOL SANDHU



SUPERVISOR(S)

Dr Melissa Baysari
Professor Johanna Westbrook

QUALIFICATIONS

BPharm (Hons), MSHP

RESEARCH TOPIC

'Enabling drug-drug interactions in an Electronic Medication Management System: Impact on prescriber alert burden'

DC (DUDZAYI) NHIWATIWA



SUPERVISOR(S)

Professor Johanna Westbrook
Dr Melissa Baysari

QUALIFICATIONS

BPharm (Hons), MPH, MBA

RESEARCH TOPIC

'An investigation of the treatment journey of paediatric patients with acute lymphoblastic leukaemia in hospital'

LUKE TESTA



SUPERVISOR(S)

Professor Jeffrey Braithwaite
Professor Ken Hillman
Associate Professor Rebecca Mitchell

QUALIFICATIONS

MPH

RESEARCH TOPIC

'A cross-sectional survey involving nurses reporting on the most recent patient that they cared for in the ICU who subsequently died receiving palliative care'

VIRGINIA ARMOUR



SUPERVISOR(S)

Associate Professor Rebecca Mitchell
Dr Anne Hogden

QUALIFICATIONS

MHA, GradDip (Critical Care Nursing),
BSc (Nursing)

RESEARCH TOPIC

'The nursing experience of caring for people with dementia and co-morbidities in the acute healthcare setting'

TANIA WAITOKIA



SUPERVISOR(S)

Associate Professor Rebecca Mitchell
Professor David Greenfield

QUALIFICATIONS

BN, BM, PGCertCT, PGDipBus –
Health Management, MHSc

RESEARCH TOPIC

'An investigation of a natural
experiment in quality improvement
and health system performance'

AMANDA BRYAN – FOX



SUPERVISOR

Dr Anne Hogden

QUALIFICATIONS

BA(Comms), MBA

RESEARCH TOPIC

'Trialling design personas in
residential aged care'

AIDAN O'BRIEN



SUPERVISOR

Dr Blanca Gallego Luxan

QUALIFICATIONS

BE(Hons)

RESEARCH TOPIC

'Development and validation of an
operational definition for potentially
preventable hospital readmissions'

Our publications

BOOKS

1. **Georgiou A**, Schaper LK, Whetton S, editors. 1. *Georgiou A, Schaper LK, Whetton S, editors. Digital Health Innovation for Consumers, Clinicians, Connectivity and Community. Amsterdam: IOS Press BV; 2016.. Amsterdam: IOS Press BV; 2016.*
2. Syed-Abdul S, **Gabarron E**, **Lau A**. *Participatory Health through Social Media*. London UK: Elsevier Academic Press; 2016.



BOOK CHAPTERS

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2. Adams S, Syed-Abdul S, **Gabarron E**, **Lau A**. *Use of social media by hospitals and health authorities*. *Participatory Health through Social Media*: Elsevier; 2016. p. 27–41.
3. **Braithwaite J**, Donaldson L. *Patient safety and quality*. In: Ferlie E, Montgomery K, Reff A, editors. *The Oxford Handbook of Health Care Management*. Oxford, UK: Oxford University Press; 2016. p. 325–51.
4. **Dahm MR**, Berger I. *Breaking informed consent: Strategies for risk communication in surgical practice*. In: White S, Cartmill J, editors. *Communication in Surgical Practice*: Equinox; 2016. p. 94–123.
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6. Denig P, Haaijer-Ruskamp F, **Pont L**. *Quality indicators for prescribing—what do we measure?* *Drug Utilization Research: Methods and Applications*. UK: Wiley-Blackwell; 2016.
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8. **Georgiou A**. *Finding, appraising and interpreting the evidence of health IT*. In: Ammenwerth E, Rigby M, editors. *Evidence-Based Health Informatics*. Amsterdam: IOS Press; 2016. p. 312–23.
9. **Lake R**, **Li L**, **Baysari M**, Byrne M, Robinson M, **Westbrook J**. *Capturing accurate and useful information on medication-related telenursing triage calls*. In: **Georgiou A**, Schaper LK, Whetton S, editors. *Digital Health Innovation for Consumers, Clinicians, Connectivity and Community: Studies in Health Technology and Informatics Melbourne*: IOS Press BV; 2016. (227) p. 74–9.
10. **Laranjo L**. *Social media and health behavior change*. *Participatory Health through Social Media*: Elsevier; 2016. p. 83–103
11. Lehnbohm EC, **Li L**, **Prgomet M**, Lam WY, **Westbrook JI**. *Little things matter: A time and motion study of pharmacists' activities in a paediatric hospital*. In: **Georgiou A**, Schaper LK, Whetton S, editors. *Digital Health Innovation for Consumers, Clinicians, Connectivity and Community: Studies in Health Technology and Informatics Melbourne*: IOS Press BV; 2016. (227) p. 80–6.
12. **Li L**, **Georgiou A**, Xiong J, Byrne M, Robinson M, **Westbrook JI**. *Healthdirect's after hours GP helpline – a survey of patient satisfaction with the service and compliance with advice*. In: **Georgiou A**, Schaper LK, Whetton S, editors. *Digital Health Innovation for Consumers, Clinicians, Connectivity and Community: Studies in Health Technology and Informatics Melbourne*: IOS Press BV; 2016. (227) p. 87–92.
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15. **Magrabi F**, **Ong MS**, **Coiera E**. *Health IT for patient safety and improving the safety of health IT*. *Studies in Health Technology and Informatics*: IOS Press; 2016. p. 25–36.
16. **Magrabi F**, **Ong M-S**, **Coiera E**. *An overview of HIT-related errors*. *Safety of Health IT*: Springer International Publishing; 2016. p. 11–23.
17. Phillips R, **Hogden A**, **Greenfield D**. *Motivational interviewing to promote self-management*. In: Martz E, editor. *Promoting Self-Management of Chronic Impairments: Theories and Practice*. Washington, United States: Oxford University Press; 2016. (Invited Chapter).
18. **Pont LG**. *Challenges in the management of hypertension in older populations*. In: Islam MS, editor. *Advances in Experimental Medicine and Biology* 2016.

19. Reynolds M, James K, **Westbrook JI**. Innovations in dispensing. In: Dean-Franklin B, Tully MP, editors. **Safety in Medication Use**. London, UK: Taylor and Francis; 2016. p. 239-48.
 20. **Rapport F, Braithwaite J, Mitchell R, Westbrook J, Churruca K**. *Australian healthcare: Models of translational care in a federated landscape*. In: Aase K, Schibevaag L, editors. *Researching Quality and Safety in Translational Care* London: Palgrave Macmillan; 2016. (In press).
 21. Roger P, **Dahm M**, Cartmill J, Yates L. *Inter-professional clinical handover in surgical practice*. In: White S, Cartmill J, editors. *Communication in Surgical Practice*: Equinox; 2016. p. 333-54.
 22. Scott PJ, **Georgiou A**, Hyppönen H, Craven CK, Rigby M, Brender MJ. *Theoretical foundations for evidence-based health informatics: Why? How?* In: Hoerbst W, Hackl WO, de Keizer N, Prokosch HU, Cercigonja-Szekeres M, de Lusignan S, editors. *Exploring Complexity in Health: An interdisciplinary Systems Approach* Amsterdam IOS Press; 2016. p. 614-8.
 23. Syed-Abdul S, Gabarron E, **Lau A**, Househ M. *An introduction to participatory health through social media*. In: Syed-Abdul S, Gabarron E, Lau A, editors. *Participatory Health Through Social Media*. London, UK: Elsevier Academic Press; 2016. p. 1-9.
 24. Vecellio E, **Georgiou A**. *Integrating the radiology information system with computerised provider order entry: The impact on repeat medical imaging investigations*. In: **Georgiou A**, Schaper LK, Whetton S, editors. *Digital Health Innovation for Consumers, Clinicians, Connectivity and Community: Studies in Health Technology and Informatics* Melbourne, Sydney: IOS Press BV; 2016. (227) p. 126-31.
 25. **Westbrook JI, Baysari M**. Technological approaches for medication administration. In: Dean-Franklin B, Tully MP, editors. **Safety in Medication Use**. London, UK: Taylor and Francis; 2016. p. 229-37.
 26. **Westbrook JI, Baysari M**. Electronic prescribing and medication administration record systems. In: Dean-Franklin B, Tully MP, editors. **Safety in Medication Use**. London, UK: Taylor and Francis; 2016. p. 213-28.
 27. **Westbrook JI**, Caldwell G, Dean-Franklin B. Interventions for safer work systems. In: Dean-Franklin B, Tully MP, editors. *Safety in Medication Use*. London, UK: Taylor and Francis; 2016. p. 199-250.
 28. **Westbrook JI, Raban MZ**, Lehnbohm EC, **Li L**. *The precise observation system for the safe use of medicines (POSSUM): An approach for studying medication administration errors in the field*. In: Hoerbst A, Hackl WO, de Keizer N, Prokosch HU, Hercigonja-Szekeres M, de Lusignan S, editors. *Exploring Complexity in Health: An Interdisciplinary Systems Approach*: IOS Press; 2016. (228) p. 629-33.
 29. Yates L, **Dahm M**. *Doing patient-centred consultations: Some challenges for IMGs*. In: White S, Cartmill J, editors. *Communication in Surgical Practice*: Equinox; 2016. p. 35-67.
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- REFEREED JOURNAL ARTICLES**
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 2. Amalberti R, Nicklin W, **Braithwaite J**. Preparing national health systems to cope with the impending tsunami of ageing and its associated complexities. Towards more sustainable health care. *International Journal for Quality in Health Care*. 2016; First published online: 15 March 2016 —10.1093/intqhc/mzw021.
 3. **Arguel A, Perez-Concha O**, Li SY, **Lau A**. Theoretical approaches of online social network interventions and implications for behavioral change: A systematic review. *Journal of Evaluation in Clinical Practice*. 2016; (Oct 6 [Epub ahead of print]).
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 6. **Baysari MT**, Lehnbohm EC, **Li L**, Hargreaves A, Day RO, **Westbrook JI**. The effectiveness of information technology to improve antimicrobial prescribing in hospitals: A systematic review and meta-analysis. *International Journal of Medical Informatics*. 2016; 92:15-34.
 7. **Baysari MT, Tariq A**, Day RO, **Westbrook JI**. Alert override as a habitual behaviour – A new perspective

- on a persistent problem. *Journal of the American Medical Informatics Association*. 2016; Published Online First: 6 June 2016:1–4.
8. Beuscart J, **Pont L**, Thevelin S, Boland B, Dalleur O, Rutjes A, **Westbrook J**, Spinewine A. A systematic review of the outcomes reported in trials of medication review in older patients: the need for a core outcome set. *British Journal of Clinical Pharmacology* 2016; Published Online First: 26 November 2016.
 9. BinDhim NF, Alanazi EM, Aljadhey H, Basyouni MH, Kowalski SM, **Pont LG**, Shaman AM, Trevena L, Alhawassi TM. Does a smartphone depression screening app motivate users with high depressive symptoms to seek a healthcare professional's help? *Journal of Medical Internet Research*. 2016; (Accepted 19 May 2016).
 10. **Blakely B**, **Selwood A**, Rogers WA, **Clay-Williams R**. Macquarie Surgical Innovation Identification Tool (MSIIT): A study protocol for a usability and pilot test. *BMJ Open*. 2016; 6(11).
 11. Bogh SB, Falstie-Jensen A, Hollnagel E, Holst R, **Braithwaite J**, Johnsen SP. Improvement in quality of hospital care during accreditation: A nationwide stepped-wedge study. *International Journal for Quality in Health Care* 2016:1–6.
 12. **Borotkanics R**, Rowe C, **Georgiou A**, **Douglas H**, **Makeham M**, **Westbrook J**. Changes in the profile of Australians in 77 residential aged care facilities across New South Wales and the Australian Capital Territory. *Australian Health Review*. 2016; Published online first: 28 November 2016.
 13. **Braithwaite J**, **Clay-Williams R**, Vecellio E, Marks D, Hooper T, **Westbrook M**, **Westbrook J**, **Blakely B**, **Ludlow K**. The basis of clinical tribalism, hierarchy and stereotyping: A laboratory-controlled teamwork experiment. *BMJ Open*. 2016; 6(7).
 14. **Braithwaite J**, **Herkes J**, **Ludlow K**, **Lamprell G**, **Testa L**. Association between organisational and workplace cultures, and patient outcomes: systematic review protocol. *BMJ Open*. 2016; Published Online First: 1 December 2016.
 15. **Braithwaite J**, **Hibbert P**, **Blakely B**, Plumb J, Hannaford N, **Long J**, Marks D. Health system frameworks and performance indicators in eight countries: a comparative international analysis. *Sage Open Medicine* 2016; Accepted: 1 December 2016.
 16. **Braithwaite J**, Matsuyama Y, Mannion R, Johnson J, Bates DW, **Hughes C**. How to do better health reform: A snapshot of change and improvement initiatives in the health systems of 30 countries. *International Journal for Quality in Health Care*. 2016; Published Online First: 21 September 2016.
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 20. Cardona-Morrell M, Chapman A, Turner RM, Lewis E, **Gallego-Luxan B**, Parr M, Hillman K. Pre-existing risk factors for in-hospital death among older patients could be used to initiate end-of-life discussions rather than rapid response system calls: A case-control study. *Resuscitation*. 2016; 109:76–80.
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 24. **Churruca K**, Ussher JM, Perz J. Just Desserts? Exploring constructions of food in women's experiences of bulimia. *Qualitative Health Research* 2016; Published Online First: 13 October 2016:1-16.
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 31. **Dahm MR**, Cartmill JA. Talking their way to success: communicative competence for international medical graduates in transition. *Medical Education*. 2016; 50:992–3.
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- The relationships of time management behaviour and work engagement with the five factor model aspects. *Learning and Individual Differences*. 2016; 45:268–74.
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CONFERENCE PAPERS—FULL-PAPER

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 12. **Braithwaite J, Clay-Williams R, Taylor N, Debono D, Long J, Rapport F, Hogden A.** Improvements in patient safety in the real world: Safety-II in a resilient health system [Abstract]. *10th International Organisational Behaviour in Health Care Conference*; 4–6 April 2016; Cardiff, Wales. 2016.
 13. **Braithwaite J**, Hollnagel E, Wears R. RHCN at five: How have we done so far? [Abstract]. *Resilient Health Care Net meeting*; 15–17 August 2016; Middelfart, Denmark. 2016.

14. **Braithwaite J, Li Z.** The DUQuA project: Navigating barriers, ethics and governance: Requirements in hospitals and health services [Poster]. *Royal Australasian College of Medical Administrators Conference: Harm free health care*; 12–14 October 2016; Brisbane, Australia. 2016.
15. **Braithwaite J, Morita A, Imanaka Y, Westert G.** Cost of quality at the system level: Reconstructing national/regional healthcare systems in countries with active aging [Abstract]. *33rd International Society for Quality in Healthcare (ISQua) Conference*; 16–19 October 2016; Tokyo, Japan. 2016.
16. **Churruca K, Draper B, Mitchell R.** Varying impact of comorbid conditions on self-harm resulting in mortality in Australia [Abstract]. *Australasian Vital Statistics Interest Group Conference*; 21–22 November 2016; Canberra, Australia. 2016.
17. **Churruca K, Rapport F.** “It’s always about the eating disorder”: Losing the person in the treatment of bulimia [Abstract]. *33rd International Society for Quality in Healthcare (ISQua) Conference* 16–19 October 2016; Tokyo, Japan. 2016.
18. **Clay-Williams R, Blakely B, Lane P, Johnson A.** Resilience in acute health care: implementation of an ICU intervention – Part 2 [Abstract]. *Resilient Health Care Net (RHCN) Conference*; 15–18 August; Middelfart, Denmark. 2016.
19. **Clay-Williams R, Debono D, Braithwaite J.** Who are they, and why should I identify with them? How ‘knowing’ colleagues can denote individuals, and improve and sustain patient care [Abstract]. *10th International Organisational Behaviour in Health Care Conference, OBHC2016*; 4–6 April 2016; Cardiff Wales. 2016.
20. **Clay-Williams R, Li Z, Lane P, Camilleri L, Winata T, Johnson A.** Training leaders for resilient health care: Negotiation 101 for healthcare executives [Abstract]. *2016 Human Ergonomics and Patient Safety conference*; 5–7 October 2016; Toulouse, France. 2016.
21. **Clay-Williams R, Taylor N, Hogden E, Braithwaite J.** Undertaking large-scale research in Australia: Encountering the complex web of ethics and governance in hospitals and health services [Abstract]. *33rd International Society for Quality in Healthcare (ISQua) Conference*; 16–19 October 2016; Tokyo, Japan. 2016.
22. **Clay-Williams R, Taylor N, Ting P, Hogden E, Li Z, Selwood A, Winata T, Braithwaite J.** Undertaking large-scale research in Australia: Encountering the complex web of ethics and governance in hospitals and health services [Abstract and Poster]. *NHMRC Symposium on Research Translation*; 15 November 2016; Melbourne. 2016.
23. **Clay-Williams R, Taylor N, Ting P, Hogden E, Li Z, Winata T, Selwood A, Braithwaite J.** Deepening our understanding of research governance in Australia: the complications of multi-centre health services research [Abstract and Poster]. *Royal Australasian College of Medical Administrators*; 13–14 October; Brisbane. 2016.
24. **Dahm M, Georgiou A, Bryant L, Balandin S, Hill S, Hemsley B.** Health documentation in I/DD supported accommodation: A conceptual review and proposed consumer informatics model for health information management. *International Association for the Scientific Study of Intellectual and Developmental Disabilities (IASSIDD) World Congress*; 15–18 August; Melbourne. 2016.
25. **Dahm M, Georgiou A, Hemsley B.** Review of health information infrastructure in supported accommodation settings: Providing an integrated model of disability health informatics for people with I/DD [Abstract]. *ISQua 33rd International Conference*; Tokyo. 2016. p. 1–4.
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27. **Dahm MR, Yates L, Ogden K, Rooney K.** Using linguistic analysis to inform effective communication feedback to health science students on Clinical placement. *17th Ottawa/ ANZAHPE Conference*; 19–23 March 2016; Perth. 2016.
28. **Debono D, Greenfield D, Mumford V, Braithwaite J.** Improvements identified, but future sustainability is not assured: Stakeholders’ views on accreditation in Australian general practices [Abstract]. *33rd International Society for Quality in Healthcare (ISQua) Conference*; 16–19 October 2016; Tokyo, Japan. 2016.
29. **Draper B, Mitchell R, Harvey L, Brodaty H, Close J, editors.** Self-harm and dementia [Abstract]. *International Association for Suicide Prevention Asia Pacific Conference*; 2016 18–21 May 2016; Tokyo, Japan.
30. **Draper B, Mitchell R, Harvey L, Brodaty H, Close J.** Self-harm and dementia [Abstract]. *International Psychogeriatric Association Conference*; 6–9 September 2016; San Francisco, U.S.A. 2016.
31. **Dunn A, Bourgeois F.** A matching algorithm between ClinicalTrials.gov and PubMed to support the monitoring of gaps in published study results. *AMIA Annual Symposium*; November 2016; Chicago, USA. 2016.
32. **Georgiou A.** How should we deal with missed test results and pending results at discharge? [Abstract]. *Pathology Update*; 27 February 2016; Melbourne. 2016.
33. **Georgiou A, Li L, Vecellio E, Westbrook JI.** An investigation into variation in the volume and appropriateness of hospital pathology requesting patterns [Abstract]. *Proceedings of the International Society for Quality in Healthcare (ISQua) 33rd International Conference*; 16–19 October 2016; Tokyo. 2016.
34. **Greenfield D, Banks M, Hogden A, Braithwaite J.** The ripple effect: diffusing a national health policy through the use of icons [Abstract]. *10th International Organisational Behaviour in Health Care Conference, OBHC2016*; 4–6 April 2016; Cardiff, Wales. 2016.
35. **Harvey L, Howard K, Mitchell R, Mikolaizak S, Close J.** The impact of length of stay on true cost of hip fracture care in NSW [Poster]. *The Australian and New Zealand Society for Geriatric Medicine Annual Scientific Meeting*; 1–3 June 2016; Cairns, Australia. 2016.
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- and New Zealand Falls Prevention Conference; 27–29 November 2016; Melbourne, Australia. 2016.
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 39. Harvey L, **Mitchell R**, Draper B, Brodaty H, Close J. The impact of dementia and other comorbidities on increased risk of subsequent hip fracture following hip fracture in Australia: a competing risk approach [Abstract]. *International Population Data Linkage Conference*; 24–26 August, 2016; Wales, United Kingdom. 2016.
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 42. **Hogden A**, **Greenfield D**, Brandon M, **Debono D**, **Mumford V**, **Westbrook J**, **Braithwaite J**. Does an accreditation program in residential aged care attain, sustain and spread improvement relevant to residents and their families? [Abstract]. *10th International Organisational Behaviour in Health Care Conference, OBHC2016*; 4–6 April 2016; Cardiff, Wales. 2016.
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 46. Hughes S, Hutchings H, **Rapport F**. Seeking connectedness: A constructivist Grounded Theory of perceived listening effort in Cochlear Implantation [Abstract]. *British Sociological Association (BSA) 25–27 April 2016*; Coventry, England. 2016.
 47. **Kennedy G**. Classification of clinical prediction rules by design and usage. *Asia Pacific Association for Medical Information (APAMI) Conference*; 2–5 November 2016; Seoul, Korea. 2016.
 48. Kyng TJ, **Li L**. An actuarial analysis of Australian retirement village contracts using survival modelling: a consumer perspective [Abstract]. *2016 Congress on Insurance, Mathematics and Economics*; 25–27 July 2016; Atlanta, USA. 2016.
 49. Lane P, **Clay-Williams R**, Johnson A. Workshop: towards a movement [Abstract]. *Resilient Health Care Net (RHCN) Conference*; 15–18 August; Middelfart, Denmark. 2016.
 50. **Laranjo L**. The influence of social networking sites on health behavior change: A meta-analysis [abstract]. *European General Practice Research Network meeting 20–24 May 2016*; Tel Aviv, Israel. 2016.
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65. **Mitchell R**, Harvey L, Brodaty H, Draper B, Close J. Hip fracture and the influence of dementia on rehabilitation functional outcomes for older people [Abstract]. *7th Biennial Australian and New Zealand Falls Prevention Conference*; 27–29 November 2016; Melbourne, Australia. 2016.
66. **Mitchell R**, Harvey L, Draper B, Brodaty H, Close J. Characteristics associated with residential aged care, respite and transitional aged care placement for older people following an injury-related hospitalisation in Australia [Poster]. *International Population Data Linkage Conference*; 24–26 August, 2016; Wales, United Kingdom. 2016.
67. **Mumford V**, **Greenfield D**, Parkinson B, **Braithwaite J**. What would it take for accreditation to be cost-effective? A threshold analysis case study [Abstract]. *33rd International Society for Quality in Healthcare (ISQua) Conference*; 16–19 October 2016; Tokyo, Japan. 2016.
68. **Ong M-S**. Elevated risk of pulmonary vascular disease (PVD) with pulmonary hypertension (PH) in children with primary immunodeficiency (PID). *2016 CIS Annual Meeting: Immune Deficiency & Dysregulation North American Conference*; 14–17 April 2016; Boston, Massachusetts, USA. 2016.
69. **Pont LG**, Semerdijan M, Burke T, Mekhael L, Vucic S, Hughes V. Time-to-treatment in the management of relapsing/remitting multiple sclerosis [Abstract and Poster]. *International Conference on Pharmacoepidemiology*; 25–28 August; Dublin. 2016.
70. Pradhan E, **Pont LG**. Safety of Non-Prescription NSAIDs [Abstract and Poster]. *International Conference on Pharmacoepidemiology*; 25–28 August; Dublin. 2016.
71. Randell R, Dowding D, Scott P, **Georgiou A**. Mixed methods evaluations for understanding impact on patient outcomes and work practice [Abstract]. *Health Exploring Complexity Conference 2016*; 28 August–2 September 2016; Munich, Germany. 2016.
72. **Rapport F**, **Shih P**, **Churruca K**. Care Across the Continuum: Supporting women concerned about breast cancer in genetics and oncology settings [Abstract]. *33rd International Society for Quality in Healthcare (ISQua) Conference*; 16–19 October 2016; Tokyo, Japan. 2016.
73. Robertson H, Hayen A, **Georgiou A**. Microgeographies of dementia: An Australian spatial dashboard system [Abstract]. *Australian Association of Gerontology (AAG) 49th Annual Conference, Capitalising on the Ageing Dividend: Re-imagining Our Future*; 2–4 November 2016; Canberra. 2016.
74. **Shih P**, **Rapport F**. God has no hands but ours: Why faith-based organisations deliver quality care in Papua New Guinea [Abstract]. *33rd International Society for Quality in Healthcare (ISQua) Conference*; 16–19 October 2016; Tokyo, Japan. 2016.
75. **Taylor N**, **Debono D**, **Long J**, Williams R. Co-designing interventions to overcome key barriers to referral of colorectal cancer patients with a high risk of hereditary cancer to genetics counselling services [Abstract]. *33rd International Society for Quality in Healthcare (ISQua) Conference*; 16–19 October 2016; Tokyo, Japan. 2016.
76. **Taylor N**, **Long J**, **Debono D**. Using behaviour change and implementation science to translate hereditary cancer evidence into practice [Abstract]. *Sydney Cancer Conference 2016*; 23 September 2016; Sydney, Australia. 2016.
77. Thompson JL, Grosvenor S, Nikitas A, McDermott S, **Long J**, Kurrie S. Improving dementia care by creating research connections that encourage collaboration and translation of research into real outcomes for people with dementia [Poster]. *NHMRC National Institute for Dementia Research Symposium*; 1–3 May 2016; Brisbane, Australia. 2016.
78. Tucker K, Healey E, Williams R, **Taylor N**. Intuition versus theory: Enhancing the replicability of behaviour change interventions in cancer genetics [Abstract]. *6th International Symposium on Heredity Breast and Ovarian Cancer*; 10–13 May 2016; Montreal Canada. 2016.
79. Waring J, Allen D, Sandall J, **Braithwaite J**. Scaling up and spreading improvements in quality of care and patient safety: what sociology can contribute [Abstract]. *10th International Organisational Behaviour in Health Care Conference, OBHC2016*; 4–6 April 2016; Cardiff Wales, U.K. 2016.
80. **Westbrook JI**, **Raban MZ**, **Baysari MT**, **Li L**, **Kim T**, **Prgomet M**, **Mumford V**. Practical challenges in planning and conducting a stepped wedge cluster randomised controlled trial to assess the effects of health information technology in hospitals [Abstract]. *Medical Informatics Europe Health Conference*; 28 August–2 September 2016; Munich, Germany. 2016.
81. **Westbrook JI**, Shah S, Lehnbohm EC, Girling A, editors. A collaborative cross-country study to measure the impact of electronic medication management systems [Abstract]. *International Journal for Quality in Health Care, 33rd ISQua Conference 2016* 16–19 October 2016; Tokyo, Japan: Oxford University Press.
82. Whitby L, **Clay-Williams R**, **Baysari M**. Symposium: Improving job design in health – some success stories (and some failures) [Abstract] *5th Human Factors and Ergonomics Society of Australia* 6–9 November; Gold Coast. 2016.



Our overarching aim is to produce new, high-quality research evidence to support change, prevention and improvement in the Australian health system.

Seminars

THE VIEW FROM OVER HERE

Presenter: Professor Patrick Bolton

Director of Clinical Services, Prince of Wales Hospital, NSW Australia

PATIENT SAFETY INITIATIVES IN CHINA—START, PROGRESS AND LESSONS LEARNT

Presenter: Dr Hao Zheng

Associate Professor, Director of International Office, Tongji University School of Medicine, Shanghai, China

INTEGRATING CLINICAL REGISTRIES AND ADMINISTRATIVE DATA FOR EVIDENCE-BASED HEALTHCARE PERFORMANCE EVALUATION: EXPERIENCES IN EU AND OECD PROJECTS

Presenter: Professor Fabrizio Carinci

Professor of Health Systems and Policy at the School of Health Sciences, University of Surrey, UK

COLLABORATION SPACES:

UNDERSTANDING HEALTH INFORMATION SYSTEMS DESIGN FOR COLLABORATIVE HEALTHCARE DELIVERY

Presenter: Associate Professor

Craig Kuziemyky

Associate Professor and Director of the Master of Science in Health Systems Program, Telfer School of Management, University of Ottawa, Canada

HARNESSING THE INFORMATION REVOLUTION: HOW BETTER USE OF DATA AND TECHNOLOGY TRANSFORMS OUTCOMES AND COSTS IN HEALTH AND CARE

Presenter: Mr Tim Kelsey

Telstra Health Commercial Director, Telstra Health, Australia

THE LEARNING HEALTH SYSTEM AND CLINICAL INFORMATICS

Presenter: Dr Jonathan Palma

Clinical Assistant Professor of Neonatology, Stanford University, USA

HIDDEN AND NOT SO HIDDEN BIAS IN NUTRITION RESEARCH

Presenter: Professor Lisa Bero

The University of Sydney, Charles Perkins Centre, Australia

HEALTHCARE REBEL IN PARADISE

Presenter: Dr Faisal Saeed

Visiting Fellow Agency for Clinical Innovation ADK Hospital, Maldives

BRIDGING THE GAPS: THE "WHY, WHAT AND HOW" OF REMOTE CRITICAL CARE

Presenters: Dr Timothy Buchman and Ms Cheryl Hiddleston

Emory Critical Care Centre, USA

SYSTEMATIC REVIEWS AND RESEARCH SYNTHESIS OUTSIDE THE CLINICAL SCIENCES

Presenter: Professor Annette O'Connor

Iowa State University, USA

MODERNISING PATIENT SAFETY: RECONCILING WORK-AS-IMAGINED AND WORK-AS-DONE

Presenter: Professor Jeffrey Braithwaite

Founding Director and Director of the Centre for Healthcare Resilience and Implementation Science, AIHI

TOWARDS AN EXNOVATIVE TURN IN PATIENT SAFETY RESEARCH

Presenter: Associate Professor Jessica Mesman

Maastricht University, The Netherlands

DIAGNOSTIC ERRORS: A NEW CHAPTER IN PATIENT SAFETY IMPROVEMENT SCIENCE

Presenter: Associate Professor Hardeep Singh

Michael E. DeBakey VA Medical Center and Baylor College of Medicine, Houston, USA

WORKING WITH PATIENTS AND PROFESSIONALS IN SETTING RESEARCH PRIORITIES: THE CASE OF ENT, HEARING AND BALANCE

Presenter: Associate Professor Anne Schilder

Professor of Otorhinolaryngology at the UCL Ear Institute and at the University Medical Center, Utrecht, The Netherlands

THE RELATIONSHIP BETWEEN USING ELECTRONIC HEALTH RECORDS AND MEETING ACCREDITATION OUTCOMES IN AUSTRALIAN RESIDENTIAL AGED CARE HOMES

Presenter: Associate Professor Ping Yu

Director of the Centre for IT-enabled Transformation, Faculty of Engineering and Information Sciences at University of Wollongong, Australia

RESEARCH SOLUTION TO CHRONIC DISEASE BURDEN IN THE COMMUNITY: OSTEOARTHRITIS

Presenter: Professor David Hunter

Florance and Cope Chair of Rheumatology and Professor of Medicine at The University of Sydney, Australia

EVOLVING MODELS OF HEALTH CONSUMER AND COMMUNITY ENGAGEMENT IN THE AUSTRALIAN HEALTH SECTOR

Presenter: Ms Serena Joyner

Consumer Engagement Manager at Health Consumers NSW, Australia

**THE MANY LENSES OF HPV
VACCINE HESITANCY**

Presenter: Ms Gilla Shapiro

PhD candidate in clinical psychology at McGill University, Canada

**POPULATING PATIENT SAFETY: A NEW
PERSPECTIVE ON INTERSECTIONAL
PATTERNS OF IATROGENIC HARM**

Presenter: Professor Joanne Travaglia

Professor of Health Management, and the Director of the Centre for Health Services Research, University of Technology, Sydney

**NOT YOUR AVERAGE GUIDELINE:
CLINICAL PATHWAY DISCOVERY FROM
ELECTRONIC HEALTH RECORD DATA**

Presenter: Professor Rema Padman

Professor of Management Science and Healthcare Informatics in the H. John Heinz III College at Carnegie Mellon University in Pittsburgh, USA

**ANTIMICROBIAL STEWARDSHIP FOR UTI
IN US NURSING HOMES**

**Presenter: Associate Professor
Heidi Wald**

Associate Professor of Medicine, University of Colorado, USA and Visiting Professor, AIHI, Australia

**CREATING LEARNING SYSTEMS FOR
QUALITY IMPROVEMENT**

Presenter: Ms Carrie Marr

Chief Executive, The Clinical Excellence Commission (CEC)

**THE BRIGHT AND DARK SIDE OF
KNOWLEDGE MOBILISATION: LEARNING
FROM A LARGE-SCALE COLLABORATIVE
RESEARCH PARTNERSHIP**

Presenter: Dr Roman Kislov

Research Fellow in the Health Services Research, Manchester Business School, University of Manchester, UK

**CLINICAL WORK PATTERNS, SAFETY AND
HEALTH INFORMATION TECHNOLOGY**

Presenter: Professor Johanna Westbrook

Director Centre for Health Systems and Safety Research, AIHI

MAKING CARE SAFER THROUGH EHR'S

Presenter: Professor Chris Lehmann

Professor for Pediatrics and Biomedical Informatics, Vanderbilt University, USA

**RESILIENT LEADERSHIP: EXPLORING THE
MOST APPROPRIATE LEADERSHIP STYLE
FOR RESILIENT ORGANIZATIONS WITHIN
THE HEALTH CARE SECTOR**

**Presenter: Associate Professor
Eric Arne Lofquist**

BI Norwegian Business School, Bergen, Norway

**MAKING GOOD QUALITY CARE
HABITUAL: AN EXPLORATION OF
THE CONCEPT HABIT IN RELATION
TO HEALTHCARE PROFESSIONAL
BEHAVIOUR**

Presenter: Mr Sebastian Potthoff

Doctoral Research Fellow, Institute of Health and Society, Newcastle University, UK



Grants under management

GRANTS AWARDED IN 2016 AND ONGOING GRANTS

GRANT	INVESTIGATORS	GRANTING ORGANISATION	GRANT AMOUNT
NHMRC			
Implementation of genomic sequencing into clinical practice	N Taylor J Braithwaite C Gaff	NHMRC	\$240,000
The appropriateness of healthcare delivered to Australian Children: CareTrack Kids	J Braithwaite A Jaffe L White C Cowell M Harris PARTNERS BUPA * The Sydney Children's Hospital Network NSW Kids and Families, NSW Ministry of Health SA Department of Health Children's Health Queensland The Clinical Excellence Commission (CEC)	NHMRC	\$1,263,318
			\$120,000
			\$120,000
			\$120,000
			\$120,000
Creating safe, effective systems of care: the translational challenge	J Braithwaite J Westbrook E Coiera W Runciman R Day K Hillman	NHMRC	\$10,855,710
Real time surveillance for the early detection of e-health related adverse events	M Ong	NHMRC	\$299,564
Delivering safe and effective care for children in hospital with e-health systems	J Westbrook A Georgiou R Day T O'Brien J Karnon L Dalla-Pozza C Cowell L Li M Baysari G Ambler	NHMRC	\$1,082,806

GRANT	INVESTIGATORS	GRANTING ORGANISATION	GRANT AMOUNT
NHMRC (CONTINUED)			
Personally Controlled Electronic Health Records for young adults with communication disabilities: Charting the course for successful child to adult health service transition	B Hemsley S Balandin A Georgiou S Hill	NHMRC	\$396,853 (\$77,727 administered by AIHI)
Protecting the Public from Emerging Infectious Diseases (CREID)	E Coiera	NHMRC	\$2,500,000 (\$87,200 administered by AIHI)
Delivering safe and effective test result communication, management and follow-up	A Georgiou J Westbrook D Greenfield A Horvath D Wakefield L Li K Hillman	NHMRC	\$1,133,359
Improving quality use of medicines in residential aged care	L Pont	NHMRC	\$175,303
Centre for research excellence in e-health	E Coiera P Glasziou S-T Law V Sintchenko W Runciman F Magrabi B Gallego-Luxan	NHMRC	\$1,063,152
ARC			
The nature and potential adverse consequences of interruptions and multi-tasking in safety critical work environments	J Westbrook J Braithwaite W Dunsmuir	ARC	\$462,628
Development of an evaluation model for assessing the effectiveness of ICT to integrate services and improve service performance and client experience	J Westbrook A Georgiou	ARC	\$914,044

GRANT	INVESTIGATORS	GRANTING ORGANISATION	GRANT AMOUNT
OTHER			
A mechanism for enhancing mental fitness as a consequence of stressor exposure: Exploring the role of systematic reflection	M Crane F Rapport D Gucciadi D Boga L Sinclair	Army Research Scheme	\$72,432 (\$10,636 administered by AIHI)
Delivery and acceptance of literature scan to inform development of the third edition of 'Electronic Medication Management Systems: A guide to safe implementation'	M Baysari W Zheng L Richardson J Westbrook	Australian Commission on Safety and Quality in Health Care (ACSQHC)	\$44,865
Literature scan of electronic medication management systems in hospitals	M Baysari J Westbrook	Australian Commission on Safety and Quality in Health Care (ACSQHC)	\$49,351
Literature review and environmental scan on approaches to the review and investigation of health IT-related patient safety incidents	F Magrabi M Makeham P Hibbert	Australian Commission on Safety and Quality in Health Care (ACSQHC)	\$72,875
Downtime management best practices for clinical safety in digital health record systems	F Magrabi	Australian Commission on Safety and Quality in Health Care (ACSQHC)	\$37,950
Assessment of the National Inpatient Medication Chart (NIMC) GP eVersion	M Baysari M Raban A Tariq J Westbrook	Australian Commission on Safety and Quality in Health Care (ACSQHC)	\$64,737
From bedside to the bench: Bringing Macquarie University Hospital data to researchers	E Coiera	Australian National Data Service (ANDS)	\$160,000
Developing methods to improve systematic reviews using clinical trial registries	A Dunn	Boston Children's Hospital to Agency for Healthcare Research and Quality	\$14,969
The appropriateness of healthcare delivered to Australian Children: CareTrack Kids	J Braithwaite L White C Cowell A Jaffe W Runciman G Wheaton H Williams P Hibbert T Hunt N Hannaford	*BUPA	\$400,000
Analysis and optimisation of the St. John's Hospital sepsis alert pilot	R Borotkanics J Westbrook	The Clinical Excellence Commission (CEC)	\$47,060
Excellence in translational cancer research	N Taylor	CINSW Premier's Award	\$20,000
Scholarship	A O'Brien	CMCRC	\$12,500
Enhancing the quality of pathology test requesting and test result management in general practice	A Georgiou E McCaughey L Li M Makeham J Westbrook D Boyle	Commonwealth Department of Health	\$150,302

GRANT	INVESTIGATORS	GRANTING ORGANISATION	GRANT AMOUNT
OTHER (CONTINUED)			
Physician and staff administrative burden time research study	J Westbrook	Dartmouth-Hitchcock, USA	\$58,971
Transition between home, hospital and residential aged care for people with and without dementia	R Mitchell	Dementia Collaborative Research Centre	\$66,635
The impact of dementia on access to and outcomes from rehabilitation following fracture related hospitalisation	R Mitchell	Dementia Collaborative Research Centre	\$46,816
Video consultation capability project evaluation	A Georgiou	Healthdirect Australia	\$225,361
Real-time application of large-scale clinical hearing rehabilitation data	B Gallego Luxan	Hearing IRC Partner with National Acoustic Laboratories	\$27,500
Common clinical data analytics research platform	E Coiera	Macquarie University Hospital (MUH)	\$149,551
Preventing patient harm in hospitals: automatic real time detection of adverse drug events using datasets from electronic clinical information systems	L Li	Macquarie University	\$49,806
New methods for tracking the influence and geospatial clustering of vaccine misinformation	A Dunn	Macquarie University	\$19,607
Development of mobile app for Lymphoedema	A Lau	Department of Clinical Medicine, Macquarie University	\$14,000
Decision support tools for motor neurone disease multidisciplinary care	A Hogden X Cal J Caga D Greenfield	MND Victoria	\$96,000
GP & RACF Medication Concordance Study	M Makeham J Westbrook L Pont R Borotkanics M Raban H Douglas	National EHealth Transition Authority	\$199,874
Improving the way environmental health evidence is collected, synthesized and disseminated (\$60,000 USD)	G Tsafnat	NIEHS (NTP)	\$66,250
Population Health and Health Services Research Support Program Round 4	J Braithwaite (for AIHI)	NSW Ministry of Health	\$1,000,000
Evaluation of Point of Care Testing (PoCT)	A Georgiou L Li J Westbrook V Mumford	NSW Health Pathology	\$150,947
Unwarranted clinical variation following hospitalised injury in young people in NSW	R Mitchell	NSW Kids and Families, NSW Ministry of Health	\$69,076
Stocktake of data sources relevant to childhood injury in NSW	R Mitchell	NSW Kids and Families, NSW Ministry of Health	\$49,971

GRANT	INVESTIGATORS	GRANTING ORGANISATION	GRANT AMOUNT
OTHER (CONTINUED)			
An evidence review of electronic meal ordering systems	L Li M Prgomet J Li A Georgiou J Westbrook	The SAX Institute	\$50,000
Behaviour change for prevention and management for Lynch Syndrome	N Taylor M Chin R Williams	TCRN	\$100,000
Proof of Concept—Whether national data linkage can be conducted in Australia and cross-border health care use identified and the demonstration project is looking at hospitalised injury morbidity and mortality	R Mitchell	Telethon Institute PHRN	\$127,550
Emerging systems management safety review	F Magrabi	Telstra Corporation	\$10,875
ISU escalation plan evaluation	R Clay-Williams	Townsville Hospital and Health Service	\$23,375
Improving outcomes from high risk surgery	R Clay-Williams	Townsville Hospital and Health Service	\$20,000
Townsville Hospital and Health Service SPUR Training	R Clay-Williams	Townsville Hospital and Health Service	\$40,000
Evaluation of negotiating skills training	R Clay-Williams	Townsville Hospital and Health Service	\$10,000
PhD Awards for Improvement Science	N Taylor	University of Leeds	\$8,530
Hospitalised injury in NSW: A geographical comparison	R Mitchell	The University of Sydney	\$35,500
Trauma Journey Day of Difference	R Mitchell	The University of Sydney	\$31,999
Road Trauma Research	R Mitchell	UNSW Sydney	\$9,600

GRANTS AWARDED IN LATE 2016 WITH FUNDING IN 2017

GRANT	INVESTIGATORS	GRANTING AGENCY	GRANT AMOUNT
NHMRC			
Health System Sustainability	J Braithwaite E Coiera J Westbrook P Glasziou R Buchbinder A Scott J Karnon	NHMRC	\$10,749,751
New methods for tracking the influence and geospatial clustering of vaccine misinformation	A Dunn	NHMRC	\$476,648
Enabling personalised cohort studies from large repositories of clinical practice data	B Gallego Luxan	NHMRC	\$520,968

GRANT	INVESTIGATORS	GRANTING ORGANISATION	GRANT AMOUNT
NHMRC			
Preventing chronic disease in patients with low health literacy using e-health and teamwork in primary healthcare	N Stocks J Karnon D Nutbeam E Denney-Wilson M Noakes A Lau	NHMRC	\$1,216,370.50 (\$48,522 administered by AIHI)
OTHER			
Literature review and environmental scan on approaches to the review and investigation of health IT-related patient safety incidents	F Magrabi M Makeham P Hibbert	Australian Commission on Safety and Quality in Health Care (ACSQHC)	\$19,000
Hide and seek with hereditary cancer: improving detection of colorectal cancer patients with high risk of Lynch syndrome	N Taylor	Cancer Australia	\$591,241
Hide and seek with hereditary cancer: Translating evidence into practice to identify colorectal cancer patients with a high risk of Lynch syndrome	N Taylor	Cancer Institute NSW (CINSW)	\$598,251
Scientific information management and literature-based evaluations for the National Toxicology Program (NTP)	G Tsafnat	ICF Incorporated, LLC	\$142,933
Preventing patient harm from digital health through early detection	F Magrabi	Macquarie University	\$20,000
Personalised anticoagulant therapy for patients with acute coronary syndrome	T Wendling	Macquarie University	\$40,000
Genomics and Implementation Science	N Taylor C Gaff J Braithwaite	Macquarie University	\$200,000
Safety in complex systems: developing processes to improve productive safety in the Emergency Department	R Clay-Williams	NSW Ministry of Health	\$360,929
NSW Ministry of Health EMC Fellowship	R Mitchell	NSW Ministry of Health	\$345,000
Evaluate implementation of the Delirium Clinical Care Standard	V Mumford	NSW Ministry of Health	\$293,506
Redesigning patient experiences in health service navigation using digital technology	A Lau	NSW Ministry of Health	\$360,541
NSW Ministry of Health EMC Fellowship	E McCaughey	NSW Ministry of Health	\$295,311
Evaluation of a family support collaborative using a social network approach	J Long	UNSW Sydney	\$15,000

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