



# Program and Abstracts



**8-10 AUGUST**  
**GOLD COAST**



**31<sup>st</sup> Annual Scientific Meeting**  
Australian Cardiovascular Health and Rehabilitation Association

# INTEGRATED, INNOVATIVE RESUSCITATION AND ACUTE CARE FOR ALL



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Front cover photo by City of Gold Coast on Unsplash.

## **Acknowledgement of country:**

*We respectfully acknowledge that this meeting is being held on the traditional lands of the Danggan Balun People, the traditional custodians of the land on which we meet and pay our respects to their elder's past, present and emerging.*

# Welcome

Welcome to the 2022 Australian Cardiovascular Health and Rehabilitation Association (ACRA) Annual Scientific Meeting (ASM), as we celebrate the 31<sup>st</sup> ASM and our first in-person national event for 3 years. The COVID 19 pandemic has impacted every aspect of our lives and despite the ongoing challenges, the committee has worked tirelessly to bring together an exciting and relevant conference, with COVID 19 safety a priority.

Congratulations to the Organising and Scientific Committees, who only last November came together as a team from across all states in Australia and have gone above and beyond to present an innovative program with the emphasis on **“People, Purpose & Opportunity.”**

Cardiovascular disease treatments and services have faced unprecedented challenges over the past two and a half years, and this conference aims to recognise the implications and impacts now being faced by both patients and health professionals alike.

The conference program reflects on our collective sense of *purpose*, what drives us to make the world a better place; what we have learnt from the innovative, resilient, and adaptable *people* who work in this space; while inviting us to build and strengthen our relationships with each other; and consider the *opportunities* and challenges the last two years has brought to health care delivery for the future.

A heartfelt thank you to our international and national invited speakers who have been so obliging within the short time frame the committee has had to bring this program together.

A special acknowledgement to all our valued sponsors, who have shown their support to ACRA after a two-year break. As part of a new and exciting venture ACRA is partnering with our Platinum sponsor ZOLL to bring ongoing cardiovascular education to the ACRA membership over the next twelve months. We hope the trade exhibition will provide opportunities for delegates to interact face to face again with our sponsors.

Thank you for taking the opportunity to join us at this very special event. We strongly believe the ACRA ASM is more than just an occasion for the presentation of research findings, it is an opportunity for delegates to build networks, make new connections, share experiences, support each other and reconnect as a community.

**Carmel Bourne**  
ASM Convenor  
ACRA President Elect

**Bridget Abell**  
President  
ACRA Queensland

**Conference Convenor:** Carmel Bourne

### **Organising Committee**

Carmel Bourne (Chair & President Elect)  
Cate Ferry (Conference Administration)  
Dion Candelaria (Social Committee)  
Dr Bridget Abell  
Dr Angela Rao  
Dr Susie Cartledge  
Dr Celine Gallagher  
Helen McLean  
A/Professor Carolyn Astley National President

### **Scientific Committee**

Dr Bridget Abell (Co-chair)  
Dr Angela Rao (Co-chair)  
Dr Susie Cartledge  
Dr Katina Corones-Watkins  
Dr Jonathan Rawstorn  
Dr Amanda McGuire  
Dr Lisa Chen  
Professor Alun Jackson  
Dion Candelaria

### **Conference Host**



Australian Cardiovascular Health and Rehabilitation Association

[www.acra.net.au](http://www.acra.net.au)

### **Acknowledgments:**

Mulqueen Creative & Print  
*147-151 Allingham St, Golden Square Vic 3555*

SeaWorld Resort Conference and Events Team  
*Sea World Drive Main Beach Qld 4217*

Encore Events Technologies Pty Ltd  
*Unit 6/151 Robinson Rd, Geebung Qld 4034*

Great Ideas Gifts & Awards  
*126 Mollison St, Bendigo Vic 3555*

*ACRA Secretariat*  
The Association Specialists  
*PO Box 576, Crows Nest NSW 1585*

## Sponsors

The organising committee is grateful to the following organisations for the incredible support they have given to this meeting. The Sponsors' trade displays are located in the Veranda and will be open for the duration of the Meeting.

### Exhibitor Passport

Please show your support by visiting the sponsor exhibition spaces and completing the Exhibitor Passport to go in the draw to win a Garmin Forerunner 245 Music Watch.

### Platinum Sponsor:

The logo for ZOLL, featuring the word "ZOLL" in a large, bold, blue, sans-serif font. A registered trademark symbol (®) is located to the right of the final "L".

ZOLL® Medical Corporation, an Asahi Kasei company, develops and markets medical devices and software solutions that help advance emergency care and save lives, while increasing clinical and operational efficiencies.

With products for defibrillation and cardiac monitoring, circulation enhancement and CPR feedback, supersaturated oxygen therapy, data management, ventilation, and therapeutic temperature management, ZOLL provides a comprehensive set of technologies that help clinicians, EMS and fire professionals, as well as lay rescuers, improve patient outcomes in critical cardiopulmonary conditions. For more information, visit [www.zoll.com.au](http://www.zoll.com.au)

ZOLL is supporting ACRA as a Platinum Sponsor as well as providing deeper engagement and value through partnering with ACRA to provide its membership with twelve targeted clinical education webinars and 10 in person symposiums to be run in each state at urban and regional locations over the next twelve months. ZOLL will survey the ACRA membership and canvas the members for proposed topics that will present value to them. ZOLL will work in collaboration with ACRA EMC to finalise the 12 topics. The webinars and symposiums will be run by the ZOLL ANZ and international teams and will be educational, interactive, and action-based with demonstrations, Q & A, and discussions.

ZOLL is committed to working with ACRA's current educational bodies to further support and develop any existing programs where ZOLL contribution would be of value.

### Contact details:

Phone: 1800 605 555

Email: [info.aus@zoll.com](mailto:info.aus@zoll.com)

## Bronze Sponsors:



Cardiovascular Disease remains our nation's biggest killer and has a significant impact on life. Data from 2017 shows 1 in 4 deaths in Australia are caused by CVD<sup>1</sup>.

The Novartis vision is to bend the curve of life by ending premature death from CVD. Through management of cardiovascular risk factors and better outcomes in metabolic disease, we aspire to improve quality of life and lessen the physical, emotional and financial burdens of people living with these diseases, their families and the societies and health systems that serve them.

Novartis has an established and expanding presence in diseases covering the heart, kidney and metabolic system. In addition to Entresto® (sacubitril/valsartan) for chronic Heart Failure with reduced ejection fraction (HFrEF), Novartis has a growing pipeline of potentially first-in-class molecules addressing cardiovascular, metabolic and renal diseases.

Novartis is reimagining medicine to improve and extend people's lives. As a leading global medicines company, we use innovative science and digital technologies to create transformative treatments in areas of great medical need. In our quest to find new medicines, we consistently rank among the world's top companies investing in research and development. Novartis products reach nearly 800 million people globally and we are finding innovative ways to expand access to our latest treatments. About 108,000 people of more than 140 nationalities work at Novartis around the world. Find out more at

<https://www.novartis.com>.

*Carrington MJ, et. al. (2020) CODE RED: Overturning Australia's cholesterol complacency. Baker Heart and Diabetes Institute, Melbourne, Australia.*



About AstraZeneca Australia and New Zealand.

AstraZeneca Australia and New Zealand produces medicines in a range of therapeutic areas including Respiratory &

Autoimmunity, Cardiovascular & Metabolic Disease and Oncology.

AstraZeneca is the ninth largest pharmaceutical company operating in Australia and New Zealand. The company's manufacturing facility in North Ryde, Sydney is one of the largest manufacturers of medicines and is a key exporter to international markets, predominantly China.

AstraZeneca contributes significantly to clinical trials in Australia and New Zealand with over 50 current trials. AstraZeneca's innovative medicines are used by millions of patients worldwide.

For more information, please visit [www.astrazeneca.com.au](http://www.astrazeneca.com.au).

## Bronze Sponsors:

# AMGEN®

Amgen is committed to unlocking the potential of biology for patients suffering from serious illnesses by discovering, developing, manufacturing and delivering innovative human therapeutics. This

approach begins by using tools like advanced human genetics to unravel the complexities of disease and understand the fundamentals of human biology.

Amgen focuses on areas of high unmet medical need and leverages its expertise to strive for solutions that improve health outcomes and dramatically improve people's lives. A biotechnology pioneer since 1980, Amgen has grown to be one of the world's leading independent biotechnology companies, has reached millions of patients around the world and is developing a pipeline of medicines with breakaway potential.

For more information, visit [www.amgen.com.au](http://www.amgen.com.au)



NetOptAwario was established in 2015 by Finnish doctors and medical physics. The company's focus is on early detection of heart and brain related health problems by intelligent algorithms. We have placed quality as our key building block in our strategy. All our services are classified as medical devices. Awario platform has been

developed based over years of scientific research and work and clinical trials. The Awario platform is certified in Australia by TGA as class 11a Medical system.

NetOptAwario solutions are designed to reduce the workload of health care providers. The Solution enables remote patient monitoring or cost-effective atrial fibrillation screening programs for early detection and prevention of cardiac events and stroke. Today the attention is more and more shifting on data driven care plans and prevention. NetOptAwario solution represents the concrete example of the approach by helping detecting atrial fibrillation, which is one of the main health issues globally, touching the ageing population. NetOptAwario platform and services are real game changers in Australia, especially in areas with long distances.

NetOptAwario solution consists of one-channel ECG device, apps in mobile phone and AI in the cloud hosted in Australia. ECG measurements can be made by general practitioners, nurses or patient themselves and health care professionals can see the results from the portal. AI picks up the arrhythmia cases, so the cardiologists can focus only on them. ECG strip is suitable for diagnostic purposes. AI detects atrial fibrillation, ventricular extrasystoles, bradycardias and tachycardias.



## General Exhibitors:



CardiHab is a digital cardiac rehabilitation solution designed to support and connect clinicians with their patients to deliver a quality cardiac rehabilitation program

which is aligned with clinical guidelines and best practice.

The program is designed to support multiple models of care including traditional face-to-face, remote home-based, or a hybrid model of both. The flexibility offered by CardiHab's digital model has been proven to overcome barriers to participation by allowing patients to more easily fit their cardiac rehabilitation into their daily lives. A randomised control trial showed that CardiHab demonstrated significantly higher rates of uptake (80% vs 62%), adherence (94% vs 68%), and completion (80% vs 47%) than traditional hospital-based cardiac rehabilitation.

The CardiHab SmartCR app connects with our secure clinician portal which gives care team members access to daily patient data including heart rate, blood pressure, alcohol consumption, exercise and medications taken. CardiHab's clinical support team work collaboratively with clinicians to ensure the program is integrated into workflow, as well as providing ongoing training and support.

In clinical trials CardiHab has been proven to be just as effective as traditional hospital rehabilitation in improving physiological and psychological health outcomes and led to significantly improved health-related quality of life and reduction in both depression and anxiety.

To learn more about how CardiHab could help your model of cardiac rehabilitation go to [www.cardihab.com](http://www.cardihab.com).



Medibank has spent the last 45 years supporting millions of Australians. Over the past 4 decades, we've learnt a lot about what makes people happier and healthier.

We're not just a health insurer, we're a health company committed to helping all Australians manage their health and wellbeing.

### *Heart Health at Home*

A cardiac rehabilitation program that supports eligible members following a cardiac admission. The program is delivered remotely and maximises technology to include personalised weekly, one-on-one telephone and video consultations with an experienced health professional, such as a cardiac nurse for up to eight weeks. The program uses an evidence based mobile app, called Medibank Heart Health, powered by CardiHab. The program supports participants to make health lifestyle changes to reduce the risk of future heart issues. Find out more: [medibank.com.au/heart-health](http://medibank.com.au/heart-health)

## General Exhibitor:



Hydrix is a medical technology company specialising in cardiovascular-focused medical device innovation, development, and distribution. We work with local and international companies to launch unique products to improve care for patients in

Asia Pacific. Hydrix also makes select investments in early-stage, high potential medical technology companies helping them bring innovative medical devices to market sooner.

At ACRA 2022, we are proud to introduce The GUARDIAN, the world's first FDA approved, implantable, patient alerting system designed to warn of Acute Coronary Syndrome (ACS) including heart attacks. The GUARDIAN is indicated for use in patients who have had prior ACS events.

The GUARDIAN monitors the heart's electrical signal 24 hours a day, 7 days a week. It examines the intracardiac ECG for ST segment changes relative to the patient's normal ECG, which may indicate myocardial ischaemia. If it detects such a change, it alerts the patient to immediately seek medical care.

The GUARDIAN is currently under clinical trial in Australia and is not yet approved for commercial sale.

Web link: <https://www.hydrix.com/cardiovascular/the-guardian-healthcare-professionals>

## ACRA Partner:



The Heart Foundation is dedicated to making a real difference to the heart health of Australians. More than 620,000 Australians are living with heart disease and each year, approximately 54,000 Australians suffer a heart attack. Every day, our work includes:

- funding world-class cardiovascular research
- guiding health professionals on preventing and treating heart disease
- educating Australians about making healthy choices
- supporting people living with heart conditions
- advocating to government and industry to improve heart health in Australia.

The Heart Foundation has approximately 260 employees across Australia, supported by around 63,000 dedicated volunteers who assist us with our important work. You can learn more about our strategy, values, teams and history via <https://www.heartfoundation.org.au/>

# General Information

## **ACRA 2022 ASM Venue:**

Sea World Resort Conference Centre  
*Sea World Drive Main Beach Qld 4217*

## **Registration Desk:**

The registration desk will be located in the Sea World Resort Lobby\* on Monday and the Conference Centre Veranda (main entry) on Tuesday and Wednesday. Please visit the registration desk to register to be onsite for the conference, collect your name badge and conference material.

## **Opening hours:**

Monday 8th August: 1200 – 1800\*

Tuesday 9th August: 0730 – 1630

Wednesday 10th August 0730 – 1630

Please don't hesitate to see the staff at the registration desk or the committee members should you require assistance at any time during the meeting

## **Name badges:**

Each delegate, presenter and sponsor will be given a name badge at the registration desk. The badge will be the official pass to sessions, breaks, lunches and official social functions. It is necessary for delegates to wear their name badge at all times when onsite.

## **Disclaimer of Liability:**

The Organising Committee, including the ACRA 2022 meeting administration, will not accept liability for damages of any nature sustained by participants or their accompanying persons or loss or damage to their personal property as a result of the Meeting or related events

## **COVID 19 Information:**

ACRA require all delegates attending the 2022 ASM to be fully vaccinated against

COVID-19. All registered delegates must provide their COVID-19 Digital Vaccination Certificate, or proof of medical exemption, prior to attendance at the conference. If you are not fully vaccinated, or do not provide proof of vaccination or medical exemption, you will not be granted entry at the conference.

The health and safety of our delegates, exhibitors, sponsors, speakers and staff is paramount, so we are working closely with the venue to ensure we follow all government health regulations and hygiene protocols onsite at the conference.

*We encourage all attendees to wear a high-quality, well-fitted face mask while inside the conference rooms (e.g. N95), practice good hand, cough and sneeze hygiene, utilise hand sanitiser and maintain appropriate social distancing at all times.*

The conference organising committee is not liable for any delegate, exhibitor, or partner travel and/or accommodation costs associated with COVID-19. Personal insurance policies should be referred to in these circumstances.

## **Program changes:**

Some of our speakers are scheduled to travel internationally and some may have elevated health risks in the era of COVID-19. Consequently, the unknown circumstances at the time of the conference may mean that some speakers might be unable to appear in-person. We have however made arrangements for our speakers to present virtually if they are unable to join us in-person for the conference.

## Speaker Preparation Area

There will be a speaker preparation area in the C & E Boardroom, located on the 3rd floor of the Garden Wing, Sea World Resort – immediately adjacent to the Conference Centre. If required access cards are available at the registration desk.

The audio-visual technician will be located in the speaker preparation room from 0730 to 1200 on the 9th & 10th August.

Speakers are asked to check in with the AV technician no less than 2 hours prior to their scheduled presentation, to allow time for their AV materials to be uploaded and checked.

AV will also be onsite in Room 1 of the Conference Centre after 1200 and during catering breaks for urgent requests only.

## Car Parking:

Car parking is available and is located onsite at Sea World Resort at no cost.

## WIFI:

Complimentary Wi-Fi is available in the meeting rooms and exhibitor area. Access details are available at the registration desk.

## Hotel accounts:

All delegates are reminded to pay their hotel account prior to departure from the Sea World Resort. Each delegate is responsible for the payment of incidentals and room costs incurred as part of their stay.

## Smoking Policy:

There is a “no smoking” policy inside the Sea World Convention Centre and at all ACRA social events – including events being held outdoors.

## Membership:

If you are not an ACRA member and would like to join, information regarding membership is available at the registration desk. Join by accessing the QR code at the

registration desk. Membership is \$136.50. Joining at the conference waives the joining fee.

## Exhibition Passport

### *Win a Garmin Forerunner 245 Music Watch*

Each delegate will receive an exhibition passport with their registration pack.

The exhibitor passport encourages the delegates to visit each exhibitor and complete the passport. To enter the draw, delegates must submit their completed passport to the registration desk by 1530 on Wednesday 10 August. Sponsors and Exhibitors are not eligible to participate.

The prize will be drawn at 1650 hours on Wednesday 10 August.

**You MUST be present to win.**



## Solve CHD:

### ACRA 2022 ASM SILVER PARTNER

# SOLVE CHD

Solving the long-standing evidence-practice gap associated with cardiac rehabilitation and secondary prevention of coronary heart disease (SOLVE-CHD) is a 5-year-NHMRC Synergy Grant. We are made up of a multidisciplinary research team of researchers and clinicians with allied health, nursing, cardiology, public health, health economics and psychology backgrounds as well as our consumer advisors. Our goal is to transform post-discharge secondary prevention and reduce the burden of heart disease by decreasing deaths, hospitalisations and costs via a program of work that integrates data, technology, partnerships and capacity building.

SOLVE-CHD builds on previous and current efforts. In particular, the Australian Cardiac Rehabilitation Measurement Taskforce where there has been national consensus and development of quality indicators for cardiac rehabilitation. SOLVE-CHD will see delivery of interlinked service reform and research across 4 key activities - Transformative Data and Quality, New Research, Capacity Building, National Network. Since establishment, we have recruited 5 postdoctoral fellows, 5 HDR students, published over 70 papers, attracted \$8 million in NHMRC and MRFF funding and over 200 members joined our National Network.



In 2021, we also completed a National Data Capture project that provides a national picture of how cardiac rehabilitation services capture and store clinical information. This will allow us to work with jurisdictions to establish local processes and infrastructure

that enable improvements and better use of data. We look forward to continuing the work with our amazing colleagues and community members, supporting research that optimises access to and quality of secondary prevention.

For more information Join SOLVE-CHD Network

[www.solvechd.org.au](http://www.solvechd.org.au)

[SOLVE-CHD Annual Report 2021](#)

Connect with us  

Email: [solve-chd.info@sydney.edu.au](mailto:solve-chd.info@sydney.edu.au)

## Solve CHD Scholarship Recipients

**Ling Zhang:** *Postdoctoral Research Fellow, University of Sydney NSW*

**Dion Canderlaria:** *PhD Candidate, University of Sydney NSW*

**Sarah Gauci:** *Associate Research Fellow, Deakin University VIC*

**Victor Gallegos-Rejas:** *PhD Candidate, The University of Queensland QLD*

**Lisa Chen:** *Nurse Lecturer and Researcher, University of the Sunshine Coast QLD*

**Vicki Paul:** *Cardiac Rehabilitation Clinical Nurse Consultant, Nepean Hospital NSW*

**Katrien Janssen:** *Transition Care Programme Physiotherapist, St Vincent's Hospital Melbourne VIC*

**Sherrie Chung:** *Honours Research Support, University of Sydney NSW*

**Gemma Wilson:** *Clinical Research Coordinator, University of Adelaide SA*

**Hannah Mayr:** *Research Dietitian, Metro South Hospital and Health Service QLD*

**Minke Hoekstra:** *Health Services Lead, Diabetes Tasmania TAS*

**Phoebe Pogorzelski:** *Clinical Nurse Coordinator Cardiac Rehabilitation Program, Queensland Health, Rural Community QLD*

# Speaker Profiles

## Invited Speakers



# ZOLL®

### **Dr Kelly McCants MD**

International Keynote Speaker

Sponsored by ZOLL

*Medical Director of Advanced Heart Failure  
Norton's HealthCare*

*Associate Professor/Adjunct Faculty  
Department of Medicine, Morehouse School of Medicine*

Kelly C. McCants, M.D., is the acting executive director of the newly formed Norton Healthcare Institute for Health Equity and serves as Norton Healthcare's executive director of advanced heart failure. Dr. McCants has a true passion for addressing health disparities by identifying and removing obstacles that prevent people in underserved areas from receiving health care.

Growing up in Jacksonville, Florida, and Tuscaloosa, Alabama, Dr. McCants drew inspiration from his mother and older brother and his aptitude from his step-father. He is the first physician and only the fourth college graduate among 54 members of his extended family. His brother, now a police captain, and his mother, who went back to school at age 40, were the first and second college graduates.

Dr. McCants attended Tennessee State University, Nashville, before going to Meharry Medical College, also in Nashville. He completed his internship, residency and fellowship at the University of Louisville. He returned to Louisville after a stint at Atlanta, Georgia's Piedmont Hospital, where he was director of cardiac transplantation.

## **Professor Julie Redfern**



*National Keynote Speaker & Workshop Presenter*

*Professor of Public Health and Research Academic Director*

*(Researcher Development Output and Impact)*

*Faculty of Medicine and Health, University of Sydney*

Professor Julie Redfern is a practicing Physiotherapist and Professorial Fellow at The George Institute for Global Health. She has been a Chief Investigator on research grants totalling \$25M in the past 5 years and has published over 200 manuscripts and 4 book chapters. Professor Redfern currently holds a NHMRC Investigator Grant Level 2 for which she won the NHMRC Elizabeth Blackburn award for Health Services. She recently won the NSW Woman of Excellence Award and a Vice Chancellor's award for leadership and mentoring. Julie is PI of the NHMRC Synergy grant known as SOLVE-CHD and has over 15 years of experience developing, testing and implementing scalable strategies to close evidence-practice gaps and improve health outcomes for people with cardiovascular disease. She has been invited to give the prestigious Alan Goble Oration at this year's ACRA ASM.

## **Professor Lis Neubeck**



*International Plenary Speaker & Workshop Presenter*

*Head of the Centre for Cardiovascular Health*

*School of Health and Social Care Edinburgh Napier University*

Professor Lis Neubeck is cardiac nurse with over 25 years of experience in a range of cardiac in-patient and out-patient settings. She is Professor of Cardiovascular Health in the School of Health and Social Care and Head of the Centre for Cardiovascular Health at Edinburgh Napier University. Her research focuses on innovative solutions to secondary prevention of cardiovascular disease, identification and management of atrial fibrillation, and use of digital health to improve access to health care. Lis is the NHS Research Scotland Cardiovascular

Clinical Network Lead and current President of the Association of Cardiovascular Nursing and Allied Professionals of the European Society of Cardiology.

## **Adj Professor Tuomas Rissanen**



*International Plenary Speaker (Virtual)*

*Sponsored by OptNet*

*Head of Cardiology, Heart Center,  
Central Hospital of North Karelia, Joensuu, Finland*

Dr. Tuomas Rissanen received his MD and PhD degrees in 2006 in Kuopio University, Finland. He is a docent of Molecular Medicine in the University of Eastern Finland (2007) and graduated as a specialist in cardiology in 2012 in the University of Eastern Finland. Tuomas Rissanen's clinical skills include interventional cardiology (PCI, Cardiac Imaging, PPM Therapy, CRT, TAVI & ECMO). He is currently the Head of Heart Center in North Karelia Central Hospital, Joensuu, Finland.

Tuomas Rissanen has 70 peer-reviewed publications in international journals. His current research interest includes clinical studies for arrhythmia detection using novel technologies as well as clinical trials in interventional cardiology. He was nominated as the Head of Science in Heart2Save Ltd., a technology company developing mobile-ECG solutions, in 2019.

Dr. Tuomas Rissanen has been an active member of the Finnish Cardiac Society; holding the positions of Secretary from 2016 and President of the Working Group from 2018 to 2020 and is currently Head of Science, Heart2Save Ltd (from 2019). He was part of the organizing team for the national sessions in the EuroPCR congress in Paris during 2016-2022.

## **A/Professor Alison Beauchamp**



*National Plenary Speaker and Workshop Presenter*

*Senior Research Fellow*

*NHMRC Emerging Leadership Fellow*

*School of Rural Health, Monash University Warragul, Victoria*

Alison is a researcher at Monash Rural Health, and has a background as a cardiac rehab nurse. Her current research focuses on health literacy for improving healthcare access and equity, especially for people with CVD. Alison holds a NHMRC Emerging Leader Fellowship, which aims to firstly explore the relationship between health literacy and outcomes post-AMI, and then to co-design health literacy interventions to improve patients' engagement with cardiac secondary prevention.



## **Greg Page, AM**



*Patient and National Plenary Speaker*

Greg Page is probably best-known for his work as a founding member of the children's entertainment group, The Wiggles. Greg and his 3 Wiggly friends created The Wiggles in 1991 and it was their passion for educating children through music which gave birth to the global phenomenon that is still going strong for over 30 years. As the Yellow Wiggle for more than 16 years, Greg performed thousands of concerts to millions of children all over the world. In 2006 however, Greg retired from performing with The Wiggles due to a health condition known as dysautonomia.

In January 2020, Greg suffered a sudden cardiac arrest during a performance by the Original Wiggles, for a charity fundraiser for bushfire relief during the Australian summer. At the end of the concert, Greg collapsed at the side of the stage, and CPR was performed on him for 13 minutes by 4 bystanders. A defibrillator was brought to the scene, and Greg was shocked 2 times before his heart restarted just as emergency medical services arrived on the scene.

Greg is a passionate and an avid advocate of CPR, AED's and heart health awareness for the community. As the CEO and Founder of Heart of the Nation Australia, he spends his time now working toward achieving better outcomes for people who experience sudden cardiac arrest.

## **A/Professor Andre le Gerche MBBS, PhD, FRACP, FCSANZ, FESC**



*National Plenary Speaker and Workshop Presenter*

*Head, Clinical Research Domain at Baker Heart and Diabetes Institute. Director, National Centre for Sports Cardiology*

*Cardiologist, St Vincent's Hospital Melbourne*

*Future Leader Fellow, National Heart Foundation*

André completed a PhD at St Vincent's / University of Melbourne and 4 years of post-doctoral research at the University Hospital of Leuven, Belgium. His research and clinical work focuses on the effect of exercise on the human heart. He studies the range of health from severe heart and lung disease to elite athletes.

André leads a young team of researchers in Sports Cardiology and heads the National Centre for Sports Cardiology based at St Vincent's Hospital. He has pioneered novel imaging techniques including exercise cardiac magnetic resonance imaging and contrast echocardiography. He has more than 200 peer-review publications and text-book chapters and is regularly invited to present at all major international cardiology conferences.

## Glen Turner



*National Plenary Speaker*

*Communications and Health & Wellbeing Lead  
Parkrun Asia Pacific*

Glen Turner is the Communications and Health & Wellbeing Lead for parkrun in the Asia Pacific. parkrun is a not-for-profit organisation that supports thousands of communities around the world to deliver a free community event every Saturday morning. People can walk or run the traffic-free 5km course, help out as a volunteer, or simply spectate and socialise. There's no time limit, everyone is welcome, and each parkrun is a permanent intervention.

Collaborating with health practitioners to facilitate the signposting of patients, practice staff and practitioners themselves to parkrun events is having a significant impact on reaching people who have the most to gain from regular opportunities for physical activity, volunteering and socialising, and parkrun is committed to scaling its successful social prescribing model more widely.

## Dr Graham Exelby



*National Plenary Speaker*

Graduated from University of Queensland in 1973, working in Southport then Charters Towers, Texas (Qld) and Mt Isa before returning to Gold Coast in 1978 at Mermaid Beach. Established Mermaid Central Medical Clinic with partners Jack Ashwin and Ross Jackson (retired) in 1991. His primary areas of interest are

POTS, Long Covid, and their co-morbidities.

Current research areas:

POTS and Long Covid and their co-morbidities- pathogenesis and management  
DNA and disease association with Dr Valerio Vittone (molecular biologist)  
Control of autonomic instability with David Haynes (Kiiko acupuncture)  
Use of carotid intimal thickness scanning in vascular disease  
Electrophysiology studies in autonomic instability with Sr Ricci-Lee Parker.

## Workshop Presenters

### Professor Robyn Gallagher



*Professor of Nursing and Northern Precinct Academic Director,  
Nursing & Pharmacy*

*Susan Wakil School of Nursing and Midwifery (Sydney Nursing  
School), Faculty of Medicine and Health and Charles Perkins  
Centre, The University of Sydney*

Professor Robyn Gallagher is Professor of Nursing at the University of Sydney where she leads a team researching secondary prevention of heart disease. Her focus includes contemporary health technology, cardiac rehabilitation, quality and cognitive impairment. Robyn has received national and international awards for her research and her student supervision. She is a Fellow of the American Heart Association, American Academy of Nursing and the European Society of Cardiology. She has published more than 180 peer-reviewed papers and 14 book chapters. Robyn is current Chair of the International Council of Cardiovascular Prevention and Rehabilitation and immediate past President of the Australian Cardiovascular Health and Rehabilitation Association, and Cardiovascular Nursing Council of the Cardiac Society of Australia and New Zealand and Associate Editor of the European Journal of Cardiovascular Nursing.

### Dr Jonathan Rawstorn



*Heart Foundation Postdoctoral Fellow*

*Institute for Physical Activity and Nutrition, School of Exercise  
and Nutrition Sciences*

*Deakin University Melbourne*

Dr Jonathan Rawstorn is a research fellow at Deakin University's Institute for Physical Activity and Nutrition. Drawing on exercise, behavioural, computer, and implementation science, his research explores the use of digital technologies for improving access to exercise and lifestyle interventions for chronic disease management. Jonathan has a particular interest in using remote monitoring technologies to personalise exercise prescription and coaching during telerehabilitation.

## **Dr Rita Hwang**



*Adjunct Fellow*

*Centre for Health Services Research, University of Queensland*

Rita has been a physiotherapist with the Heart Recovery Service, at the Princess Alexandra Hospital in Brisbane, since its inception in 2006. She has a special interest in exercise training in patients with heart failure and has played a role in many research projects within that service. Rita has completed her PhD in 2017 on heart failure telerehabilitation.

## **A/Professor Rosemary Higgins**



*Health Psychologist and Family Therapist*

*Chief Psychologist and Training Consultant Australian Centre for Heart Health*

A/Professor Rosemary Higgins is Fellow of the Australian Psychological Society College of Health Psychologists. She works as a Cardiac Health Psychologist and a Family Therapist in private practice and with the Australian Centre for Heart Health. In this work, Rosemary specializes in delivering psychological treatment to patients after a cardiac event. In 2020 Rosemary was awarded the ACRA Alan Goble distinguished service award for extraordinary service to cardiac rehabilitation, the only psychologist to be awarded this honour. Rosemary holds the positions of Honorary Associate Professor at Deakin University, Senior Research Fellow at the University of Melbourne, and is a Guest Lecturer at Deakin University and the Institute of Social Neurosciences. For more than twenty years, Rosemary has been involved in developing cardiac rehabilitation services, delivering cardiac rehabilitation content to patients, supporting cardiac rehabilitation clinicians to develop best practice programs and representing the field on state and national executive councils. She is past President of the VACR and has served on the ACRA executive for many years. Alongside training and direct patient care, Rosemary also works as a researcher and with over 60 peer reviewed publications including a book chapter and has been awarded almost 2 million dollars in research funding.

# Social Functions

**Name Badges:** It is a conference requirement for delegates to wear their name badge at all times to access social functions.

## Welcome reception:

The Welcome Reception officially commences the 2022 ACRA ASM. This event will be a fantastic opportunity to get to know fellow delegates and listen to the presentation of the Moderated Poster presentations over canapes and drinks.

**Venue:** Sunset Deck

Sea World Resort

**Date:** Monday 8 August 2022

**Time:** 1800 – 2030

Moderated Posters presentation –  
1900

**Cost:** Included in all full registration  
tickets

Additional tickets \$100 per person

For students and day-only  
registration see registration desk

**Dress:** Smart Casual

## Morning activities:

### Morning walk along the Gold Coast Broadwater:

Wednesday 10 August 0700 to 0745

Meet in Sea World Resort foyer at 0650.

### Early Career & HDR Student coffee catchup:

Wednesday 10 August 0830

Meet in Sea World Foyer for a friendly chat and to build networks: **BYO coffee**

## Gala Dinner:

Join us at the ACRA 2022 Gala Dinner: It's a wonderful opportunity to catch up with friends old and new. Have a fun night dressed in your best 80's Glam. There are prizes for the best dressed, the Gala dance off and an 80's themed photo booth – to create funny memories.

**Venue:** The Plaza & Dolphin Beach

Sea World Marine Park

**Date:** Wednesday 10 August 2022

**Time:** 1900 – 2300 hours

1845 – Meet in Sea World Resort  
Foyer.

**Cost:** Included in all full registration  
tickets.

Additional tickets \$150 per person



# Program

Scan the QR code below for an online, interactive version on the program which includes all plenary, abstract, workshop, poster, presenter, and scheduling information.



Monday 8th August 2022	
12.00	Registration Desk opens (Registration Desk located in Sea World Lobby)
13:00-15:30	<b>Pre-conference Workshop (Sponsored by ZOLL): Cardiac arrest and resuscitation</b> Introduction and outline of workshop (Penelope Lane) Chain of Survival solutions to improving outcomes (Dr Sunny Ho) Resuscitation Guidelines Update – the latest research (Tanya Halbert) High Performance CPR Challenge (ZOLL Team) Post-performance debriefing (Tanya Halbert) Q & A and close (ZOLL Team) Presidential Room 
15:30-16:00	<b>Afternoon Tea (workshop attendees only)</b> Presidential Room
16:00-17:00	<b>ACRA Member's Forum</b> Presidential Room Speaker: ACRA President, Carolyn Astley
18:00-20:30	<b>SOCIAL: Welcome Reception</b> Sunset Deck Moderated Posters at 1900


## ASM FEEDBACK

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## Tuesday 9th August 2022

07:00	Registration Desk opens. The Registration Desk is located inside the main entry of the Sea World Conference Centre Veranda.
08:30-08:40	<b>ASM Official Opening - Welcome to Country</b> Conference Hall
08:40-08:45	<b>ASM Official Opening - Welcome from the ASM Convenor and ACRA-Queensland President</b> Conference Hall Carmel Bourne & Dr Bridget Abell
08:45-09:10	<b>ASM Official Opening: "The Missing Links in the Chain of Survival" (Greg Page's Story)</b> Conference Hall Invited Speaker: Greg Page, AM
09:10-09:55	<b>Plenary: The Alan Goble Oration "Learning from the past to move to the future of cardiac rehabilitation"</b> Conference Hall Invited Speaker: Professor Julie Redfern
09:55-10:10	<b>Alan Goble Award Presentation</b> Conference Hall A/Professor Carolyn Astley National President ACRA
10:15-10:45	<b>Plenary: Social prescribing- an opportunity for Cardiac Rehabilitation?</b> Conference Hall Invited Speaker: Glen Turner
10:45-11:15	<b>Morning Tea, Poster Viewing and Trade Exhibition</b> Veranda

11:15-11:20	<b>Research Prize - Introduction</b> Conference Hall Abstract Session Sponsored by Australian Centre for Heart Health 		
11:20-12:20	<b>Research Prize</b> Conference Hall  <b>Evidence of abnormal exercise response in individuals with high fatigue after COVID-19 infection</b> <i>Dr Erin Howden</i>  <b>A consumer co-designed, self-delivered, Avatar-based patient discharge education application improves acute coronary syndrome (ACS) patient knowledge</b> <i>Dr Ling Zhang</i>  <b>Barriers and enablers to collecting Australian national cardiac rehabilitation quality indicators: a national survey.</b> <i>Dr Susie Cartledge</i>  <b>Research to real-world: key considerations for implementing cardiac telerehabilitation in clinical practice</b> <i>Dr Jonathan Rawstorn</i>		
12:20-12:50	<b>International Plenary: What lessons can Australia learn from Cardiac Rehabilitation globally?</b> Conference Hall Invited Speaker: Professor Lis Neubeck		
12:50-13:50	<b>Lunch, Posters and Trade Display: 1315-1340 Poster Presentations</b> Veranda		
	<b>Conference Room 3</b>	<b>Conference Room 2</b>	<b>Conference Room 1</b>
13:50-14:50	<b>Workshop: How to integrate those recovering from Spontaneous Coronary Artery Dissection into CR</b> Workshop: Professor Lis Neubeck	<b>Workshop: Practical considerations for prescribing exercise via telehealth</b> Workshop: Dr Jonathan Rawstorn & Dr Rita Hwang	<b>SOLVE-CHD Workshop: Using electronic data for Quality Improvement (QI) in Cardiac Rehabilitation</b> Workshop: Professor Julie Redfern & Professor Robyn Gallagher



	Conference Room 3	Conference Room 2	Conference Room 1
15:00-16:00	<p><b>Concurrent Abstract Sessions: Exercise, physical activity and diet</b></p> <p>Inter-individual responses to a change in heart-rate variability triangular-index following different exercise volumes in people with metabolic syndrome: a randomised study <i>Dr Joyce Ramos</i></p> <p>What is the relationship between physical activity, sitting time and cardiovascular risk factors in people with heart disease over 12-months after starting cardiac rehabilitation? <i>A/Professor Nicole Freene</i></p> <p>Behaviour change techniques in cardiovascular disease smartphone apps to improve physical activity: Systematic review and meta-regression <i>Kacie Patterson</i></p> <p>Diet moderates the relationship between arterial stiffness and cognition <i>Ms. Sarah Gauci</i></p>	<p><b>Concurrent Abstract Sessions: Psychosocial interventions and considerations</b></p> <p>Integrating MEditation inTO heaRt disease (The MENTOR Study): A phase II randomised controlled feasibility pilot study <i>Dr Angela Rao</i></p> <p>Understanding the psychosocial impacts of spontaneous coronary artery dissection: A qualitative study. <i>Dr Barbara Murphy</i></p> <p>Survival benefits of participation in the Beating Heart Problems program after a cardiac event: a 14-year follow-up study <i>Dr Barbara Murphy</i></p> <p>Assisting cardiac patients to get 'Back on Track' in their emotional and behavioural recovery: A randomised controlled trial of an online self-management program. <i>Dr Michelle Rogerson</i></p>	<p><b>Concurrent Abstract Sessions: Telehealth and digitally enabled Cardiac Rehabilitation</b></p> <p>COVID-19 impact on telehealth use across Australian cardiac rehabilitation services: results from a national survey <i>Dr Emma Thomas</i></p> <p>Key features in telehealth-delivered cardiac rehabilitation required to optimise secondary prevention outcomes, participation and satisfaction: A realist review. <i>Dr Victor Gallegos-Rejas</i></p> <p>The Medibank Heart Health at Home Program (MHH@H): Evaluation of a digital health enabled cardiac rehabilitation program for coronary heart disease <i>Mr Justin Braver &amp; Katrina McGilchrist</i></p> <p>Towards long-term telehealth use within cardiac and pulmonary rehabilitation services: recommendations for sustaining new models of care <i>Dr Emma Thomas</i></p>

16:00-16:20	<b>Afternoon Tea, Poster Viewing and Trade Exhibition</b> Veranda
16:20-17:00	<b>Plenary: Returning to exercise post-COVID for cardiac patients</b> Conference Hall Invited Speaker: A/Professor Andre La Gerche
19:00-23:00	<b>Gala Dinner</b> Sea World Plaza Meet in the Sea World Resort Foyer at <b>6:45 pm</b> ; ready to make your way to Dolphin Beach for a special performance of the Dolphin Affinity Show. Have a fun night dressed in your best 80's Glam... with prizes for the best dressed, a Gala dance off and an 80's themed photo booth to create funny memories!

## ACRA Partner



The Australian Centre for Heart Health (ACHH) brings together internationally recognised research, our highly successful Cardiac Workforce Development Program and our innovative Cardiac Wellbeing Program, in a combination unique in Australia.

Our focus on secondary prevention is driven by the fact that one third of all hospitalised cases of heart attack are repeat events and that much of the risk of these repeat events can be reduced through attending cardiac rehabilitation or behaviour change programs and by addressing psychological issues such as unresolved depression and anxiety, and social issues such as isolation.

A centre of excellence in cardiac psychology, ACHH is a not for profit, independent Medical Research Institute and a National Health & Medical Research Council (NH&MRC) administering organisation. The centre is proud of its affiliations with the University of Melbourne through the Faculty of Medicine, Dentistry and Health Sciences and with Deakin University through the Faculty of Health.

Website: [www.australianhearthealth.org.au](http://www.australianhearthealth.org.au)

## ASM FEEDBACK

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Wednesday 10th August 2022	
07:30	Registration Desk opens.
07:00-07:45	<b>Morning walk along the Broadwater (Heart Foundation)</b>
08:30-08:50	<b>Early Career and HDR Student Coffee Catchup</b>
08:55-09:00	<b>Welcome to Day Two</b> Conference Hall Carmel Bourne & Dr Bridget Abell
09:00-09:40	<b>International Plenary: Myocardial Recovery and the Impact on Healthcare Disparities</b> Sponsored by Zoll Conference Hall Invited Speaker: Dr Kelly McCants
09:40-09:45	<b>Clinical Practice Prize - Introduction</b> Sponsored by Australian Centre for Heart Health Abstract
09:45-10:45	<b>Clinical Practice Prize</b> Conference Hall  A blueprint for the continuation of comprehensive cardiac rehabilitation during COVID-19 pandemic. An Australian single hospital experience. <i>Mr Robert Zecchin</i>  Implementation of a system-wide, data-driven, web-based tool to improve cardiac rehabilitation in Queensland <i>Samara Phillips</i>  Patient-led care: How often do patients want to connect during a telehealth Cardiac Rehabilitation program? <i>Tess Hawkins</i>  Black Summer was just the beginning: Adaptations and outcomes for a small rural cardiopulmonary rehabilitation service facing disasters locally and globally. <i>Ms Fiona Miller</i>
10:50-11:20	<b>Morning Tea, Poster Viewing and Trade Exhibition</b> Veranda
11:20-11:50	<b>Plenary: Health Literacy in Cardiac Rehabilitation</b> Conference Hall Invited Speaker: A/Professor Alison Beauchamp



11:50-11:55	<p><b>Clinical Excellence Showcase - Introduction</b>          Conference Hall          Abstract</p>
11:55-12:35	<p><b>Clinical Excellence Showcase</b>          Conference Hall</p> <p><b>Complex Chronic Disease Team- Virtual Care through the pandemic and beyond</b>  <i>Erin James</i></p> <p><b>Cardiac Care for Staff Repair</b>  <i>Kimberley Rainer</i></p> <p><b>binGO MOVE: The healthy way to play bingo</b>  <i>Nicole Sutcliffe &amp; Lisa Sammartino</i></p> <p><b>Case Study - when something bad turns into something good! How a patient's life-threatening arrhythmia causes process change in Cardiac Rehab.</b>  <i>Jo-Anne Lee</i></p> <p><b>Drowning in data? What we've learnt from collecting four years of outpatient cardiopulmonary rehabilitation data in a small rural Victorian program.</b>  <i>Fiona Miller</i></p>
12:35-13:35	<p><b>Lunch, Poster Viewing and Trade Exhibition</b>          Veranda</p>
12:45	<p><b>ACRA Annual General Meeting</b>          Members Only          Conference Hall</p>

	Conference Room 3	Conference Room 2	Conference Room 1
13:35-14:20	<p><b>Concurrent Abstract Sessions: Implementing practice change</b></p> <p>Would you embrace or resist implementation of sleep screening guidelines in cardiac rehabilitation? A qualitative study <i>Mr Michael Le Grande</i></p> <p>“We work in silos”: Multidisciplinary clinicians’ perspectives of dietary service provision and advice for coronary heart disease and type 2 diabetes <i>Dr Hannah Mayr</i></p> <p>Re-engineering the Cardiology ward round to improve cardiac rehabilitation referral <i>Mrs Anita Lynn</i></p>	<p><b>Concurrent Abstract Sessions: Patient-level considerations and measures</b></p> <p>Ethnic minorities have worse mortality, morbidity, and cardiovascular risk factor outcomes from cardiac rehabilitation: A systematic review and meta-analysis <i>Sarah Duggan</i></p> <p>Immigrant’s knowledge of their coronary heart disease diagnosis, treatments, and lifestyle prevention: evaluation of a simple valid scale in Mandarin language <i>Miss Wendan Shi</i></p> <p>Testing the validity and reliability of the Caregiver-Patient Activation Measure in a population of informal caregivers of people with chronic illness. <i>Ms Katherine Carleton-Eagleton</i></p>	<p><b>Concurrent Abstract Sessions: Patient engagement and co-design</b></p> <p>Influencing engagement in rehabilitation for people with Chronic Heart Failure: Opportunities from a qualitative study. <i>Miss Katie Palmer</i></p> <p>Use of co-design methodology in the development of cardiovascular disease secondary prevention interventions: A systematic review <i>Dr Jason Talevski</i></p> <p>“What’s next?” Co-designing a transition of care intervention to increase the uptake of cardiac rehabilitation. <i>Dr Susie Cartledge</i></p>

	Conference Room 3	Conference Room 2	Conference Room 1
14:30-15:30	<b>Workshop: Trauma focussed care for patients with cardiac related trauma</b> Workshop: A/Professor Rosemary Higgins	<b>Workshop: Co-design for Quality Improvement</b> Workshop: A/Professor Alison Beauchamp	<b>Workshop: Sports Cardiology</b> Workshop: A/Professor Andre La Gerche
15:30-15:50	<b>Afternoon Tea, Poster Viewing and Trade Exhibition</b> Veranda		
15:50-16:15	<b>Plenary: Postural orthostatic tachycardia syndrome (POTS) and implications for Cardiac Rehabilitation</b> Conference Hall Invited Speaker: Dr Graham Exelby		
16:15-16:40	<b>Virtual International Plenary: Detection of atrial fibrillation and other arrhythmias using novel hand-held devices</b> Sponsored by NetOptAwario Conference Hall Invited Speaker: Adj Professor Tuomas Rissanen		
16:40-16:50	<b>ACRA 2023 Promotion</b> Conference Hall		
16:50-17:00	<b>Announcement of Prize Winners (including lucky door prizes)</b> Conference Hall		
17:00-17:05	<b>Conference Close</b> Conference Hall		

## ASM FEEDBACK

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# Research Prize Abstracts

## Evidence of abnormal exercise response in individuals with high fatigue after COVID-19 infection

Dr Erin Howden, Imogen Wallace, Dr Steve Foulkes, A/Professor Andre La Gerche

**Background.** Fatigue is common and debilitating symptom post-COVID-19 infection. Impaired cardiorespiratory fitness may contribute to fatigue, thus we sought to evaluate this relationship in post-COVID-19.

**Methods.** Individuals with a history of COVID-19 infection (n=27; 18 female; age 41 [21-65years]; duration since infection 480 [274-730days]), underwent cardiopulmonary exercise testing to quantify cardiorespiratory fitness (VO<sub>2</sub>peak, % of predicted VO<sub>2</sub>), ventilatory efficiency (V<sub>e</sub>/VCO<sub>2</sub> slope), hemodynamic response (heart rate [HR] peak, ΔHR, peak O<sub>2</sub>pulse and trajectory, Δ systolic blood pressure [SBP]). Fatigue was measured by Chalders Fatigue Scale (CFQ), with severe fatigue identified as a score ≥6. Recruitment is ongoing.

**Results.** The mean CFQ was 22.1±5.3 with severe fatigue reported in 87% of participants at the time of testing. Most participants had reduced VO<sub>2</sub>peak (63%; <85% of age predicted VO<sub>2</sub>peak). The high fatigue group had an elevated V<sub>e</sub>/VCO<sub>2</sub> slope and lower peak O<sub>2</sub> pulse compared to low fatigue (Table). V<sub>e</sub>/VCO<sub>2</sub> slope was ≥32 in 65% of the high fatigue group vs 17% in low, and 67% had abnormal O<sub>2</sub>pulse trajectory (0% in low). By contrast, VO<sub>2</sub>peak and the haemodynamic response to exercise were similar in the two groups (Table below).

**Conclusion.** High fatigue post COVID-19 is associated with impaired ventilatory efficiency and augmentation of oxygen pulse (surrogate measure of stroke volume) during exercise.

	VO <sub>2</sub> peak, ml/kg/min	V <sub>e</sub> /VCO <sub>2</sub> slope	peak HR, bpm	ΔHR, bpm	Δ blood pressure, mmHg	O <sub>2</sub> pulse, ml
High	27.7±6.6	31.2±4.8	185±22	91±22	56±19	11.5±2.3
Low	27.6±5.3	27.4±4.9*	167±19	88± 8	59±9	14.6± 2.3*

## A consumer co-designed, self-delivered, Avatar-based patient discharge education application improves acute coronary syndrome (ACS) patient knowledge

Dr Ling Zhang, Professor Robyn Gallagher, Dr Huiyun Du, Tracey Barry, Jon Foote, Professor Robyn Clark

**Background:** High 30-day rehospitalisation rates among ACS patients have been attributed to poor disease knowledge and self-care, especially in those with low literacy and health literacy. Traditional patient education methods fail to address these issues.

**Purpose:** We aimed to develop and evaluate a consumer co-designed discharge education application (app) and test its effectiveness on disease knowledge and acceptability.

**Methods:** Based on the Heart Foundation Six Steps to Cardiac Recovery the app underwent a rigorous development process with the substantial engagement of consumers (Figure 1). It was piloted in patients with unstable angina or a non-STEMI episode. Disease knowledge, ACS responses were assessed at baseline, followed by first use and one month later. Patients and cardiac nurses rated the acceptability.

**Results:** Among 22 Participants; 81.8% were male, mean age 59.7 years; 45.5% had not completed high school and 25% had marginal health literacy.

Significant improvements were observed for overall disease knowledge at one month ( $p=.003$ ) and for the exercise and nutrition domains at discharge ( $p=.029$ ;  $p<.001$ ) and one month ( $p=.02$ ;  $p=.003$ ) (Figure 2). Significant improvements were also observed for ACS knowledge and beliefs at discharge ( $p=.008$ ;  $p=.038$ ) and one month ( $p<.001$ ;  $p=.025$ ) when ACS response attitude was also significantly improved at one month ( $p=.036$ ). The app had very high acceptability, was described as 'clear, simple, easy to understand, stimulating and interactive, better than a live person'.

**Conclusion:** This novel ACS education app has the potential to provide discharge education for ACS patients even for patients with low education and health literacy.

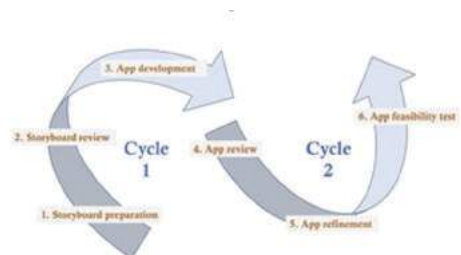
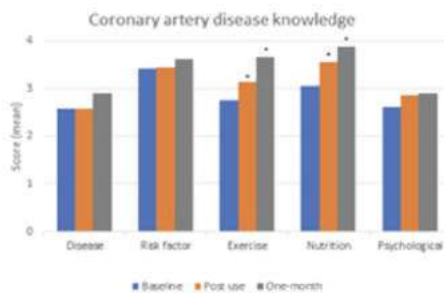


Figure 1: App development cycles





## Barriers and enablers to collecting Australian national cardiac rehabilitation quality indicators: a national survey.

Dr Susie Cartledge, Professor Robyn Gallagher, Dr Clara Zwack, Dr Matthew Hollings, Dr Ling Zhang, Dr Nikky Gordon, Mr Robert Zecchin, Professor Adrienne O'Neil, Ms Rosy Tirimacco, Ms Samara Phillips, A/Professor Carolyn Astley, Professor Tom Briffa, Professor Julie Redfern

**Background:** Australian cardiac rehabilitation (CR) delivery is guided by published core components and program content guidelines. Assessing and monitoring quality of CR programs is critical to patient outcomes. However, there is currently minimal state-wide, and no national quality assessment. We aimed to evaluate barriers and enablers to using national CR quality indicators (QI).

**Methods:** Eligible programs were identified through publicly-available lists (via Heart Foundation and Australian Cardiovascular Health and Rehabilitation Association). One representative from each program was invited to complete the 30-question online survey. A descriptive analysis with Chi-Squared tests of association was conducted.

**Results:** 320 completed responses were received (81% response rate) of which 314 had completed the QI section. All states and territories were represented.

Programs were typically public (77%), located in metropolitan (46%) or rural towns (40%) and enrolled >100 patients annually (53%). The majority (86%) of respondents were aware of the CR QIs, regarded these as very useful/useful (61%) and had downloaded the indicators (66%). Under half (44%) had implemented strategies to collect QIs, with more (11%) services planning to. Lack of time, staff, resources and COVID19 disruptions were the main barriers to data collection. Services enrolling >200 patients/year (compared to those enrolling  $\leq$ 200) were more likely to have implemented QI data collection strategies ( $p < 0.001$ ).

**Conclusion:** While the national CR QIs are known and well-received by the majority working in CR, collection of QI data is not occurring in small-mid sized services. This may be exacerbated by current under resourcing of programs and COVID19 disruptions.

## Research to real-world: key considerations for implementing cardiac telerehabilitation in clinical practice

Dr Jonathan Rawstorn, Mr Narayan Subedi, Dr Harriet Koorts, Mr Luke Evans, Dr Susie Cartledge, Dr Matthew Wallen, Professor Fergal Grace, A/Professor Shariful Islam, Professor Ralph Maddison

**Background:** Numerous access-related barriers limit participation in centre-based cardiac rehabilitation (CR); particularly in regional areas and during COVID-19 lockdown. Telerehabilitation can overcome access barriers and growing research demonstrates effectiveness and safety, but translation into practice is limited. We prospectively identified facilitators and barriers to implementing cardiac telerehabilitation across four healthcare partners in western Victoria.

**Methods:** Three stakeholder groups (consumers [adults with coronary heart disease]; CR practitioners; health service managers) were recruited via 1 metropolitan and 3 inner-regional Victorian healthcare organisations. Consumers completed 1-on-1 interviews. Practitioners and managers completed separate focus group discussions at each study site. Conversations were guided by a combined implementation science framework, transcribed, and underwent inductive thematic analysis.

**Results:** 16 consumers (female=5; 61.1±10.0 y), 20 practitioners (female=14;

36.6±11.8 y; primarily exercise physiologists, physiotherapists, nurses), and 11 providers (female=7; 46.2±9.2 y; primarily CR coordinators, managers, service directors) participated between February–October 2020.

Six emergent themes—Resources (6 sub-themes), Change Management (6 sub-themes), Knowledge (4 sub-themes), Targeting (3 sub-themes), Regulation (2 sub-themes), Design (2 sub-themes)—comprised perceived facilitators and barriers that spanned all domains of the theoretical framework, varied slightly between stakeholder groups, and showed some interdependence. Perceptions were largely consistent across study sites, but the value proposition may be site-specific.

**Conclusions:** Implementing cardiac telerehabilitation requires a comprehensive strategy to address multifactorial determinants of success, explicitly define how telerehabilitation will add value to existing cardiac services, and leverage synergies with current practice

# Clinical Practice Prize Abstracts

## A blueprint for the continuation of comprehensive cardiac rehabilitation during COVID-19 pandemic. An Australian single hospital experience.

Mr Robert Zecchin, Ms Cheryl Dickson, Mrs Julie Hungerford, Miss Jennifer Leow, Ms Gail Lindsay, Mrs Reet Mander, Mrs Inga Saliba, Professor Robert Denniss

**Background:** COVID-19 has disrupted cardiac rehabilitation (CR) services around the world with majority of CR programs discontinuing or reducing services. Alternative models such as TeleHealth have been adopted in place of face to face (F2F) CR with supervised exercise. There is a paucity of published data on the continuation of F2F CR using COVID safe precautions.

**Methods:** A retrospective database audit identified CR participation rates during the pre-COVID (2018/2019) and in-COVID (2020/2021) years. Socio-demographic status and program outcome measures were analysed.

**Results:** We included 1623 consecutive patients (pre-COVID n=760, in-COVID n=863). No differences were observed in age, sex, wait times and completion rates between the two periods. No COVID-19 cases or cross infections occurred in CR during the in-COVID period. Comprehensive

F2F CR delivery was maintained for 85% of participants during the in-COVID period, increased participation rate in patients with heart failure (CCF;  $p=0.02$ ) and a decreased rate for elective PCI ( $p=0.03$ ) were also seen. A significant increase in F2F utilising home walking ( $p<0.0001$ ) and a reduction in F2F utilising supervised exercise ( $p<0.0001$ ) was observed. During in-COVID, a TeleHealth modality was introduced and contributed to 6% of total modalities provided.

**Conclusions:** During the COVID-19 pandemic our CR program adhered to state health orders, recorded zero transmissions, maintained face to face services, and increased CR uptake only partially due to the introduction of TeleHealth. Our blueprint for the successful continuation of CR in-COVID involves having expert nursing management, medical CR champions, dedicated CR gym, and flexible patient-centric program modalities.

## Implementation of a system-wide, data-driven, web-based tool to improve cardiac rehabilitation in Queensland

Samara Phillips, William Vollbon, Kylie Kidby

**Background:** A dedicated cardiac rehabilitation (CR) module was developed in collaboration with clinicians and project manager within the Queensland Cardiac Outcomes Registry (QCOR) and implemented in Queensland public CR programs in July 2017. The aim was to increase referral to, uptake and quality of CR in Queensland. The Queensland Government and an incentivised quality improvement payment (QIP) scheme supported development and implementation of this initiative. The CR module reflects workflow practices, and can provide all assessment documentation, service-level data and produces automated quarterly performance and clinical indicator reports.

**Methods:** CR clinicians prospectively enter patient data electronically via the QCOR web portal and contribute to an annual report.

**Outcomes:** Since 2016, the use of QCOR across Queensland CR public sites has

grown and is used consistently in 95% of CR programs (1). Analysis of clinical indicators suggest the timeliness of referrals have remained consistent (93%), the timeliness of patient assessments (62%) appear to have declined slightly at the same time as the incentive funding was removed (July 2018), however has been sustained since (1). The timeliness of the healthcare journey for clients has remained consistent (58%)(1).

**Conclusion:** Queensland has demonstrated how a strategic, statewide approach can be utilised to establish a data registry and quality improvement program, to effectively track and improve the quality of CR. The success and benefits of the initiative are reflected in the high rates of clinical and health service participation.

[1]Department of Health Queensland. Queensland Cardiac Outcomes Registry 2020 Annual Report.: Queensland Government, 2021.

## Patient-led care: How often do patients want to connect during a telehealth Cardiac Rehabilitation program?

Tess Hawkins, Elizabeth Turner, Alison Parker, Wendy Mullooly

**Background:** Telehealth has become a valuable delivery mode of cardiac rehabilitation (CR). Typically, traditional CR programs have a set program structure, however, telehealth offers greater flexibility for patients and clinicians. We investigated how a patient-led telehealth CR program, where patients choose their own contact, compared to a traditional CR model.

**Methods:** In 2021 at Sutherland Hospital, 143 patients enrolled in a telehealth CR program and attended >1 session. CR clinicians conducted sessions via videoconference and/or telephone. Patients dictated their session frequency and program discharge. Program duration was calculated from assessment date to discharge date, and session frequency was calculated by program duration divided by session number. A traditional CR model was defined as 2 sessions per week for 6-12 weeks.

**Outcomes:** Average program length was similar for both the patient-led telehealth CR program (9.1 weeks) and the traditional CR model (6-12 weeks). However, there was significant difference in number of sessions and contact frequency. In the telehealth CR program patients participated in an average of 5.1 sessions with 1 session per 12.7 days, compared to 12-24 sessions with 1 session per 3.5 days.

**Implications:** Program duration appears to be more pertinent to patients than number of sessions during CR. Telehealth offers a feasible option for unstructured patient-led CR programs.

**Conclusions:** Program duration is similar for a patient-led telehealth CR program and traditional CR programs, however, patients choose less frequent contact. Further comparison is needed to determine if health-related outcomes are comparable between patient-led and traditionally structured CR program models.

## Black Summer was just the beginning: Adaptations and outcomes for a small rural cardiopulmonary rehabilitation service facing disasters locally and globally.

Ms Fiona Miller, Mrs Roslyn Bloomer, Mrs Julie Blake, Mrs Leeah Cooper, Mrs Maree Jenkin

In late 2019, the catastrophic Black Summer bushfires created a state of disaster in our area with significant economic impact and many evacuations (including the PACE team). PACE already offered a flexible model of care (group/individual/home); along with cloud-based information systems we rapidly transitioned to a virtual service by phone/email/post. As the smoke cleared the pandemic arrived and PACE moved to full telehealth without a break in service.

### Key adaptations:

- Structured, diagnosis based, telephone health behaviour change interventions
- Outcome measure modification from centre-based to home-based
- Implementation of videoconferencing and web-based pre-recorded videos for group and individual education and exercise
- Hard copy resource packages

### Challenges:

- Economic impact of fires on participants/ families creating stress and competing priorities, magnified by COVID restrictions
- Scarcity of home health monitoring equipment
- mobile phone black spots and limited NBN (95% of the shire is satellite dependent)
- daily changes in Government restrictions impacting on planned services
- telehealth accessibility issues (no computer, poor hearing, unfamiliarity)

We examined pre and post-fires/COVID data to see if client outcomes were adversely affected by these changes with surprising findings.

**Conclusion:** PACE service delivery adaptations did not adversely impact key client outcomes and in some measures actually resulted in improved outcomes.

	Pre-fire/ COVID	Post-fire/ COVID
AQoL mean improvement (raw score)	4.21	5.96
AQoL % clients any improvement	65.96%	69.23%
6MWD mean improvement (m)	36.61m	45.59m
6MWD % clients >=50m improvement	42%	41.9%
Improvement in physical activity participation (MET-min/wk)	609.18	1107.66
MMRC dyspnoea score % clients any improvement	26.21%	37.04%

# Clinical Excellence Showcase

## **Complex Chronic Disease Team- Virtual Care through the pandemic and beyond**

Erin James, Kristin Mainey, Maura Barnden, Marie Steer

## **Cardiac Care for Staff Repair**

Kimberley Rainer, Jo-Anne Harvey

## **binGO MOVE: The healthy way to play bingo**

Nicole Sutcliffe, Lisa Sammartino

## **Case Study - when something bad turns into something good! How a patient's life-threatening arrhythmia causes process change in Cardiac Rehab.**

Jo-Anne Lee

## **Drowning in data? What we've learnt from collecting four years of outpatient cardiopulmonary rehabilitation data in a small rural Victorian program.**

Fiona Miller, Leeah Cooper, Julie Blake, Roslyn Bloomer, Maree Jenkin

# Moderated Posters

## **Understanding the complexity, severity and predictors of cardiac distress**

Dr Michelle Rogerson, Dr Barbara Murphy, Professor John Amerena, Professor Julian Smith, Dr Valerie Hoover, Dr Marlies Alvarenga, Dr Rosemary Higgins, Mr Michael Le Grande, Professor Chantal Ski, Professor David Thompson, Professor Alun Jackson

## **Integrating meditation into heart disease care: a mixed-methods meta-synthesis**

Dr Angela Rao, A/Professor Michelle DiGiacomo, Professor Louise D. Hickman, Professor Jane. L Phillips

## **Assessing the quality of cardiac rehabilitation programs by measuring adherence to the Australian quality indicators.**

A/Professor Carolyn Astley, Dr Alline Beleigoli, A/Professor Rosanna Tavella, Professor Jeroen Hendriks, Dr Celine Gallagher, Ms Rosy Tirimacco, Ms Gemma Wilson, Ms Tracey Barry, Professor Robyn Clark

## **The patient experience of Spontaneous Coronary Artery Dissection (SCAD): an integrative review**

Ms Elizabeth Turner, Dr Serra Ivynian, A/Professor Michelle DiGiacomo

## Static Posters

### **Cognitive function and the relationship with health literacy and secondary prevention in acute coronary syndrome patients at early discharge: a prospective observational study**

Ms Emma Zhao, Dr Nicole Lowre, Professor Sharon Naismith, Professor Geoffrey Tofler, Professor Adrian Bauman, Professor Robyn Gallagher

### **The impact of a smartphone enabled application on participation in cardiac rehabilitation and understanding barriers to success: a comparative cohort study.**

Dr John Rivers, Carla Smith, Dr Ian Smith, Dr James Cameron

### **Evaluation of the impact of a nurse-led multidisciplinary rehabilitation program for individuals living with chronic heart failure.**

Ms Glynis Cacavas, Ms Jo Kevill

### **Ethnic minority outcomes from cardiac rehabilitation in Australia: A secondary analysis of cross-state and territory audit**

Sarah Duggan, Dr Ling Zhang, Dion Candelaria, Professor Robyn Gallagher

### **Chinese Immigrants' coronary heart disease knowledge levels: total and domain**

Miss Wendan Shi, Mrs Judith Fethney, Dr Ling Zhang, Dr Gabriela Melo Ghisi, Professor Robyn Gallagher

### **A Mother's Heart Beats for Two: Exploring the Current Provision of Evidence-based Practice and Clinical Outcomes for Women with Cardiovascular Disease during Pregnancy**

Mrs Sandra Millington, Associate Professor Margaret Arstall, Professor Gustaaf Dekker, Ms Suzanne Edwards, Professor Robyn Clark

### **A rapid review of interventions to meet the support needs of informal caregivers of patients with heart failure.**

Ms Katherine Carleton-Eagleton, Professor Iain Walker, Dr Nicole Freene, Professor Diane Gibson, Professor Stuart Semple

### **Management and rehabilitation post median sternotomy in Queensland**

Samara Phillips, Alison Mahoney, Dr Julie Adsett, Professor Doa El-Ansary

### **Development and implementation of a co- designed, web based cardiac rehabilitation program for cardiac patients living in rural and remote areas**

Ms Katie Nesbitt, Dr Alline Beleigoli, Dr Stephanie Champion, Dr Lemlem Gebremichael, Dr Huiyun Du Mr Jonathon Foote, Ms Rosy Tirimacco, Professor Robyn Clark

### **Improving access to cardiac rehabilitation (Heart: Road to Health) in rural and remote areas of Australia: How well are we doing?**

Ms Patricia Field, Professor Richard Franklin, A/Professor Ruth Barker, Professor Ian Ring, A/Professor Karla Canuto, Professor Peter Leggat

### **Supporting the psychosocial needs of Australia's cardiac patients: Profile of and outcomes for clients attending the Cardiac Counselling Clinic during 2020 – 2021**

Ms Hema Navaratnam, Dr Barbara Murphy, Dr Rosemary Higgins, Dr Mirella Di Benedetto, Mr Justin Kelly, Professor Alun Jackson



## **Reasons for non-attendance at a cardiac rehabilitation assessment, in a population group that would benefit most**

Samara Phillips.

## **Effects of Tai Chi on Psychological Stress and Cardiovascular Function in People with Coronary Heart Disease and/or Hypertension: A Randomised Controlled Trial**

Dr Guoyan Yang, Professor Dennis Chang, Ms Xufang Wu, Ms Nan Gu, Mr Wenyuan Li, Professor Jianping Liu, Mr Paul Fahey, Dr Nerida Klupp, Professor Alan Bensoussan, Professor Hosen Kiat

## **The emotional heartaches of living with Chronic Heart Failure: exploring the lived experience.**

Miss Katie Palmer, A/Professor Julia Morphet, A/Professor Kelly-Ann Bowles

## **Women's health-related quality of life outcomes from exercise based cardiac rehabilitation can be understood when their personal perspectives are accounted**

Miss Sherrie Chung, Mr Dion Candelaria, Ms Ann Kirknes, Ms Maura Farrell, Ms Kellie Roach, Ms Christine Bruntsch, Ms Helen Glinatsi, Ms Jayne Roberts, Ms Louise Gooley, Ms Ashlee Fletcher, Professor Robyn Gallagher

## **Impact of COVID19 pandemic on cardiac rehabilitation delivery in Australia: a national survey.**

Dr Susie Cartledge, Dr Bridget Abell, Dr Barbara Murphy, Dr Jan Cameron, Professor Robyn Gallagher, A/Professor Carolyn Astley

## **Cardiac rehabilitation referral for percutaneous coronary intervention patients in Victoria, Australia – gender gap has closed but high-risk patients still miss out.**

Dr Susie Cartledge, Professor Andrea Driscoll, Dr Diem Dinh, Dr Emma Thomas, Ms Angela Brennan, Professor Danny Liew, A/Professor Jeffrey Lefkovijs, A/Professor Dion Stub

## **Improving cardiac rehabilitation referral, enrolment, and completion in Australia: a qualitative study of contextual influences and commonly used strategies**

Dr Bridget Abell, Dr Victoria McCreanor, Associate Professor Sanjeewa Kularatna, Professor Steven McPhail, Professor Will Parsonage

## **Participants' experience on usability, acceptability, and satisfaction of a Smartphone Cardiac Rehabilitation, Assisted Self-Management intervention: a qualitative study**

Mr Narayan Subedi, Dr Jonathan Rawstorn, Dr Harriet Koorts, Dr Lan Gao, Professor Ralph Maddison

## **Feasibility and efficacy of telehealth versus gym-based rehabilitation in breast cancer survivors undergoing cardiotoxic chemotherapy: Secondary analysis of a randomised trial**

Dr Stephen Foulkes, Ms Lauren Burnham, A/Professor Steve Fraser, Professor Robin Daly, A/Professor Yoland Antil, A/Professor Andre La Gerche, Dr Erin Howden

## **Delivery, barriers, and enablers to patient participation in inpatient cardiac rehabilitation following cardiac surgery: An integrative review**

Mrs Dima Nasrawi, Dr Sharon Latimer, Associate Professor Deb Massey, Professor Brigid Gillespie

## **Mobile health solution to support patients with heart failure: exploring design and user acceptance**

Jane Li, Marlien Varnfield, Kaley Butten, Maricel Roxas, Estelle Beevors, Haunnah Rheault, Scott McKenzie

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# Notes

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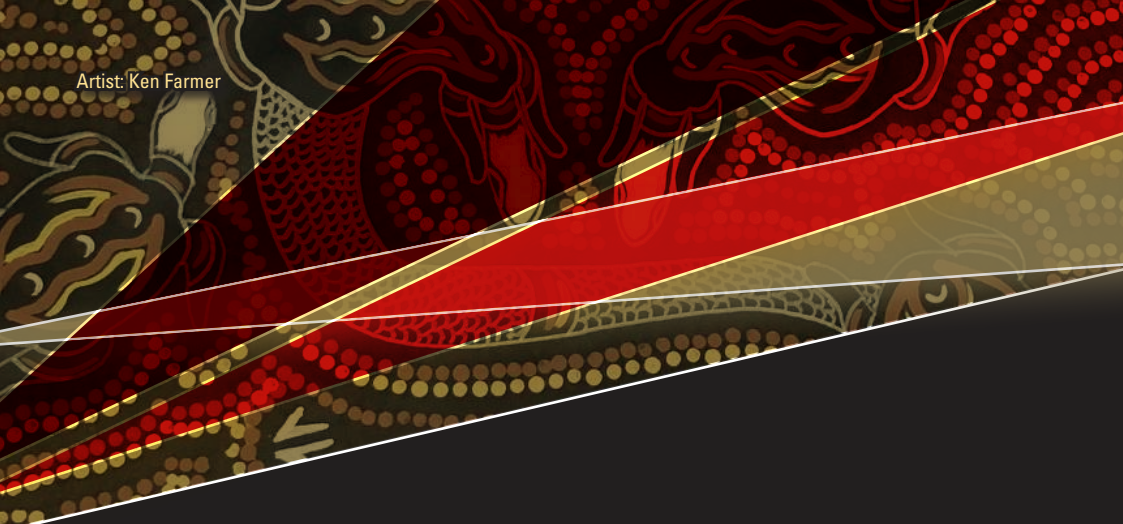
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Artist: Ken Farmer



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