

Heart 2 Heart

Newsletter of the Christchurch Heart Institute



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HEART INSTITUTE
Rangahau Manawa o Ōtautahi



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Welcome to the November issue of Heart 2 Heart. Since 2002 over 7,500 members of the Christchurch community have donated their time and blood samples to our studies. The willingness of people to volunteer as study participants facilitates ground breaking life-saving research to take place right here in Christchurch. We are grateful for your support in providing samples and data, that through research conducted by the Christchurch Heart Institute has a positive impact on patients with heart disease both in our local community and throughout the world. If you consented for your sample to be used in other approved studies, your sample may also have contributed to research in other vital areas such as cancer.

In this issue we look at online resources developed for cardiac rehabilitation; and a new test developed in Christchurch that measures a heart hormone recently identified as an important marker of cardiac failure.

We also announce the new \$5M HRC Programme Grant the Christchurch Heart Institute was awarded which allows us to continue our research until 2019 and extends our continuous HRC Programme status out to beyond 25 years. It allows the investigation of multiple unmet needs in the assessment and management of acute and chronic heart failure and working in partnership with the CDHB, ADHB and the University of New South Wales.

We would also like to congratulate a number of our staff including Drs Anna Pilbrow and Barry Palmer, who were awarded Heart Foundation grants in the July 2014 funding round; you can read more about their research in this newsletter.

We hope you have a safe and relaxing holiday break.

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Professor Mark Richards
Director
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Māori medical researchers of the future get to test-drive the job

Māori secondary school students interested in becoming medical researchers visited the Christchurch Heart Institute laboratory recently.

They had the opportunity to gain hands-on experience of different laboratory tasks and talked to active researchers about science careers.

The visit was part of the Kia Ora Hauroa Māori health workforce development programme, aimed at getting more young Māori into health careers.

The University of Otago, Christchurch has a Māori/Indigenous Health Institute (MIHI) which promotes and fosters Māori-focussed teaching and research.



Professor Mark Richards



Professor Gary Nicholls

New online resource for cardiac rehabilitation

Meet Frank Gelder and his wife Melissa. In 2008 Frank suffered a heart attack at 4am in the morning after presenting with an unusual series of symptoms. A snapshot of Frank's life at the time of his heart event reads like a "Heart Attack Waiting to Happen". Frank was a smoker, often binge drank, was overweight and had high levels of stress in his professional life.

To those in the medical and heart health fields we know this is a recipe for heartache (pun intended). Much to the relief of Melissa, other family members, Frank received lifesaving medical attention and his road to recovery began.

Like many people who suffer from heart events, Frank was encouraged to join in cardiac rehabilitation programmes.

"The cardiac rehabilitation programme was really beneficial. I got a lot out of it and found the information and support available hugely influenced my commitment to recovery and ultimately the success of my recovery as well" says Frank.

While Frank had a positive experience with his recovery, research tells us that fewer than half of all those eligible will attend cardiac rehabilitation and one third of attendees will fail to complete the course. This is an alarming statistic when coupled with the fact that 50% of heart attack victims will go on to suffer subsequent events.

The Heart Foundation has embarked on a special project to eliminate access factors to cardiac rehabilitation by bringing rehabilitation programmes and support online.

Gina Williams, Heart Foundation's Secondary Prevention Manager says the Heart Foundation has been working for the better part of a year to create an online cardiac rehabilitation website.

"We're excited to be offering this world leading site. It is designed to be an online toolbox of advice, support and information, says Gina.

"By bringing rehab online we aim to engage and encourage a larger group of people to successfully complete their cardiac rehabilitation."

The yet-to-be-named site is scheduled for launch early next year and will make access to cardiac rehabilitation much simpler. We look forward to bringing you an update of the launch early next year.

And a final word from Franks wife Melissa, "Medical intervention saved my husband but cardiac rehabilitation has led to lifestyle changes that will mean he will be with us for the long term. It's my wish that every family affected by a heart disease has this opportunity as well."



Frank and Melissa Gelder

Early career award distinction

Up and coming Christchurch Heart Institute researcher Dr Anna Pilbrow was one of five latest recipients of the prestigious University of Otago Early Career Awards for Distinction in Research.

Announcing the latest recipients, University of Otago Deputy Vice-Chancellor Professor Richard Blaikie congratulated the researchers on their impressive records of achievement at such as early stage of their research careers.

The Early Career Awards for Distinction in Research were introduced in 2004 to recognise and nurture the University's most promising early career researchers.

"The award recipients are exemplary early-career researchers making energetic and fresh contributions to the University's research effort and culture. Their notable achievements firmly place them to become Otago's research leaders of tomorrow" Professor Blaikie says.

Recipients also become members of the University's O-Zone group of early-to-mid-career researchers. This group undertakes activities to promote interdisciplinary thinking and collaborations and to present positive, clear, innovative and independent voices for research within the University and beyond.

Dr Anna Pilbrow is a Health Research Council Sir Charles Hercus Fellow working with the Christchurch Heart Institute, and has recently been awarded a Heart Foundation Senior Research Fellowship. She completed her PhD with the Christchurch Heart Institute at the University of Otago, Christchurch in 2006 and undertook postdoctoral training at the Salk Institute, La Jolla, California, USA from 2008 – 2010.

Since taking up her current position, she has focussed her research on understanding the mechanisms underlying our genetic susceptibility to heart disease, with a particular interest in identifying molecules circulating in our blood which may signal early stages of heart disease prior to the onset of symptoms.



Dr Anna Pilbrow

Heart Foundation welcomes new Medical Director

In August 2014, the Heart Foundation announced the appointment of new Medical Director Associate Professor Gerard Deulin.

"Dr Deulin is an accomplished clinical academic cardiologist who has been a highly effective regional and national leader in heart-health care," says the retiring Medical Director Professor Norman Sharpe.

Dr Deulin has invested in a wide range of collaborative basic and clinical research work which has culminated in the award of both an Honorary Associate Professorship and a Doctorate in Medicine from the University of Auckland in 2013.

He was Chair of the New Zealand branch of the Cardiac Society of Australia and New Zealand in 2010 - 2011.

Dr Deulin has been both Clinical Unit Leader of Cardiology and Cardiothoracic Services at Waikato Hospital and also Clinical Leader of the Midland Cardiac Network. In the latter role he has led the development of improved quality standards and improved equity of access for heart care in the Midland region.

Recently Dr Deulin took over leadership of the National Cardiac Network. The Network has already ensured more timely and equitable access for surgical services regionally and nationally and is now supporting a broader continuum approach to heart-health care. He will relinquish this position when he takes up the role of Medical Director with the Heart Foundation.



Dr Gerard Deulin

General Heart Statistics

- ♥ **Cardiovascular disease** (heart, stroke and blood vessel disease) is still the **leading cause of death** in New Zealand, accounting for **30%** of deaths annually ^[1]
- ♥ Every **90 minutes** a New Zealander **dies** from coronary **heart disease**
- ♥ Many of these deaths are **premature** and **preventable**
- ♥ **Obesity** is a **risk factor** for a number of diseases including coronary **heart disease, stroke, diabetes, high blood pressure, osteoarthritis** and some **cancers** ^[2]
- ♥ **One in twenty** adults have been diagnosed with **coronary heart disease**. That's **176,000** adults ^[2]
- ♥ About **one million** adults are now **obese** in **New Zealand** ^[2]



Women's Heart Disease

Globally, cardiovascular disease, often thought to be a 'male' problem, is the number one killer of women. ^[4]

The picture of women's heart health in New Zealand:

In 2011, **2600** women **died** of heart disease in New Zealand ^[1]

That's more than **7** women **a day** – or about **50** each **week**



Sources:

- [1] Ministry of Health (2014) Mortality and Demographic data 2011. Wellington: Ministry of Health
- [2] Ministry of Health (2013) NZ Health Survey: Annual update 2012-2013. Wellington: Ministry of Health.
- [3] Ministry of Health (2009) Implementing the ABC approach for Smoking Cessation. Framework and Work Programme. Wellington: Ministry of Health. <http://www.moh.govt.nz/moh.nsf/indexmh/cardiovascularisease>
- [4] World Health Organisation (2013) Women's health fact sheet N334: World Health Organisation.

Heart Failure: markers and management

Professor Mark Richards and the Christchurch Heart Institute have been awarded a \$5M HRC Programme Grant looking at the markers and management of heart failure. This new grant is the highest level of funding provided by the HRC and extends the Christchurch Heart Institute's continuous HRC Programme status out to beyond 25 years. It allows the investigation of multiple unmet needs in the assessment and management of acute and chronic heart failure and works in partnership with the CDHB, ADHB and the University of New South Wales.



Professor Mark Richards

This combined effort includes a range of disciplines including Cardiologists, Nephrologists and Emergency Room doctors, to nurses, technicians, scientists and statisticians and aims to help reduce the rate of early re-admission to hospital after a stay for the treatment of heart failure.

The programme aims to discover and use new tests for kidney trouble in heart failure, which is a frequent and serious complication of heart failure, along with discovering and utilising new tests for pneumonia in heart failure, another common and frequent complication of heart failure that needs to be detected early to get best result for the patient.

It also continues the Christchurch Heart Institute's national and international linkages in medical and basic science research in NZ, Australia, Singapore, UK, Europe.

Christchurch heart disease test proven to save lives

A strategy for heart failure treatment developed at the Christchurch Heart Institute (CHI) more than a decade ago, has now shown to help reduce patient deaths by more than a third compared to usual care.

The strategy of natriuretic peptide (NP) guided treatment of heart failure uses circulating blood levels of NT-proBNP, a heart hormone first identified by CHI researchers to guide medication dosing.

This strategy was first tested in Christchurch but has since been emulated in more than 10 other studies internationally using variations of the initial protocol.

CHI researchers recently led a collaboration with researchers from Europe and the United States to combine data from nearly all the studies that have tested NP guided treatment of heart failure. Combining data from multiple studies (including two from Christchurch) provided the most powerful assessment of this strategy and showed that amongst younger patients (aged less than 75 years), NP guided treatment reduced deaths by more than 30% over a period of 18 months or more. The strategy also reduced heart failure and cardiovascular hospitalisation by 20% regardless of age.

The findings from this collaborative meta-analysis were recently published in the European Heart Journal, a leading cardiovascular journal. Internationally heart failure guidelines now support the use of NT-proBNP levels to monitor heart failure and guide medication and dosing.

The development of the NT-proBNP test and the NP-guided treatment strategy were first pioneered by the CHI in studies funded by the Heart Foundation and the Health Research Council of NZ.



Heart attack symptoms

Chest pain that lasts for more than a few minutes MAY be a sign of a heart attack.

- ♥ The pain may initially go
- ♥ Be in one or both arms (more commonly the left)
- ♥ Go into your neck, back, jaw, stomach and abdomen
- ♥ The pain may feel like squeezing/pressing/tightness/fullness

What to do:

- ♥ Even if you are not sure it's a heart attack – get it checked out!
- ♥ Do NOT delay, call 111 as soon as possible
- ♥ Minutes matter!
- ♥ Fast action can save lives – maybe your own

Know your numbers

Find out the age of your heart by visiting www.knowyournumbers.co.nz

it only takes a few minutes and could change your life.

Did you know?



16 New Zealanders **die** from heart disease **every day**

New Zealand has one of the **highest** rates of **survival** from **Heart Disease** in the world

How you can help save lives!

Many Cantabrians have already helped us in our work by taking part in our community and hospital based research projects.

You can also help us cut the number of deaths from heart disease by donating to the Christchurch Heart Institute as follows:

- **Text 'CHI' to 5464, make a \$10 donation**
- **Visit www.otago.ac.nz/chcheart**
- **Talk to us about making a regular payment or bequest**
- **Sending your donation to CHI, P O Box 4345, Christchurch**

100% of your donation will be used to support specific research projects, to purchase critical pieces of equipment or to fund fellowships for young researchers early in their careers. All donations over \$5 are tax deductible.

For more information on how you can help save lives, please contact our **Administration & Communications Manager** on **03 364 1253**, email angie.forrest@otago.ac.nz or visit www.otago.ac.nz/chcheart.

If you would like to receive this publication electronically, please email: angie.forrest@otago.ac.nz

If you do not want to receive any further communications from the Christchurch Heart Institute, please contact: angie.forrest@otago.ac.nz

Heart Foundation Grants to CHI Researchers

We're proud to announce that Drs Anna Pilbrow and Barry Palmer were successful in securing funding from the Heart Foundation in July 2014.

Dr Pilbrow was awarded the prestigious Heart Foundation Senior Fellowship and also went on to secure a travel grant to attend the American Heart Association's Scientific Session in Chicago later this year.

Dr Barry Palmer's research project looking at s-Flt-1 as a diagnostic and prognostic marker of congestive heart failure was awarded the largest individual project grant of the project grant prize pool receiving \$155,014 over the next two years.

Congratulations and well done to Anna and Barry.



Dr. Barry Palmer



Dr. Anna Pilbrow



Nicholls Clinical Research Centre



The Christchurch Heart Institute acknowledges the support of the Heart Foundation and Health Research Council of New Zealand.