

Global funding helps establish China's first chronic disease center of excellence

China is the largest developing nation in the world and has undergone dramatic social and economic change over the last few decades, with a dramatic shift in the pattern of diseases. China's major health threats are now chronic diseases, such as heart disease, diabetes and cancer, which currently account for more than three-quarters of all deaths.

In recognition of this change, Chinese, US and Australian medical researchers have announced the first global health initiative to tackle the massive health threat of chronic disease in China. The inaugural Center of Excellence will be established in Beijing to improve prevention and control of cardiovascular health care, stroke, coronary heart disease and other common cardiovascular conditions. The center will conduct major clinical research within short timeframes.

"With the burden of chronic disease in China projected to rise substantially over coming years, high-quality research and health improvement is a priority. With concerted action, we can address this", said Professor WU Yangfeng, Director of The George Institute, China, where the centre will be hosted, in partnership with Peking University Health Science Center. The George Institute, China was established in 2006 and conducts high-quality, large-scale research in the areas of hypertension, stroke, coronary heart disease, obesity, diabetes and injury.

Research projects at the centre will include a major rural health initiative targeting cardiovascular disease in rural China assessing risk factors, such as high blood pressure. A series of projects will also assess other strategies for prevention and management of chronic disease and risk factors such as



tobacco control, salt reduction, obesity and women's heart health.

"This research will give health care providers and policy-makers in China reliable new evidence about the best strategies for the prevention and treatment of cardiovascular diseases. We intend to also train and develop future leaders and develop local capacity to ensure positive changes are sustainable. It is also important to raise awareness of chronic disease in China through advocacy and engagement with policy makers", Professor WU added.

The centre is one of 11 centres based in developing countries across the world, funded by the National Heart, Lung, and Blood Institute of the US National Institutes of Health and UnitedHealth Group.

In China, cardiovascular diseases are the leading cause of death, responsible for about 2.6 million deaths each year, and major disease risk factors such as tobacco, high blood pressure, high cholesterol, diabetes, obesity and physical inactivity are now widely distributed throughout the Chinese population.

Principal Director of The George Institute

for International Health, Professor Stephen MacMahon added, "Annually, 8 million people die from heart disease and stroke alone. The majority of these and other deaths caused by chronic disease occur in the developing world where victims are often workers whose deaths directly result in poverty for families and other dependants. These deaths are largely avoidable, and substantive effort to address this issue must take place now."

For more information on the Center of Excellence, visit www.george.org.cn.

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A Message from the Principal Directors



It gives us great pleasure to introduce this issue of George Research with the announcement of the first ever centre for chronic disease in China to be hosted by The George Institute, China.

In June, US-based funders, National Institutes of Health (National Heart, Lung and Blood Institute) and UnitedHealth Group officially announced a large Global Health Initiative, which will take the shape of a worldwide network of research and training centres. Each centre will build institutional and community capacity to prevent and control chronic diseases, such as cardiovascular and lung diseases, and diabetes. This truly is a step in the right direction for improving global health.

As announced in our cover story, The George Institute, China will host the Center of Excellence in Beijing, alongside our

long-term partners Peking University Health Science Center. The focus of projects will be broad-reaching including research and policy activities. Notably, we will be conducting a rural health initiative in similar vein to the Andhra Pradesh Rural Health Initiative in India to assess strategies for prevention and management of chronic diseases in rural China, in addition to stroke research, tobacco control, salt reduction and more.

While our centre is relatively small, this really can be seen as a watershed for chronic disease prevention and treatment on the international agenda. We look forward to updating you on the news from the Center of Excellence in coming issues of George Research.

In addition to this exciting initiative, we would like to take this opportunity to recognise the Institute's 10th birthday this year. At the end of this issue, you will see highlights of various

ways the Institute has made an impact on global health over the last ten years. We thank all our partners, collaborators, staff and funders who have helped us achieve substantial successes since our establishment in 1999, including the University of Sydney – where the Institute was founded with support from the Faculty of Medicine.

We trust you will enjoy this issue of George Research,

Robyn Norton

Stephen MacMahon



A decade of

DISCOVERY • INNOVATION • IMPACT

Lowering blood pressure saves lives among dialysis patients



Worldwide, more than one million people receive dialysis on an ongoing basis to replace lost kidney function due to renal disease. Up to 20% of these patients will die each year due to cardiovascular disease and until now, no treatments have been clearly proven to reduce this increased risk of conditions such as heart attack and stroke.

Researchers at The George Institute have identified that blood pressure lowering treatment significantly reduces the risk of death for dialysis patients. The details of the study, which assessed the effect of blood pressure lowering in patients on dialysis, were published in the *Lancet*.

“We found that blood pressure lowering significantly reduces the high death rate in patients on dialysis, preventing one in five deaths compared to people who did not receive the treatment. Patients on dialysis are at a greatly elevated risk of death, compared to the general population”, says author Dr Vlado Perkovic.

“These results will change the way clinicians treat dialysis patients”, added Dr Perkovic. “Our study shows blood pressure lowering treatment should routinely be considered for individuals undergoing dialysis to protect patients from the high rate of cardiovascular disease such as heart attack and stroke, and

to reduce their risk of dying. The benefits of this treatment are very large, particularly as they appear similar across all groups of dialysis patients, even including those with either normal or high blood pressure levels”.

Researchers conducted a systematic review and meta-analysis of relevant trials to clarify previous uncertainty around blood pressure lowering in dialysis patients. Over 1,600 dialysis patients were assessed on the effects of blood pressure lowering. This study was funded as part of a program grant to The George Institute from Australia’s National Health and Medical Research Council (NHMRC).

Research proves Tai Chi benefits for arthritis



Arthritic pain places a severe burden on patients and the community, and is recognised as an international health priority. For many patients, the condition is hard to treat and the pain is difficult to ease.

A slow meditative physical exercise designed for relaxation, balance and health, known as Chinese Tai Chi, is fast becoming a popular activity in western culture. Now, researchers have discovered that Tai Chi provides positive effects for improving pain and disability among arthritis sufferers.

“This is the first robust evidence to support the beneficial effects of Tai Chi. Our study proves that this gentle form of exercise relieves pain and disability among people with arthritis and shows a positive trend towards effects for overall physical health. This research should reassure people with

musculoskeletal conditions such as arthritis to seek exercise to relieve the pain. The fact that Tai Chi is inexpensive, convenient, enjoyable and provides other psychological and social benefits supports the use this type of intervention for pain conditions”, added Ms Amanda Hall from The George Institute.

The musculoskeletal division at The George Institute now want to see if these benefits are the same for people suffering from low back pain and will embark on a new trial starting in 2009. Low back pain is the most prevalent and costly musculoskeletal condition in Australia, estimated to cost up to \$1 billion per annum with indirect costs exceeding \$8 billion.

For more information about musculoskeletal research at The George Institute, visit www.thegeorgeinstitute.org.

Tackling the high rate of cardiovascular disease in rural India

A new study has shown low-cost, effective treatments for the prevention of cardiovascular disease are rarely administered in rural India, where stroke and heart attack are the leading causes of death. The study was undertaken in a rural region of southern India where one-third of deaths are due to cardiovascular disease and there is limited use of low-cost evidence-based therapies to prevent it.

Lead author, Dr Rohina Joshi from The George Institute says, “While many treatments for the prevention of cardiovascular disease are low-cost and effective, the uptake of these drugs has been limited. There is a real opportunity for low-cost, simple and therefore appropriate interventions to help prevent cardiovascular disease in rural India.”

Preventive therapies, such as aspirin have been proven to reduce the risk of cardiovascular events, particularly among patients who have already experienced a heart attack or stroke. However, there are considerable treatment gaps in developing countries, where the use of such drugs could make a significant impact on the rising death rate.

“This reflects several barriers related to unavailability and unaffordability of preventive treatment as well as shortage of trained health care professionals in this rural region of India,” added Dr Joshi.

Cardiovascular disease is having a significant economic and social consequence among families, especially in rural India. More than half of all cardiovascular deaths occurred in patients under 70 years of age, which directly impacts a large number of main income-earners for families.



Alcohol link to bowel cancer

Approximately one million new cases of bowel (colorectal) cancer are diagnosed worldwide each year, and more than half a million people die from this type of cancer. In Australia alone, it is the most commonly occurring cancer with more than 12,000 new cases diagnosed each year.

Lifestyle risk factors such as alcohol consumption and cigarette smoking are key causes for bowel cancer. A new meta-analysis of 103 published studies has reported on the association between major and modifiable risk factors for bowel cancer, including alcohol, smoking, diabetes, physical activity and various dietary components. The study found that people who consume large quantities of alcohol, equivalent to more than seven drinks per week, have 60% greater risk of developing the cancer, compared with non-drinkers.

According to lead researcher Associate Professor Rachel Huxley, "The most startling finding of this study was, the strong, and largely unknown association between high intakes of alcoholic beverages with risk of colorectal cancer. Most people probably know that being overweight and having poor dietary habits are risk factors for the disease, but most are probably unaware that other lifestyle risk factors such as alcohol consumption, cigarette smoking and diabetes are also important culprits."

Australia's National Health and Medical Research Council recommend individuals shouldn't be drinking more than two standard drinks per day.

Smoking, obesity and diabetes were also associated with a 20% greater risk of developing bowel cancer - the same risk

linked with consuming high intakes of red and processed meat.

On a positive note, researchers also demonstrated that physical activity lowered an individual's risk of the disease but surprisingly, there was little evidence to indicate that high intakes of fruit and vegetables were protective against bowel cancer.

"These findings strongly suggest that a large proportion of colorectal cancer cases could potentially be avoided by making relatively modest lifestyle adjustments such as drinking less, quitting smoking, eating healthily and being a little more active", said Associate Professor Huxley. "Such changes would also have huge benefits in terms of reducing an individuals' risk of developing other major forms of illness including cardiovascular disease."

A taste of student life at The George

The wide scope of research undertaken at The George Institute, has provided many opportunities for PhD students to get a taste of not only international research, but research with a difference.

Under the guidance of highly respected supervisors and enrolled at the School of Public Health at the University of Sydney, we hear from three students at The George who have worked on some unique research projects.



Reece Hinchcliff

PhD Project: Evidence, legitimacy and persuasion: key influences on novice driver policy

My project aims to uncover the ways that research, policy-makers and media influence young driver policy. I'm conducting a comparative case study involving a series of interviews with key novice driver policy experts in Australia and the USA. I will also analyse media coverage. Increased transparency of those factors that influence road safety policy will help develop strategies on how to use the best available evidence to inform policy.

A highlight for me while working on my PhD has been discussing my research with the Governor General and other research and policy leaders. I plan on submitting my thesis in the next six months and then, after some serious relaxation, applying the skills I've learnt to further understand the interaction between human rights, health and economic policies.



Nicole Li

PhD Project: Novel dietary strategies for the prevention of cardiovascular diseases in China

The aim of my PhD program was to evaluate the potential for two novel dietary intervention strategies seeking to reduce cardiovascular risks in China. One addressing salt and blood pressure, the other addressing plant sterol and lipids.

My research identified a highly cost-effective dietary intervention strategy to reduce blood pressure and its related cardiovascular disease risk. The study replaced salt with a salt substitute and showed important reductions in blood pressure without producing a substantial adverse effect on the flavour of food. This study finding will have profound health implications for China and beyond.

I am also involved in more blood pressure research at The George, in addition to working on the Australian Division on Salt and Health, 'Drop the Salt!' campaign. I have secured personal funding from the Fogarty International Clinical Research Program to launch a national salt reduction campaign in China from July this year.



Colman Taylor

PhD Project: An investigation into the costs and benefits of helicopter emergency medical services in NSW

My project is investigating helicopter-based, out-of-hospital transport in NSW. Ultimately I would like to evaluate the cost of transporting trauma and non-trauma patients in relation to the benefit. The study will provide a comprehensive picture of helicopter out-of-hospital transport in NSW and give an assessment of the incremental cost benefits (compared to traditional ground-based transport methods). I am hoping it will ultimately assist in evidence-based health service design.

I am currently involved in several other research projects at The George, in the areas of trauma and critical care medicine both in Australia and China. A great aspect of working at The George is the opportunity to work and interact with experts in several distinct areas of public health research.

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All of the stories in this and every issue of George Research are available online, and readers can subscribe today to receive the George Research e-newsletter at www.thegeorgeinstitute.org.



A decade of DISCOVERY · INNOVATION · IMPACT

TEN WAYS WE'VE MADE AN IMPACT ON GLOBAL HEALTH

1. Provided global evidence to reduce heart attack, stroke and kidney disease in diabetes patients.
2. Led research that has changed practice in the treatment of high blood pressure and stroke.
3. Identified cost-effective treatments to save lives in intensive care patients globally.
4. Developed a program to address high rates of chronic disease in Indigenous communities.
5. Created a world first survey tracking global investment into diseases of the developing world.
6. Determined that chronic diseases and injuries are the major causes of death in rural India.
7. Identified risks and strategies to reduce the high death and injury rates among young drivers.
8. Designed an intervention in China that dramatically increased use of seat belts.
9. Demonstrated how lower blood pressure helps save dialysis patients' lives.
10. Provided vital evidence to improve outcomes for millions of patients with recurring low back pain.



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