

## High blood pressure the culprit in 2 out of 3 heart attacks and strokes in the Asia-Pacific

Globally hypertension, or high blood pressure, is one of the top three leading modifiable risk factors of disease, along with tobacco and alcohol. New research has now shown that high blood pressure causes up to 66% of cardiovascular diseases, such as heart disease and stroke, in the Asia-Pacific region.

The team behind the new research, the Asia-Pacific Cohort Studies Collaboration (APCSC), uncovers evidence about the determinants of stroke, coronary heart disease, and other common causes of death in Asia-Pacific populations. For this particular piece of research, the APCSC aimed to identify the role of hypertension in cardiovascular diseases in the Asia-Pacific region. It found that high blood pressure was the key factor in more than half of all cases.

The APCSC reported that the fraction of deaths after stroke that were attributable to hypertension is over 60% in certain countries (Indonesia and Mongolia). High levels were also found in Malaysia, China, Philippines, Hong Kong (over 50%), New Zealand and Australia (both around 30%). The study also showed high blood pressure is responsible for a significant percentage of deaths caused by heart disease in Mongolia and China. The new data highlight the potential reduction in deaths from heart disease and stroke that could be achieved if high blood pressure were controlled in this region.

Low and middle-income countries, such as China and India, account for 80% of global cardiovascular-related deaths and 87% of cardiovascular related disabilities; overall, around half of the world's burden of cardiovascular



disease is carried by low and middle-income countries in the region. The findings, recently published in the *Journal of Hypertension*, are based on data from more than half a million adult participants. The investigation was also able to attain precise estimates for women in the region, confirming that hypertension is as risky for women as men.

The APCSC, the largest ever partnership and study of cardiovascular disease in the Asian region, indicated that priority needs in the region should include population-based strategies to prevent or reduce high blood pressure, as well as prevention and treatment of the condition in individuals. Dr Alexandra Martiniuk, author and Senior Research Fellow at The George Institute (which provides the APCSC Secretariat) said, "Salt is one of the leading causes of high blood pressure in the area. Salt consumption in China, particularly Northern China, is among the highest in the world. Efforts to restrict its addition to food and use as a storage medium

in parts of Asia would help in reducing its role in high blood pressure."

This APCSC research project was funded by the National Health and Medical Research Council, Australia and an unrestricted educational grant from Pfizer Inc.

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Comment by  
**Professor Mark Stevenson**

## Young driver licence review, a welcome step in the right direction

Road trauma remains one of the leading causes of death for young Australians. Of particular concern is the fact that more than a quarter of all fatal road injuries and hospitalisations are in the age group 17 to 25 years and yet this age group comprises only 15% of licenced drivers. Over the past few years, Australia has seen an unacceptable rise in the number of young driver crashes and fatalities. The disproportionately high representation of young drivers in the crash statistics has been attributed to factors such as inexperience, inability to identify hazards, night-time driving, carrying peer-passengers and other distractions such as the use of mobile phones.

Over the past 12 months there has been an increase in young driver deaths in New South Wales (NSW), which has resulted in a review of the state's laws for provisional driver licencing. To understand the factors associated with these crashes, the Institute's Injury Division has undertaken pivotal studies into the causes of young driver crashes and, as a result, we have strongly advocated for a more stringent licencing system for young drivers.



Conducted both here in Australia, as well as overseas, the research highlights the practical and beneficial outcomes from night time and peer passenger restrictions, along with limitations on mobile phone use while driving. Both late night and peer passenger restrictions have shown significant reductions in fatal and injurious crashes for young drivers. In countries where the licencing system has included these restrictions, reductions of between 7% and 23% in serious injury have been observed, including crash reductions of up to 60% during the late night restricted hours.

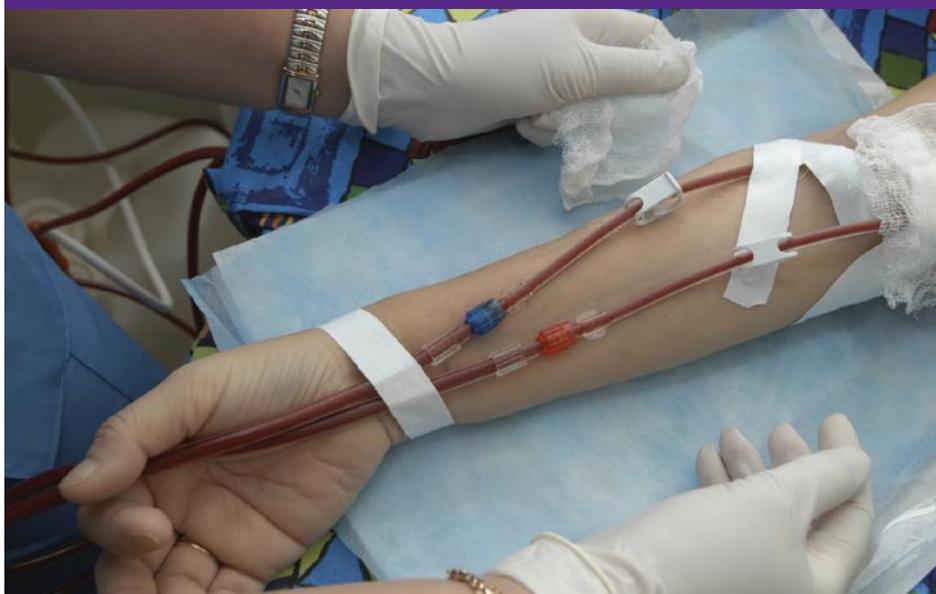
The George Institute welcomed the recommendations made by the NSW Government's Young Driver Advisory Panel in

late 2006. Restricting passenger numbers, zero tolerance for speeding offences, banning the use of mobile phones in cars and encouraging parents to play an increased role in driver education are certainly steps in the right direction. I am particularly pleased that research from the Institute played a key role in the Panel's recommendation related to a ban on mobile phone use - these significant changes to the licencing system have been well overdue.

The Institute will release results of a young driver study later this year, which will highlight the leading determinants of motor vehicle related crashes and injuries among young drivers. Over 20,000 young drivers participated in the study, and the findings will contribute to further strategies aimed at reducing the growing burden of road injury among young drivers.

**Professor Mark Stevenson**  
Senior Director  
Research and Development  
The George Institute

## Key to preventing chronic kidney disease and its devastating complications



Around one in seven Australian adults have chronic kidney disease (CKD). CKD causes or contributes to almost one in ten deaths in Australia. In addition, individuals with CKD have a significantly higher risk of suffering a heart attack or stroke, as people with moderate to severe CKD have at least a 40% increased risk of hospitalisation for a cardiovascular event.

These surprising figures, along with extensive data on the burden of chronic kidney disease were recently reported by The George Institute, in a report commissioned by Kidney Health Australia. The authors have also released the results of research addressing the cost effectiveness of early detection and intervention against CKD in Australia. This is the first comprehensive assessment of the impact of interventions designed to decrease the burden of CKD and estimates the incremental costs and benefits associated with various strategies for kidney screening and treatment.

Screening and intensive management of the major risk factors surrounding CKD — high blood pressure, diabetes and protein in the urine — were clearly highlighted by the research team as appropriate and cost-effective. The authors conclude that general practitioner-run screening of 50-69 year olds, along with intensive management of patients known to have these three major risk factors, should be highly cost-effective strategies.

Dr Alan Cass, Director of the Renal Division at The George Institute noted that "These methods are simple and extremely cost-effective. We estimate that, over a fifty-year period, screening for diabetes, high blood pressure and protein in the urine, followed by best practice management of those detected, would be likely to prevent around 100,000 deaths."

The report was published by Kidney Health Australia this month, and can be found online at [www.thegeorgeinstitute.org](http://www.thegeorgeinstitute.org).

### Staff Profile



SARAH WHITE  
PhD Student  
BSc (Mol Biol & Gen) Hons, MPH

After starting her studies wearing a white coat and growing tissue cultures, Sarah decided that the laboratory wasn't for her, and set her sights on a career in public health. "I had my first taste of epidemiology as an undergraduate student studying microbiology and virology, and from there completed my Bachelors degree, honours and Masters of Public Health at The University of Sydney."

Sarah commenced her PhD studies with the Central Clinical School at The University of Sydney in 2004 and will submit her thesis in September this year.

"My academic interest is the epidemiology and natural history of chronic kidney disease. There is still a great deal that we don't know about risk factors for chronic kidney disease, about how fast disease progresses or which individuals experience progressive disease. With so much still to learn, kidney disease is a rewarding area for research."

In Australia, approximately 14% of the adult population have at least one marker of kidney damage and the number of people receiving renal replacement therapy - maintenance dialysis or a kidney transplant - around the world is projected to at least double in the next decade.

As a PhD student in the Renal Division at The George Institute, Sarah recently played a major role in the compilation of the report on the burden of chronic kidney disease and cost effectiveness of early detection and intervention report commissioned by Kidney Health Australia (KHA), which is due to be released this month (see opposite).

"Being part of this research team project for KHA has been very rewarding. The findings have real potential to influence policy and the amount of interest that the two reports have generated has been encouraging."

Outside of work, Sarah admits a slight addiction to eBay... "I love trading things on eBay, and it's a great way to supplement my student income!"

# THE GEORGE INSTITUTE, CHINA

## George Institute establishes firm foothold in China



The new George Institute, China office in the Zhong Guancun District, Beijing

In recent years, The George Institute has embraced a range of research, policy and capacity-building activities in China. From road injury research to hypertension and stroke surveys, the Institute's work covers a broad spectrum of Chinese health issues, working in partnership with local experts to provide better health outcomes for the population.

The country's enormous population and associated health challenges led The George Institute to establish a program in China in 2004 to work in collaboration with key health partners in Beijing, Shanghai, Guangzhou and many rural communities. Importantly, the Institute places a strong emphasis on initiating and supporting policy development that ensures clinical and population-based health research is effectively translated into practice. This is best shown in recent studies

such as CPACS, ONTARGET, ChinaQUEST and the China Salt Substitute Study (CSSS). Details on the studies underway in China can be obtained from The George Institute's website at [www.thegeorgeinstitute.org](http://www.thegeorgeinstitute.org).

The formal establishment of The George Institute, China this year marks a new and exciting phase in the George's development and is a key platform for its long-term commitment to facilitating research and health policy initiatives in Asia. The George Institute, China will mark the occasion in April by officially launching its new office in the Zhong Guancun District, Beijing. The new facilities have the capacity to accommodate up to 40 professional staff and recently, Professor WU Yangfeng has been appointed as the Institute's Director.

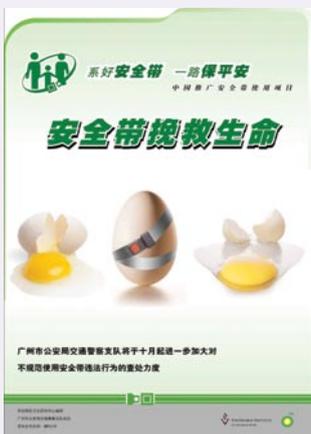
## Road Safety Initiatives

At the time when The George Institute, China formally launches its new office in April 2007, results of a major road safety initiative run by the Institute in China will be presented to key stakeholders, including government and road safety officials. China accounts for around one in six of the world's total number of deaths from road traffic injury every year, and the number has been increasing annually. The rapid growth of large urban centres, such as Guangzhou in Southern China, creates an urgent need to implement proven road safety interventions. The China Seat Belt Intervention is a comprehensive intervention aimed at reducing the increasing number of road traffic injuries.

The George Institute launched the intervention in Guangzhou in mid-2005. As part of the project, senior police officers undertook law enforcement training and initiated intensive enforcement programs. Comprehensive social marketing campaigns linked with intensive law enforcement were also implemented.

Results of the intervention are due to be published in April 2007 and will be officially released during the United Nations Road Safety Week. The results, highlighting not only the success of such an intervention but also the cost effectiveness of such a road safety initiative, will be widely distributed.

in China



## An opportunity too good to miss



Driven by a love of foreign travel and a desire to work on health challenges in the developing world, there is no question that Dashiell Gantner is cut out for his role as an Australian Youth Ambassador for Development (AYAD).

The AYAD placement, in partnership with The George Institute and funded by AusAID, was an opportunity too good to miss. It has enabled him to perform high-quality clinical research in a country that has fascinated Dash for many years. "It provided the perfect chance both to extend my research skills and to learn a great deal about China – particularly now, when the country is undergoing massive social, environmental and medical changes - all at unbelievable speeds."

As a Research Fellow based in Beijing, Dash is involved in cardiovascular, stroke and intensive care research. "This is one of the most challenging and rewarding experiences of my life. I'm working in China, engaged every day with Chinese researchers and practitioners, learning how to integrate my skills and experience into another culture, and following my passion for clinical medicine, epidemiology and health systems."

At the age of 17, Dash undertook a student exchange in Bolivia, which he says was "a life-changing 12 months". On returning home, Dash

wanted to know more about the health situation in the Asia-Pacific region, and decided to embark on his science degree at Melbourne University before studying medicine and surgery at The University of Sydney.

A large appetite for all things medical and international, Dash volunteered as medical assistant and taught English in East Timor. He continued to study at the Sacred Heart Hospital, Barcelona before completing his residency at St Vincent's Hospital, Sydney.

He had already spent a year in China when Deng Xiaoping's economic reforms were just being implemented. "Through my family and friends I have had a great chance to witness and hear stories of the extraordinary and sometimes dramatic changes of the last 50 years."

In Melbourne, you will often find Dash in one of the two bars he owns with his brother and two friends, 'Double Happiness' and 'New Gold Mountain' which were inspired from Eastern concepts. In China, his spare time is spent travelling to remote regions of China "taking as many photos as I can of this weird and wonderful country!"

## Improving ICU patient care

By the middle of next year, around 6,000 patients will have participated in a leading international study looking at patient care in intensive care units (ICUs). It is already the largest study ever undertaken to research the issue of blood glucose control in critically ill patients.

The NICE-SUGAR\* Study aims to determine the safest blood sugar level in ICU patients. High blood sugar, or hyperglycaemia, is common in critically ill patients, and its occurrence is associated with adverse effects, including organ failure, prolonged mechanical ventilation, lengthy stays in intensive care and death.

The George Institute, in collaboration with the Australian and New Zealand Intensive Care Society Clinical Trials Group and the Canadian Critical Care Trials Group, recently hosted a meeting for study researchers from 23 sites in Australia and New Zealand, to discuss intensive insulin therapy, the current state of knowledge and the progress of the study. The meeting was a unique opportunity to share knowledge and to recognise the importance of improving patient outcomes in ICU settings, according to Associate Professor Simon Finfer, the Co-Director of the Critical Care and Trauma Division at The George Institute.

“The NICE-SUGAR Study will determine whether a lower level of blood glucose results in more patients surviving critical illness. Patients are being recruited from more than 35 ICUs throughout Australia, New Zealand, Canada and the United States.”

The three-year study, which is due for completion next year, provides a new web-based insulin regime for ICU nursing staff to administer. Research staff have found that control of blood glucose in study participants has been good.

Associate Professor Finfer says the success of the study so far is due to the hard work and commitment of ICU staff at contributing hospitals, as well as the patients and families who have participated in this vital study.

The success and growth of the Institute’s trauma and critical care research programs over the last few years has resulted in a splitting of the Injury Prevention and Trauma Care Division, forming both the Injury and Musculoskeletal Division and the Critical Care and Trauma Division.

The Critical Care and Trauma Division continues to expand the Institute’s expertise in large-scale, multi-centred clinical trials in critical care, both within Australasia and internationally. The Division also extends the Institute’s reach across the globe, working in close collaboration with:

- 16 hospitals in Australia and New Zealand
- Ambulance Service of New South Wales
- Australian and New Zealand Intensive Care Society Clinical Trials Group
- Australasian Trauma Society
- NSW Injury Risk Management Research Centre
- NSW Institute of Trauma and Injury Management



- The Australian Red Cross Blood Service
- The Australian and New Zealand Intensive Care Research Centre
- The Canadian Critical Care Trials Group
- The Mayo Clinic
- The School of Safety Science, The University of New South Wales
- The University of Pittsburgh Medical Center and Center for Sports Medicine

To stay informed of the latest news regarding the study, join The George Institute mailing list, at [www.thegeorgeinstitute.org](http://www.thegeorgeinstitute.org) or phone +61 2 9993 4500.

\*NICE-SUGAR Study (Normoglycaemia in Intensive Care Evaluation and Survival Using Glucose Algorithm Regulation)

## The lower the blood pressure, the better



Associate Professor Bruce Neal (far left), joins the NHMRC '10 of the best' recipients, for the George's work in the Blood Pressure Lowering Treatment Trialists Collaboration

The Institute's Cardiovascular Division researches and implements new strategies for the prevention and treatment of major vascular diseases such as stroke and heart attack.

High blood pressure is responsible for around seven million deaths annually, making it one of the leading causes of death in the world. An estimated 600 million people worldwide have high blood pressure. As the incidence of ill health related to vascular disease rises, new treatments and prevention strategies are becoming a global health priority.

The Blood Pressure Lowering Treatment Trialists' Collaboration collects and analyses data from more than 200,000 patients participating in clinical trials from 50 countries – the largest study of its kind worldwide. This ongoing

study, managed at The George Institute, looks at the effects of blood pressure-lowering medication on major cardiovascular diseases such as stroke and coronary heart disease. The most recent results from the collaboration found that all classes of drugs commonly used to lower blood pressure were similarly effective at reducing the risk of disease. The study also found that aggressive treatment to reduce blood pressure provides protection against stroke and heart attack, supporting the concept of "the lower the blood pressure, the better".

Results from this particular collaboration continue to inform many national and international blood pressure management guidelines and it was recently recognised in the NHMRC's "10 of the best".

### Injury Prevention Courses

As injury is a leading health problem across the globe, studies in injury prevention become increasingly valuable and are a vital way of expanding our knowledge base.

In 2007, The George Institute staff, working through The University of Sydney, will offer three opportunities for students and interested individuals to further their knowledge of injury prevention issues:

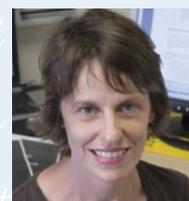
- Injury Prevention - 2 Day Short Course (3 & 6 August, 2007)
- Injury Epidemiology, Prevention & Control - One-semester Online Course
- Falls Prevention in the Older Person - One-semester Online Course

Course participants will learn from teachers and researchers who are leaders in the field.

Further information is available online at [www.georgeinstitute.org](http://www.georgeinstitute.org). If you have any queries about this course, please contact Tracey Bruce at [tbruce@george.org.au](mailto:tbruce@george.org.au).

We acknowledge the support of the Australian Government Department of Health and Ageing and the Strategic Injury Prevention Partnership.

### Staff Profile



FIONA TURNBULL

Senior Research Fellow

BSc, MB ChB, MPH (Hons) and FAFPHM

Drawing on her interest in a broad spectrum of public health and blood pressure issues, Fiona made the move to the Institute in 2003. Since then, Fiona has managed a partnership of over 50 principal investigators of major blood pressure lowering trials from around the world, known as the Blood Pressure Lowering Treatment Trialists' Collaboration. "The aim of the collaboration is to provide clinicians and their patients with the best available evidence about the effects of different classes of blood pressure drugs on cardiovascular disease in a broad range of patients."

Public health has always been on Fiona's agenda. She trained at Otago Medical School in Dunedin, New Zealand before completing her house surgeon years and moving to Sydney in 1994 to work in paediatrics at the Children's Hospital (Westmead). Fiona became interested in community paediatrics and spent the next three years working on vaccine-preventable diseases. Returning to New Zealand to complete her Public Health Medicine training in Wellington, Fiona decided to return to Sydney at the beginning of 2003 to start work at the George as a key member of the cardiovascular team.

Currently Fiona manages her toddler, work and study as a PhD student at The University of Sydney. "My PhD topic is looking at blood pressure treatment effects in important patient subgroups, including those with and without diabetes, younger versus older individuals and males versus females."

## 2007 events

Stay updated with The George Institute latest events, by visiting [www.thegeorgeinstitute.org](http://www.thegeorgeinstitute.org). The Institute hosts several events each year, across a wide range of topic areas.

The Health Economics Collaborations Seminar Series 2007 is the result of a collaboration between the School of Public Health, The University of Sydney, The George Institute for International Health and the National Drug and Alcohol Research Centre, The University of NSW.

Speakers will include:

■ **"ECONOMICS OF CERVICAL CANCER PREVENTION - LESSONS FROM INDIA AND THE UK."**

**Ms Rosa Legood**

Health Economic Research Centre  
Department of Public Health  
University of Oxford, UK

■ **"ESTIMATING HOSPITAL COSTS ASSOCIATED WITH DIABETES-RELATED COMPLICATIONS USING ADMINISTRATIVE DATA FROM THE SWEDISH DIABETES REGISTRY"**

**Prof Ulf Gerdtham**

Health Economics Program  
Department of Clinical Sciences  
University of Lund, Sweden

■ **"MALARIA, ECONOMICS AND HEALTH POLICY: AN OVERVIEW OF COLLABORATIVE STUDIES INVOLVING THE LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE"**

**Dr Virginia Wiseman**

London School of Hygiene and Tropical  
Medicine, UK

■ **"ESTIMATING THE COST-SAVINGS OF REDUCED CRIME WHILE ON METHADONE TREATMENT"**

**Ms Marian Shanahan**

National Drug and Alcohol Research Centre  
The University of NSW

■ **"USE OF EXPECTED VALUE OF INFORMATION IN ECONOMIC EVALUATION"**

**Dr Elisabeth Fenwick**

Department of Public Health  
Glasgow University, UK

For additional information on the 2007 seminar series contact **Nafisa Alam** on (02) 9036 9262.

If you wish to be added to the mailing list for information on future health economics seminars and events, send your details to [heconomics@health.usyd.edu.au](mailto:heconomics@health.usyd.edu.au).

## The George online

[www.thegeorgeinstitute.org](http://www.thegeorgeinstitute.org)



The George is committed to managing a dynamic, quality website as a useful resource for its wide range of stakeholders. Research news, information and achievements are regularly updated online and a recent homepage upgrade now provides an improved gateway to the website.

Our new homepage gives visitors a snapshot of the Institute's latest activities while providing access to other, frequently visited areas of the site.

The website allows collaborators, members of the media, students, participants, policy makers and job seekers to easily make their way to content of interest to them.

Events, research highlights, media stories, publications and individual research project pages are easily accessible from the homepage, and users can also sign up for the electronic version of George Research here.

Be sure to bookmark The George Institute website, and visit regularly for updates in between issues of George Research.



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