

GLOBAL HEALTH at the george

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STUDYING THE DRIP, DRIP EFFECT

PERHAPS THE MOST INNOCUOUS MEDICAL AID IN TODAY'S MODERN HOSPITAL UNITS OF HIGH-TECH MACHINES AND MEDICAL DEVICES IS THE HUMBLE DRIP. INTRAVENOUS DRIPS FIRST CAME INTO PROMINENCE IN THE MAKESHIFT HOSPITAL UNITS OF WORLD WAR ONE. ON THOSE BATTLEFIELDS, AS IN CURRENT DAY INTENSIVE CARE UNITS, THE ABILITY TO INJECT A SIMPLE HYDRATING SOLUTION INTO THE VEIN HELPED TO MAINTAIN BODY FLUID, AID THE OUTPUT OF THE HEART, AND STABILISE AND MAINTAIN BLOOD PRESSURE.

The use of different drip solutions have for several years been of interest to researchers at The George Institute. There are many different forms of the drip that are used in the intensive care setting but the two main groups can be divided into crystalloids like saline, which dissolve in water, and colloids like starch, that suspend in water.

The CHEST trial is asking fundamental questions about the benefits of a starch versus saline drip solution in the intensive care environment. Saline has the benefit of being cheap, with a history of effectiveness, whereas the more expensive starch appears to have a faster-acting effect in improving factors like patient blood pressure, and blood flow to body and organs. Yet, some clinicians believe a potential consequence of a starch solution is that it can collect in kidney cells, damaging the kidney in the long term. There are also fears that starch inhibits immune cells and can accumulate in the skin to cause itchiness.

Surprisingly, there has never been a large clinical trial to rigorously prove the benefits or safety of a starch versus a saline drip. Intravenous fluids do not undergo the same strenuous clinical trial evaluations that are required before most medicines come into routine use. For this and many other reasons the CHEST trial is deemed by many as the most important study in intensive care medical research in the last 30 years.

CHEST is based on similar principles to a previous successful George Institute trial called SAFE. It found the use of an expensive colloid solution called albumin to be harmful for those with traumatic brain injury. CHEST researchers plan to recruit 7,000 patients in 32 intensive care units (ICUs) in Australia and New Zealand by the



end of 2011. The results are due to be published at the end of 2012.

The trial has three possible outcomes, all of which will have an impact on intensive care medicine around the world. The trial has been designed to find out if there is any difference between treatment with starch or saline in patient survival 90 days after receiving ICU care. The trial will also examine any difference between kidney function, brain haemorrhage and length of recovery.

Cost-effectiveness and patient quality of life will also be examined. One or other of the intravenous treatments may have better results, or the result may be similar for both treatments.

Whatever the results of the trial, the findings will provide important evidence for clinical practice in intensive care units around the world contributing significantly to the improvement in the survival and recovery of millions of people who receive intensive care every year.

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P4 HEALTH CARE
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LifeSeeds: Transforming
health in rural China

See special insert from China International
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REDUCING SALT MEANS HEALTHY RESULTS

Jacqui Webster, Senior Project Manager for the Australian Division of World Action on Salt and Health (AWASH) was invited to give a presentation on the cost effectiveness of salt reduction strategies at the Pacific Island Ministerial Food Summit in Vanuatu in April last year. The South Pacific Office of the World Health Organization also funded workshops in Fiji in June and Guam in September to discuss the benefits of salt reduction.

The George Institute was then commissioned to facilitate and support the development of salt reduction activities

as part of non-communicable disease strategies in Fiji, Nauru and the Solomon Islands. A range of activities, including restricting purchases of salt in schools and hospitals, setting up food composition databases, and using markets to educate people about low salt cooking are now being implemented. During 2011, regional activities, including establishing standards for salt levels in foods will be considered. This will be in parallel with work to establish programs in other Pacific Islands countries, including Samoa, Tonga and the Cook Islands.



The George Institute's Jacqui Webster (2nd from the right) and World Health Organization representative Dr Temo Waqanivalu (far left) with delegates at the Solomon Islands Salt Consultation Meeting in November 2010

HEALTH CARE INNOVATION

THE FORGOTTEN ROAD USERS



RIDING A MOTORCYCLE IS ASSOCIATED WITH A HIGH RISK OF FATAL CRASHES, BOTH IN AUSTRALIA AND IN MANY OTHER PARTS OF THE WORLD. ACCOUNTING FOR ONLY 4.5 PERCENT OF AUSTRALIAN VEHICLE REGISTRATIONS, MOTORCYCLE RIDERS ACCOUNT FOR AN ALARMING 15 PERCENT OF ROAD DEATHS.

While the past two decades have seen significant improvements in driver education programs for car occupants, learner programs for motorcyclists seem to have been left behind.

A recent Cochrane Review by The George Institute has revealed a worrying lack of evidence for how effective training programs are in reducing death and serious injury for motorcycle riders. The researchers

reviewed previous research studies that examined the effectiveness of both pre and post-licence training across the world. They found that while compulsory pre-licence training may act as a deterrent to motorcyclists getting their licence, the level of evidence to assess motorcycle training effectiveness was so poor that they were unable to say what type of training is best.

Associate Professor Rebecca Ivers, Director of the Injury Division at The George Institute said, "It's of great concern that there is such a black hole of evidence when it comes to assessing what works and what doesn't in motorcycle rider training."

"If governments are serious about reducing motorcycle deaths on the road they should rigorously evaluate any new or existing rider training programs so they can measure their effectiveness based on evidence rather than assumption", says Rebecca.

By 2030 road traffic injuries are predicted to become the fifth leading cause of death globally. The need for government action is even greater for low and middle-income countries like India, China and Vietnam where the use of motorcycles is higher than in high-income countries.

Associate Professor Ivers is currently leading an evaluation of a motorcycle rider coaching program being run in Victoria, Australia which will go some way to addressing the gap in evidence in this area.

Evaluated by researchers at the George Institute for Global Health and managed by VicRoads, this trial seeks to evaluate the effectiveness of an on-road coaching program developed by Monash University Accident Research Centre in conjunction with Honda Australia Rider Training and Learning Systems Analysis.

ASSESSING HELMET SAFETY

CONSTRUCTION HELMETS, SUN-PROTECTION HELMETS, AND EVEN PLASTIC BUCKETS ARE ALL THAT STAND BETWEEN MANY MOTORCYCLISTS AND TRAUMATIC HEAD INJURIES OR DEATH IN A TRAFFIC CRASH ON THE STREETS OF SOUTHERN CHINA. THE WORLD HEALTH ORGANIZATION HAS ESTIMATED THAT ROAD COLLISIONS ARE THE MAIN CAUSE OF DEATH IN CHINA FOR THOSE UNDER THE AGE OF 45. WITH MORE MOTORCYCLES PRODUCED IN CHINA LAST YEAR THAN THE POPULATION OF AUSTRALIA, THE IMPACT OF CHOICE OF HELMET ON DEATH AND DISABILITY IS ENORMOUS.

Associate Professor Rebecca Ivers and colleagues from The George Institute, China decided to determine the prevalence of motorcycle helmet use in Southern China, including both the quality of helmets used and proper helmet wearing.

"Determining the prevalence of motorcycle helmet use, as well as assessing the quality of the helmets is particularly important in helping to enhance government policy and to complement enforcement practices," says Professor Ivers.

Data collected in 2009 revealed that less than half of motorcyclists and their

passengers wear a safe and properly secured helmet. Reasons for not wearing a standard helmet range from high cost and forged safety stickers, to lack of knowledge and the discomfort of a helmet during humid summers.

To save more lives and prevent head injuries in China, the results of the research will lead to development of strategies, such as education campaigns on helmet safety, and will encourage the government to regulate the production and sale of helmets to ensure they are safe for motorcyclists.





HEALTH CARE INNOVATION

VISIONS OF A HEALTHIER INDIA

NESTLED DEEP IN THE RURAL HEARTLAND OF INDIA'S SOUTH-EASTERN COAST LIES THE SMALL VILLAGE OF GARAGAPARRU IN ANDHRA PRADESH. THE VILLAGE HAS BEEN HOME TO GENERATIONS OF INDIANS WHO HAVE LABOURED ON THE LAND FARMING RICE, SUGAR CANE, CORN AND COUNTLESS OTHER FOODS THAT GAVE BIRTH TO ITS MONIKER AS THE 'RICE BOWL OF INDIA'.

Even after the tide of industrialisation gave birth to the urban landscapes of Hyderabad and the giant coastal port of Visakhapatnam, Garagaparru retained its rural landscapes and heritage. Today villagers continue to work the land as they have always done.

Dhana Lakashmi was born in Garagaparru village and after completing her schooling was driven by a passion to contribute to her

community by becoming a multi-purpose health worker.

"I joined The Byrraju Foundation which is a not-for-profit organisation that promotes health, education and health care in remote villages including our village. At that time, The George Institute and The Byrraju Foundation started the Andhra Pradesh Rural Health Initiative (APRHI)."

The APRHI was carried out in collaboration with the Centre for Chronic Disease Control, Hyderabad's CARE Foundation, The George Institute, and The University of Queensland. It aimed to understand the main causes of morbidity and mortality throughout the East and West Godavari districts of Andhra Pradesh. Evidence from this study has now been used to train health workers like Dhana Lakashmi to improve the lives of people living throughout the region.

"Because of the study, it has been discovered that more villagers are dying from cardiovascular diseases and injuries than it was thought. Before the study, many people used to think that heart attack and injuries were more common for people living in cities and towns. The study proved otherwise."

"We collected blood samples and conducted house-to-house surveys as part of the study. We diagnosed high blood pressure and diabetes in many people, and asked them to come to health centres and collect medicines. We also gave dietary advice that educated people about how best to avoid high blood pressure, diabetes, stroke and obesity."

"Many people, many of them my friends, changed their lifestyles and eating habits. They started using good quality refined oils, even if it did cost more, and they stopped adding salt to buttermilk and their food."

"By working with The George Institute on the APRHI, we showed that the delivery of health care in rural India need not be very expensive. People's lives can be improved by involving the local health care providers more actively and by implementing simple strategies like the identification of high risk individuals, secondary and non-drug prevention strategies."

"I know that the study made the government and other organisations stand up and focus on the rural population. Encouragement and hard work by the health workers go a long way in solving the majority of health problems in rural areas."

To find out more about our work in India visit www.georgeinstitute.org.in. To find out how you can support our projects in India contact Chris Ostendorf on +61 2 8238 2402.

ONE MILLION TEENAGERS PAVE THE WAY FOR A HEALTHIER INDIA



AS INDIA'S ECONOMY CONTINUES TO DEVELOP, HER POPULATION IS UNDERGOING A RAPID HEALTH TRANSITION, WITH CHRONIC DISEASES AND INJURY ALREADY ESTABLISHED AS LEADING CAUSES OF MORBIDITY AND PREMATURE MORTALITY.

Among India's adolescents, comprising almost one-quarter of the country's population, mental illness and injury are particularly prevalent health problems. In addition, many of the predisposing behaviours, risk factors for and early manifestations of cardiovascular and metabolic diseases are established in this age group, contributing to extraordinarily high rates of chronic disease being observed in young Indian adults. To date, most studies involving Indian teenagers have focused primarily on communicable conditions and

reproductive health, with few data available to understand chronic disease and injury risks in this population and opportunities to impact on these conditions.

Indian policy makers face significant challenges to improve the health system for both urban and rural dwelling Indians alike. A lack of evidence to demonstrate the scope and nature of the health landscape coupled with a primary health care system ill-equipped to focus on prevention of chronic diseases further compounds the challenge facing India.

To tackle this challenge, The George Institute's Million Teenagers study, aims to recruit one million teenagers into a study to determine the health conditions of Indian teenagers. Researchers will follow up with participants every five years utilising a range of incentivised retention and social marketing techniques to retain participants

in the study. This result will be a 'health map' that will provide policy makers with the ability to dedicate current and future resources for generations of Indians.

The study was officially launched in October 2010 at the book launch of one of the Institute's Board Directors, Peter Church, entitled Added Value: The Life Stories of Indian Business Leaders. Associate Professor Anushka Patel gave guests a first glimpse of the ambitious project which has the potential to become the world's foremost health study of young Indians.

The George Institute is currently looking for supporters for the Million Teenagers study and are keen to talk to anybody who is interested in supporting the project. Please contact Chris Ostendorf on +61 2 8238 2402 or costendorf@georgeinstitute.org.au for more detail.



HEALTH CARE INNOVATION

LIFESEEDS BLOSSOMS IN THE YEAR OF THE RABBIT

CARDIOVASCULAR DISEASE IS THE NUMBER ONE KILLER IN THE WORLD TODAY. IN THE NEXT TEN YEARS, OVER 25 MILLION PEOPLE IN CHINA WILL DIE FROM CHRONIC DISEASES SUCH AS HEART DISEASE, KIDNEY DISEASE, STROKE AND DIABETES.

The outlook is grim, but is not without hope. These diseases are preventable and treatable.

LifeSeeds is the flagship project of The George Institute, China. It is aimed at addressing two of China's pivotal health needs: reducing cardiovascular disease and closing treatment and management gaps in the delivery of primary health services in China's rural villages.

"LifeSeeds will provide evidence-based solutions for treating cardiovascular diseases in rural China, where prevention and treatment programs are mostly absent at the village level," said Professor WU Yangfeng, LifeSeeds project director.

Villagers from 120 rural townships in the five Northern provinces of Hebei, Liaoning, Ningxia, Shanxi, and Shaanxi will participate in the LifeSeeds program. The program will train 95 community doctors practising in the townships to identify cardiovascular disease and carry out the first ever comprehensive health survey of local villagers. People will benefit from a community-based education campaign to encourage them to lower their salt intake – one of the leading contributors to heart attack and stroke.

"The LifeSeeds program complements and supports the government's efforts to transform the health of people living in rural China," says Professor Wu.

After the initial pilot stage, the program will be expanded to more villages. If successful, LifeSeeds will be rolled out nationally across China. LifeSeeds has the ability to change and improve the health of millions of people living in rural areas.

To find out more about the LifeSeeds project and how you can support it visit www.georgeinstitute.org.cn or contact Ye Erken (Ken) on yerken@georgeinstitute.org.cn or +86 10 8280 0577-602, or Chris Ostendorf on costendorf@georgeinstitute.org.au or +61 2 8238 2402.

LIKE A HOT COAL IN WINTER



Professor Robyn Norton with prominent members of the Australian Chinese community

RURAL CHINA IS HOME TO MORE THAN 700 MILLION PEOPLE, AND CHRONIC DISEASES SUCH AS HIGH BLOOD PRESSURE, DIABETES, HEART DISEASE AND KIDNEY DISEASE ARE HAVING A MAJOR IMPACT. THROUGH ITS LIFESEEDS PROJECT, THE INSTITUTE IS WORKING COLLABORATIVELY WITH THE UNIVERSITY OF PEKING AND LOCAL COMMUNITIES TO ADDRESS THESE DISEASES, AND IMPROVE THE HEALTH OF DISADVANTAGED PEOPLE LIVING IN RURAL CHINA.

Recently, the Institute launched LifeSeeds in Australia with an event at the Art Gallery of NSW and its exhibit The First Emperor: China's Entombed Warriors. Leading members of the Australian Chinese community attended, including representatives from the Chinese Consulate-General in Sydney.

In a letter read aloud at the event, Professor HAN Qide, Vice-Chairman of the Standing Committee, China National People's Congress, stated: "There is no doubt that Chinese cities are changing for the better almost every day. But the

people in disadvantaged rural areas deserve more of our attention and care. After all, they represent the majority of China. We can't achieve an 'harmonious society' without them having a decent, healthy life. To implement such a big project in China is not easy. To add to the support from the Chinese Government, I would encourage people in all industries, including overseas Chinese people, to actively support this project. The LifeSeeds project is like 'a hot coal in the winter' – it gives warmth and reassurance."

With your support, we can expand this project into more villages across China. LifeSeeds researchers are conducting an innovative program to train rural doctors to provide better care. Approximately AU\$3,000 (RMB 20,000) can help train 10 of these local doctors in the five provinces of Shanxi, Shaanxi, Hebei, Liaoning and Ningxia. By training 10 local doctors, you're helping more than a thousand rural patients to live longer and healthier lives.

To find out more about how you can help, please contact Chris Ostendorf on costendorf@georgeinstitute.org.au or Ye Erken (Ken) on yerken@georgeinstitute.org.cn.

NEWS IN BRIEF

Year in review

The George Institute's 2009-10 Year in Review 'Changing lives: Globally, locally' is now available on request. For a copy, please email info@george.org.au or download a copy from www.georgeinstitute.org.



Funding success

The George Institute has been awarded over AU\$10 million in grants from the Australian NHMRC for seven projects in 2011. This includes funding for the ADVANCE study on heart attack and stroke, and a new study on lower back pain. For more information visit www.georgeinstitute.org.

Fellowship grants

Three George Institute researchers have been awarded *Future Fellowship* grants from the Australian Research Council. Chris Maher, Bruce Neal and Hisatomi Arima will continue to lead programs in the fields of back pain, food policy and blood pressure management.

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