



THE GEORGE INSTITUTE  
for Global Health  
INDIA

AUSTRALIA | CHINA | INDIA | UK

# Who we are

## our mission

**Our mission** is to improve the health of millions of people worldwide.

We will achieve this by:

- Providing the best evidence to guide critical health decisions
- Engaging with decision makers to enact real change
- Targeting global epidemics, particularly of chronic diseases and injury
- Focusing on vulnerable populations in both rich and poor countries

## our values

**Our humanitarian commitment** will spur us to tackle the health issues affecting high-risk and disadvantaged people worldwide.

**Our focus on excellence** will produce scientific evidence that is ethical and of the highest quality.

**Our creativity** will challenge traditional thinking and provide an impetus for new and innovative solutions to the world's leading health problems.

**Our integrity** will underpin all our work and interactions, including our collaborations with partner organisations worldwide.

**Our “can do” approach** will produce timely, effective action, even in the face of adversity or other barriers to implementation.

**Our emphasis on impact** will ensure our work has real consequences for those who are most vulnerable to disease and injury.

## our partners

Partnerships with institutions, organisations and individuals sharing our vision, allow us to extend our reach in rich and poor countries alike. Through these partnerships, we draw on a wide range of expertise to develop and implement activities to address global and regional health issues.

### Indian Council of Medical Research (ICMR)

A formal Memorandum of Understanding between ICMR, The University of Sydney and The George Institute exists for the purposes of research collaboration. Current activities under this MOU include developing initiatives relating to the prevention of injury and childhood obesity.

The George Institute India has collaborations with over sixty national and international institutions as well as strong ties within our global offices in Australia, China and the United Kingdom.

### Public Health Foundation of India (PHFI)

The George Institute India and Public Health Foundation of India have a Memorandum of Understanding to promote collaborative research and capacity development activities. Initial joint activities focus on urban health and disability due to chronic diseases and injury.

### University of Hyderabad

The George Institute, India, has a Memorandum of Understanding with the University of Hyderabad, India.

The purpose of this academic and research partnership is to increase public health research capacity through training of students and researchers, and develop collaborative public health projects.

## executive director's report

2012 has been a year of considerable growth and success for The George Institute, India. One important achievement has been the completion of the UMPIRE trial – a study evaluating the effectiveness of a “polypill-based strategy” for improving the long-term of health of people with cardiovascular diseases in India and Europe. This study showed that the availability of an inexpensive single pill containing multiple preventive drugs (developed and manufactured in India) increased the likelihood that patients would take prescribed medications, and this resulted in improved blood pressure and cholesterol levels.

This year has also brought success in attracting research funding for a number of new major projects covering a range of topics from understanding how best to reduce the salt intake in Indian diets, to the development of smartphone applications and clinical processes of care that enable rural village community healthcare workers and primary healthcare centre doctors to deliver high-quality but affordable chronic diseases prevention services.

None of this work would be possible without an extensive network of national and international collaborating partners and without the willingness of thousands of individuals and hundreds of communities to volunteer for participation in our research activities. We are immensely grateful for this and, in turn, we renew our commitment to conduct priority research responsive to the health needs of our communities, which will directly impact on the quantity and quality of the lives of millions of people throughout India and other regions of the world. I hope you enjoy reading this report.



Professor Anushka Patel  
MBBS SM PhD FRACP FCSANZ  
Executive Director



## the george institute india directors

### Professor Anushka Patel (1)

Executive Director, The George Institute India / Chief Scientist

Anushka Patel is the Executive Director of The George Institute, India and Chief Scientist at The George Institute for Global Health, Professor with the Medical School at the University of Sydney, and a cardiologist at Royal Prince Alfred Hospital. Anushka completed her undergraduate medical training at The University of Queensland in December 1989, and her training in cardiology (leading to Fellowship of the Royal Australian College of Physicians) in 1998. She has a Master of Science degree in Epidemiology from Harvard University, and a PhD in Medicine from the University of Sydney. Anushka also holds a National Health and Medical Research Council Senior Research Fellowship.

### Dr. Pallab K. Maulik (2)

Deputy Director and Head of Research & Development

Pallab K. Maulik joined The George Institute, India as the Head of Research and Development in early 2010. Dr. Maulik brings a wealth of experience to the Institute, in particular expertise in mental health. Dr. Maulik has worked with the

World Health Organisation (WHO), Geneva on Project Atlas and other mental health programs, and clinically as a psychiatrist in India and Australia. His particular research interests include social determinants of health, especially mental health services, mental disorders, international mental health, and intellectual disability. After training as a psychiatrist at the All India Institute of Medical Sciences, New Delhi, Dr. Maulik received training in public health at the London School of Hygiene and Tropical Medicine, as well as Johns Hopkins School of Public Health where he studied his Masters and Doctoral training.

### Dr. Vinodvenkatesh Patil (3)

Head-Clinical Research

Dr Patil is a medical graduate from Karnataka University, India with over eight years of Clinical Research industry experience joined The George Institute as Head-Clinical Research in 2009. Prior to joining The George Institute, India, he has worked as Qualified Person Pharmacovigilance (QPPV), Medical Writer and Managerial roles in the Pharmaceutical and Clinical Research Industry.

His clinical trial exposure is across various therapeutic areas and in different service and business environments.

### A. Sunder Rajan (4)

Head, Infrastructure & Resources

A. Sunder Rajan joined The George Institute, India as Head of Infrastructure and Resources in October 2007. Graduate of JNU, New Delhi and National Defence Academy, Pune, he has completed many professional army courses in Army War College, Mhow, Military Intelligence School, Pune, Artillery School Deolali and College of Air warfare Secunderabad. Prior to joining The George Institute, India, he was in the National Cadets Corps as a Group Commander in Nizamabad A.P. While in the NCC he was involved in directing the AIDS awareness and pulse polio immunization programmes in West Bengal and Andhra

The George Institute, India is proud to boast some of India's finest health and medical researchers as members of its Research Advisory Committee (RAC) – an independent body that provides high-level research recommendations. Meeting in Hyderabad last year, the RAC provided positive feedback on the 2011-12 research program in India.

The committee made several recommendations around profile raising and funding opportunities, while encouraging the team to continue their focus on developing collaborations and building research capacity within India.

The portfolio of research at The George Institute, India has grown considerably since the Institute officially opened its doors in 2007. Currently, there are 10 major studies underway in injury prevention and chronic disease with particular focus on innovative ways to delivery healthcare solutions, particularly in disadvantaged populations.

Members of the Research Advisory Committee include:

- Dr. G Gururaj  
National Institute of Mental Health & Neurosciences, Bangalore
- Dr. Rajesh Kumar  
Postgraduate Institute of Medical Education and Research, Chandigarh
- Dr. Ramanadham Madduri  
University of Hyderabad, Hyderabad
- Dr Jeyaraj Durai Pandian  
Christian Medical College, Ludhiana
- Dr. M Shiva Prakash  
National Institute Of Nutrition, Hyderabad
- Dr. KR Thankappan  
Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum
- Dr. R Thara  
Schizophrenia Research Foundation, Chennai
- Dr CS Yajnik  
King Edward Memorial Hospital, Pune

# Our People





## *keep it local – innovation changing world health*

In the rural areas of Andhra Pradesh on the southeastern coastline of India, a group of women may hold the key to changing the way healthcare services are delivered, to reducing the cost of healthcare and preventing death and disease.

Using mobile phone technology, 11 Accredited Social Health Activists (ASHAs), who are non-physician community health workers, and three doctors are involved in a pilot that is screening and managing cardiovascular disease with the assistance of tablet devices.

They are working with a field team from The George Institute for Global Health who will take the findings from this pilot, and refine the system, in preparation for a full research trial using the tablet-based technology across 54 villages, 18 primary

healthcare centres and involving around 14,000 people.

Cardiovascular disease is the leading cause of premature death and disability in India with more than 30 million people suffering a heart attack each year and many millions more dying as a consequence of what is a highly preventable disease. Using technology to make healthcare more accessible and affordable is a focus for The George Institute and the results from this project have global implications for the delivery of health services especially in low-income settings.

The ASHAs are using an application called SMART Health India. The SMART Health app built into tablet devices will help both doctors and ASHAs to better

identify cardiovascular risks such as raised blood pressure, high cholesterol and diabetes as red flags for the potential of suffering a heart attack. As part of the project, ASHAs, are trained to carry out procedures like blood pressure and blood sugar measurement, and used the tablet to predict a patient's 10-year risk of cardiovascular disease. High-risk individuals identified by the ASHA are then referred to a doctor for a management plan for long term care. Although ASHAs have experience in maternal and child health, conducting household heart health checks is completely new.

Associate Professor David Peiris, of The George Institute for Global Health, was one of the field team who worked on the training of the ASHAs in India.



# Smarthhealth





keep it local – innovation changing world health

# Smarthhealth



"The ASHAs were enthusiastic about the training and working on the project – they used the tablet and navigated through the app with ease," he said.

"There was no fear about swiping and pressing buttons. When we arrived at the meeting room for training several ASHAs had come early and were already using the app."

George Institute Senior Research Fellow D Praveen was also a part of the field team and recalls the reactions of patients to the new technology and to the greater role of the ASHAs in providing the screening.

"The first patient to be screened by the ASHA was around 55 years old and he had never had a blood pressure check in his entire life," he said.

"Apprehension was clearly visible on his face but the re-assuring thing for him was that he knew the ASHA and the care and support she already provided to his fellow villagers. He noticeably relaxed after constant encouragement from ASHA and at the end of the consultation, he said he was happy to know about his low-risk status. During one screening check a small queue of neighbours started forming outside the house to have their check-up also done by the ASHA.

"For a few people whom the ASHA identified to be at high risk of heart disease, they understood the take home message and were comfortable with visiting the doctor for treatment."

Associate Professor Peiris said that predicting the risk of these preventable

diseases meant that a healthcare practitioner could work with the patient to change their habits or behaviours.

"It may be about stopping cigarettes, changing diet and reducing salt; being more active or starting medicines," he said.

"ehealth and mhealth, using innovative technology and mobiles, can give practitioners and also patients more tools to manage their health on the basis of reliable, readily accessible, easy to use information, and at the same time significantly improve access to medical care.

"This is important in India where there are 500,000 doctors, but a need for three million to provide essential healthcare.



# Smarthhealth

When on the field trip we visited a primary healthcare centre. The doctor had seen 70 patients in the previous three hours. The clinic had run out of blood pressure medicines for that month and it was only mid-November. As a GP, I put myself in that doctor's shoes for a short while and had a brief insight into the enormous challenges of delivering good primary health care in this setting. It inspires me in my work at The George Institute to use smart technology to deliver innovation at a low cost so that people can receive essential healthcare.

"We are rapidly approaching the point where there will be as many mobile subscriptions as there are people on the planet.

"This connectivity offers vast untapped potential to provide better health care for the five billion people who currently have limited or no access to essential healthcare. Despite this bold promise we need rigorous evidence to demonstrate that this can be translated into reality."

The field team will provide ongoing support to these ASHAs in their home villages and to the doctors in three primary health care centres as part of the field-testing over the next few months and into the early part of next year before the more extensive trial later in 2013.



## UMPIRE points to single pill success

People are much more likely to take heart medicines if they're combined in one pill, according to a clinical trial involving researchers from The George Institute, India, and presented at the American Heart Association's Scientific Sessions late in 2012.

The trial into the Use of a Multidrug Pill In Reducing cardiovascular Events (UMPIRE) is the first time the impact of a fixed-dose, combination strategy has been tested in people with cardiovascular disease.

The George Institute India was responsible for the conduct of UMPIRE for about half the participants in India. The George Institute Australia provided all data management and statistical services for the study. Parallel trials in Australia (Kanyini-GAP) and New Zealand (IMPACT) will report their findings in early and mid-2013.

The initial UMPIRE results were presented by Simon Thom, Professor of Cardiovascular Medicine and Pharmacology at Imperial College London.

Professor Thom said that people who had suffered heart attacks or strokes or those at high risk of such problems needed to take preventive medications, including antiplatelet drugs (such as aspirin),

cholesterol-lowering and blood pressure-lowering drugs.

"But the reality is that many people in this high-risk category get out of the habit of taking the recommended medications," Professor Thom said.

"This happens for a variety of reasons; some of which may be corrected by a single, simple, fixed dose combination pill – a combination known as a 'polypill.'

"There has been uncertainty about a fixed dose combination strategy for cardiovascular disease prevention. While many physicians have anticipated that adherence might be improved, the reduced number of drugs and doses could offset the benefits of simplicity.

"This trial showed improvements in adherence being paralleled by improvements in blood pressure and cholesterol, despite the control group in the trial being treated much better than average," Professor Thom said.

Researchers studied whether changing the delivery of several medications into one fixed-dose, combination pill might improve adherence and, therefore, improve blood pressure and cholesterol control. The researchers followed more than 2,000 men and women (average age

62) with cardiovascular disease in Europe and India for an average 15 months. Half of the participants were given a combination pill of aspirin, a cholesterol-lowering agent (statin) and two blood pressure-lowering drugs. The other half took their medications as usual, with multiple pills and doses.

Researchers noted that the group taking a single pill improved adherence by a third and had improved blood pressure and cholesterol levels compared to those taking multiple pills.







## yoga to prevent falls in india

One of the world's most ancient and widely enjoyed exercise could hold the key to preventing falls. Yoga combines different postures with breathing techniques and has long been promoted as an exercise with both health and psychological benefits.

Around 75% of fall injuries occur in low and middle-income countries, and is now recognised globally as a major cause of death and disability.

In India, falls related injury is emerging as a public health issue.

Research shows that a number of approaches can protect older people from falls, including exercise programs. Drawing from the falls and injury expertise at The George Institute, researchers last year conducted a pilot study that for the first time evaluated the benefits of yoga on falls in a low income setting.

Set in yoga's country of origin, the pilot study set out to determine the feasibility, acceptability and sustainability of a three month yoga program in urban Hyderabad, India. This pilot also provided the opportunity to validate the method of measuring the incidence of falls in a population of older community dwelling people in urban India.

The study was conducted at two sites in Hyderabad, the Osmania Urban Health Clinic (UHC) and the University of Hyderabad. These two sites enrolled 50 participants each, administered yoga intervention as two, one-hour sessions per week for three months and collected data throughout the study. This pilot was augmented by a brief qualitative assessment involving focus groups discussion and interviews with the study participants.

The research team also examining yoga as a strategy for falls prevention in Australia, where falls affect around 1 million older people each year. The results from the pilot study in Hyderabad will inform a program of research in falls prevention in India and other settings where there is a large burden of falls injury and little preventive action.

Results will be published mid 2013.

# Yoga prevents falls

## *indian research receives funding boost*

The Global Alliance for Chronic Disease and Australia's National Health and Medical Research Council will fund four research projects in India aimed at preventing and treating chronic diseases that have major impacts on the country's people and health system.

Chronic illnesses such as heart disease are the leading cause of mortality in India and The Institute's research will focus on prevention, effectiveness of early interventions and treatment and innovation to drive greater accessibility and affordability.

Funding for the research projects will cover:

- Trialling a three-in-one blood pressure lowering pill that simplifies the patient's treatment regimen and improves health outcomes.
- Development of salt reduction interventions.
- Overcoming barriers in the prevention treatment of high blood pressure.
- The research projects include evaluating whether a smartphone system will assist Indian rural healthcare workers detect and manage hypertension and cardiovascular risk.

# Research news







## as simple as 1,2,3 – changing world health

Hypertension has emerged as a significant public health problem for the developing world and is one that The George Institute India is addressing in its latest research program.

WHO estimates indicate high blood pressure is the leading cause of premature death globally and the third leading cause of disease burden, with the majority of the burden falling in developing countries.

In India, the number of hypertensive patients is predicted to rise from 118 million in 2000 to 200 million in 2025. Developing strategies to treat and manage this health crisis is behind the Institute's Triumph Study (TRIple Pill vs. Usual care Management for Patients with mild-to-moderate Hypertension).

Professor Anushka Patel, Executive Director of The George Institute, India, and a member of the study steering committee, said the Triumph trial would test the effectiveness of a strategy utilising a 3-in-1 "triple" anti-hypertension pill.

"The triple pill combines three low dose blood pressure medications into one pill, which then needs to be taken once a day," she said. "Routine early use of this could potentially improve blood pressure control with less doctor visits and fewer side effects.

"Traditionally, doctors treat hypertension by starting one drug at a low dose, then progressively increasing the dose. If blood pressure control is not achieved, which is very common, a second drug and often a third one are introduced in a similar

fashion. This is a relatively costly process requiring multiple doctor visits. We will compare the blood pressure control in patients who are provided the 3-in-1 pill as initial treatment to patients treated in the standard fashion.

"There has been no clinical trial to test the benefits or cost effectiveness of a strategy using a low-dose combination 3-in-1 drug to manage mild to moderate hypertension and the work in India will be instrumental in developing new health practice and in making healthcare more affordable.

"We believe that a 3-in-1 pill may also make it easier for patients to adhere to their medication regime, might reduce side effects and will reduce the number of visits they need to make to a doctor.

# Hypertension



as simple as 1,2,3 – changing world health

# Hypertension

Increasing life expectancy, urbanisation, increased salt consumption, alcohol intake and obesity are some of the factors contributing to the higher incidence of hypertension in India.

By the year 2021, the percentage of Indians who are 35 years or older will constitute nearly 42% of the total Indian population. Similarly, the number of Indians living in urbanized settlements by the year 2021 is expected to rise from 30% to nearly 43%. Given these changes in the demographic profile the likelihood of hypertension emerging as a major public health challenge is daunting.

Professor Patel said that awareness and control of hypertension was relatively poor even among those who were well educated and had access to screening programs.

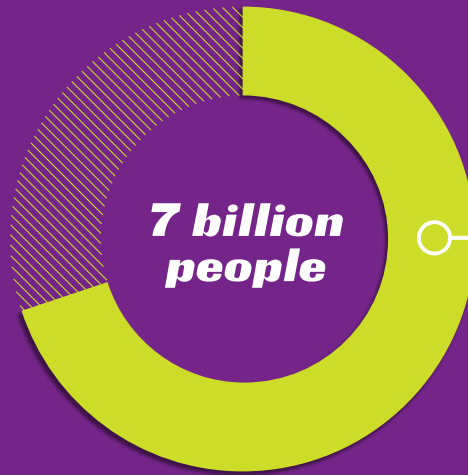
"We know that at least five billion people, around three quarters of the world's population, have little or no reliable access to basic healthcare for the conditions most likely to kill or disable them prematurely," she said.

"If we can combine making innovative treatments more affordable and more accessible with increasing awareness and education, then we can really change healthcare for the most vulnerable."

The George Institute India and the Centre for Chronic Disease Control in Delhi will conduct the 700 patient clinical trial in 20 centres across India for six months.

Results are expected in late 2014.





**7 billion  
people**

**70%**  
**no healthcare**