



Our mission is to
improve the health
of millions of people
in India



Table of contents

Our mission, our values, our partners	02
From the ED, with Professor Vivekanand Jha	03
Q&A with Dr. Pallab Maulik	04
Our Directors	05
Advisors, Funders and Collaborators	06
Reducing hip fracture mortality rates and healthcare costs in India	07
Mobile technology in the service of patients undergoing dialysis at home	08
Overcoming barriers to hypertension control in rural areas	09
Affordable stroke recovery	10
Dialysis Outcomes Study	11
SMART way to tackle common mental disorders	12
SMARThealth in Primary Healthcare Centres - A ray of hope for patients at risk	13
Developing a National Salt Reduction Program for India	15
Critical Appraisal Skills Program for journalists	16
Using Big Data analytics for NCD research	17
Oxford India lecture	18
TRIUMPH - Triple Pill for Hypertension	19
The George Institute India Team	20
Future projects at the George Institute India	21
Contact Us	22

The George Institute for Global Health is a global, not-for-profit organisation located in Australia, China, India and the United Kingdom. We are a registered charity in Australia and the United Kingdom.

In India, we are registered under Section 25 of the Companies Act and recognised by the Department of Scientific and Industrial Research (DSIR), Government of India.

The George Institute for Global Health, India. Company Number: U74900TG2007NPL055085
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OUR MISSION

Our mission is to “reduce premature and preventable death and disability caused by the complex continuum of non-communicable diseases, road traffic injuries and mental disorders.”

WE WILL ACHIEVE THIS BY:

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

OUR VALUES

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

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 that share our vision allow us to extend our reach across the country in rich and poor settings alike. Through these partnerships, we draw on a wide range of expertise to develop and implement activities to address a wide range of health issues.

The George Institute for Global Health, 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 the 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, while developing collaborative public health projects.



Post-Graduate Institute for Medical Education and Research, Chandigarh

The George Institute, India, has a Memorandum of Understanding with the Post-Graduate Institute for Medical Education and Research, Chandigarh, to undertake joint research, develop collaborative public health projects and facilitate the exchange of faculty and students.



Christian Medical College, Ludhiana

The George Institute, India, has a Memorandum of Understanding with the Christian Medical College, Ludhiana, to undertake joint research, develop collaborative public health projects and facilitate the exchange of faculty and students.



OUR GLOBAL AFFILIATIONS





*Prof. Vivek Jha
Exec Director, The George India*

FROM THE ED, PROFESSOR VIVEKANAND JHA



I am delighted to present to you the Annual Report of The George Institute, India for the year 2014-15, a period of considerable growth and success for the Institute. With the burden of non-communicable diseases continuously on the rise in our country as indicated by the latest Global Burden of Disease data, the Institute initiated a number of projects that focuses on transformative approaches for improving healthcare delivery with sustainability, scalability, affordability, self-care and health systems strengthening as the chief goals.

We continued to expand on innovative models of healthcare to develop patient-centered solutions to prevent premature deaths. We wish to demonstrate through community-oriented interventions that a multi-stakeholder approach involving doctors, community health workers and others in the area of preventive health is indeed the way to go forward when it comes to strengthening health systems in the country.

We extended the SMART^{Health} project - which utilizes the tight integration between software coding technology and evidence-based guideline driven clinical decision support system that enable rural community health workers and primary health centre doctors to collaborate and deliver high-quality care. This has the potential to radically change the way the society receives primary healthcare. It is also evolving into a platform that can help provide effective healthcare to the people at large and as we extend it to mental health, diabetes, etc, we are learning valuable lessons along the way.

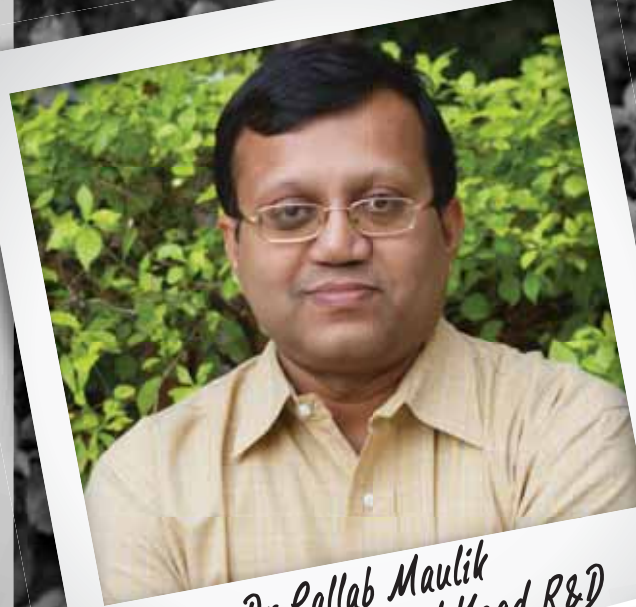
Chronic kidney disease is an important consequence of diabetes and hypertension and the burden of these continues to increase. With funding from the Department of Biotechnology of the Government of India, we are developing a national cohort of subjects with early chronic kidney disease that will explore the progression factors for these conditions. These projects allow establishment of a kidney disease investigator network who will develop and address future questions through this resource.

We have also started a new study to ascertain the outcomes of patients with advanced end stage kidney failure receiving dialysis and its social and economic consequences, with the hope that

Vivekanand Jha

Professor Vivekanand Jha
Executive Director,
The George Institute for Global Health, India

The burden of non-communicable diseases is continuously on the rise in India as indicated by the latest Global Burden of Disease data.



*Dr Pallab Maulik
Deputy Director and Head R&D*

Q & A WITH DR. PALLAB MAULIK

Can you briefly describe the mission of The George Institute in India?

The George Institute for Global Health believes that changing healthcare is fundamental to transforming the social landscape of the country and its population. In India, we have been working to improve the health of people nationwide by undertaking research that can help in reducing the burden of non-communicable diseases that leads to premature death and disability.

What is the strategy used to conduct research in India?

Our strategy in India is to undertake innovative and ground breaking research that is concentrated around three main themes:

1. Reducing the impact of the major causes of premature death and disability;
2. Developing innovative strategies for healthcare delivery; and
3. Identifying new treatments for serious health conditions.

We undertake research projects having both "discovery" and "implementation" components. Implementation components that feed the lessons learned from these into policy making through advocacy and communications.

What are the key principles guiding the research of The George Institute in India?

The main principles while determining the themes are the following:

- Research should have a specific translational property that can inform health outcomes for large populations, health services and policy.

- Development of research along two broad principles:

- a) "Implementation research", to target health services research with the aim to develop research that can be implemented within existing health systems; and
- b) "Discovery research", which will focus on research that identifies risk factors for diseases, new treatment models, and plots the burden of different diseases.

- Research that will have a specific focus on disadvantaged populations.

- Partnerships will be sought with both national and international researchers and organisations in the areas through collaborative research.

Wherever possible, our researchers aim to involve global expertise available within The George Institute's global offices, while including as many global offices in the conduct of research as possible.

What are the key areas of research?

We use the life-cycle approach in determining the key areas of research as we believe there is a continuum of diseases and risk factors from childhood to old age.

The key areas of research are:

- Development and use of innovative technology
- Develop strategies with a focus on workforce re-engineering
- Use of big data analytics
- Conduct research to understand pathways to care and identify methods to improve the same
- Conduct clinical trials with the highest level of scientific rigour

OUR DIRECTORS

The George Institute for Global Health, India is proud to boast of 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 Delhi last year, the RAC provided positive feedback on the 2013-14 research program in India and future focus.

The committee appreciated the growth of the Institute and its involvement in quality research. While acknowledging the steps taken by the Institute to improve its profile in India and facilitate research capacity development, they stressed upon leveraging local funding opportunities and increasing the national profile of the Institute.

The portfolio of research at The George Institute for Global Health, India has grown considerably since the Institute was officially launched in 2007. Currently, there are currently there are 10 major studies in non-communicable diseases including injury prevention, with particular focus on innovative ways to delivery healthcare solutions, particularly in disadvantaged populations.



Professor Vivekanand Jha

Executive Director, The George Institute for Global Health, India. James Martin Fellow, The George Institute for Global health, University of Oxford

Professor Vivekanand Jha is the Executive Director, The George Institute for Global Health, India, and Professor of Nephrology and James Martin Fellow at the University of Oxford.

Prior to joining The George Institute, he was Professor of Nephrology and Head, Department of Translational Regenerative Medicine and Officer-In-Charge, Medical Education and Research Cell at the Postgraduate Institute of Medical Education and Research in Chandigarh, India.

Vivek serves on the international advisory boards of several organisations, including membership of the WHO Expert Advisory Panel on Human Cell, Tissue and Organ Transplantation, Councillor of the International Society of Nephrology and the International Transplantation Society, and member of the Education Committee of the International Society of Peritoneal Dialysis.

He is a physician with a specialisation in the area of kidney diseases and he focuses on emerging public health threats globally and in India. He is particularly interested in using multi-disciplinary approaches and innovation to address the major challenge posed to humanity by non-communicable diseases.



Professor Anushka Patel

Chief Scientist, The George Institute for Global Health and Professorial Fellow

As the Chief Scientist of The George Institute for Global Health, she has a key role in developing and supporting global strategic initiatives across the organisation. Her personal research interests focus on developing innovative solutions for delivering affordable and effective cardiovascular care in the community and in acute care hospital settings.

Anushka is a Professor of Medicine at The University of Sydney and a cardiologist at Royal Prince Alfred Hospital in Sydney, Australia. She undertook her medical training at the University of Queensland, with subsequent postgraduate research degrees from Harvard University and the University of Sydney.

Anushka currently leads research projects relating to these interests in Australia, China and India. She is supported by a Senior Research Fellowship from the Australian National Health and Medical Research Council (NHMRC).



Dr. Pallab K. Maulik

Deputy Director and Head of Research and Development, The George Institute for Global Health, India. Senior Research Associate, The George Institute for Global Health, University of Oxford

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. 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. He is a Wellcome Trust-DBT India Alliance Intermediate Career Fellow.

His particular research interests include social determinants of health, especially mental health services, mental disorders, international mental health, and intellectual disability.



Amit Khanna

Director, Finance and Operations, The George Institute for Global Health, India

Amit joined The George Institute for Global Health, India in May 2013 as Director of Finance and Operations. Prior to joining our team, he worked in the services industry with companies providing services such as auditing and consulting, shipping and logistics, online classifieds/advertising, internet and technology based solutions.

He instantly connected with The George Institute's mission and values and is very passionate about being instrumental in driving policy changes in India. Amit holds a degree in Commerce from Delhi University and is a member of the Institute of Chartered Accountants of India.



ADVISORS, FUNDERS AND COLLABORATORS

Members of the Research Advisory Committee include:

Dr. K. R. Thankappan (Chair)

Professor and Head, Achyutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum

Dr. G. Gururaj

Professor and Head, Department of Epidemiology, National Institute of Mental Health & Neurosciences, Bengaluru.

Professor S. V. Madhu

Department of Medicine, Division of Endocrinology and Metabolism, University College Of Medical Sciences, New Delhi

Professor Prathap Tharyan

Director, South Asian Cochrane Centre, Christian Medical College, Vellore.

Dr. Jeyaraj Durai Pandian

Professor, Department of Neurology, Christian Medical College, Ludhiana.

Dr. Usha Raman

Associate Professor & Head, Department of Communication, University of Hyderabad

Dr. Rajapurkar Mohan Manohar

Director, Postgraduate Studies and Research, Department of Nephrology, Muljibhai Patel Urological Hospital, Dr. Virendra Desai Road, Nadiad, Gujarat

Dr. D. K. Shukla

Head (NCD), ICMR

Somil Nagpal

Senior Health Specialist, Global Practice on Health, Nutrition and Population, World Bank.

Key Funders

Department of Biotechnology, Government of India

Indian Council of Medical Research

National Health and Medical Research Council (NHMRC), Australia

University of Oxford

Wellcome Trust - DBT India Alliance

Baxter Foundation

UNICEF India

Grand Challenges, Canada

The George Institute for Global Health

Key India collaborators

Apollo Group of Hospitals

Care Group of Hospitals

Fortis Group of Hospitals

Centre for Chronic Disease Control, New Delhi

Christian Medical College and Hospital, Ludhiana

Guru Tegh Bahadur Hospital and University College of Medical Sciences, New Delhi

Indian Institute of Public health, Bhubaneshwar

Indian Institute of Public Health, Hyderabad

Post-Graduate Institute of Medical Education and Research, Chandigarh

Public Health Foundation of India, New Delhi

Rishi Valley Health Centre, Chittoor

Sanjay Gandhi Post-Graduate Institute of Medical Sciences. Lucknow

Sree Chitra Tirunal Institute of Medical Sciences and Technology

University of Hyderabad

Key International collaborators

Imperial College, London

King's College, London

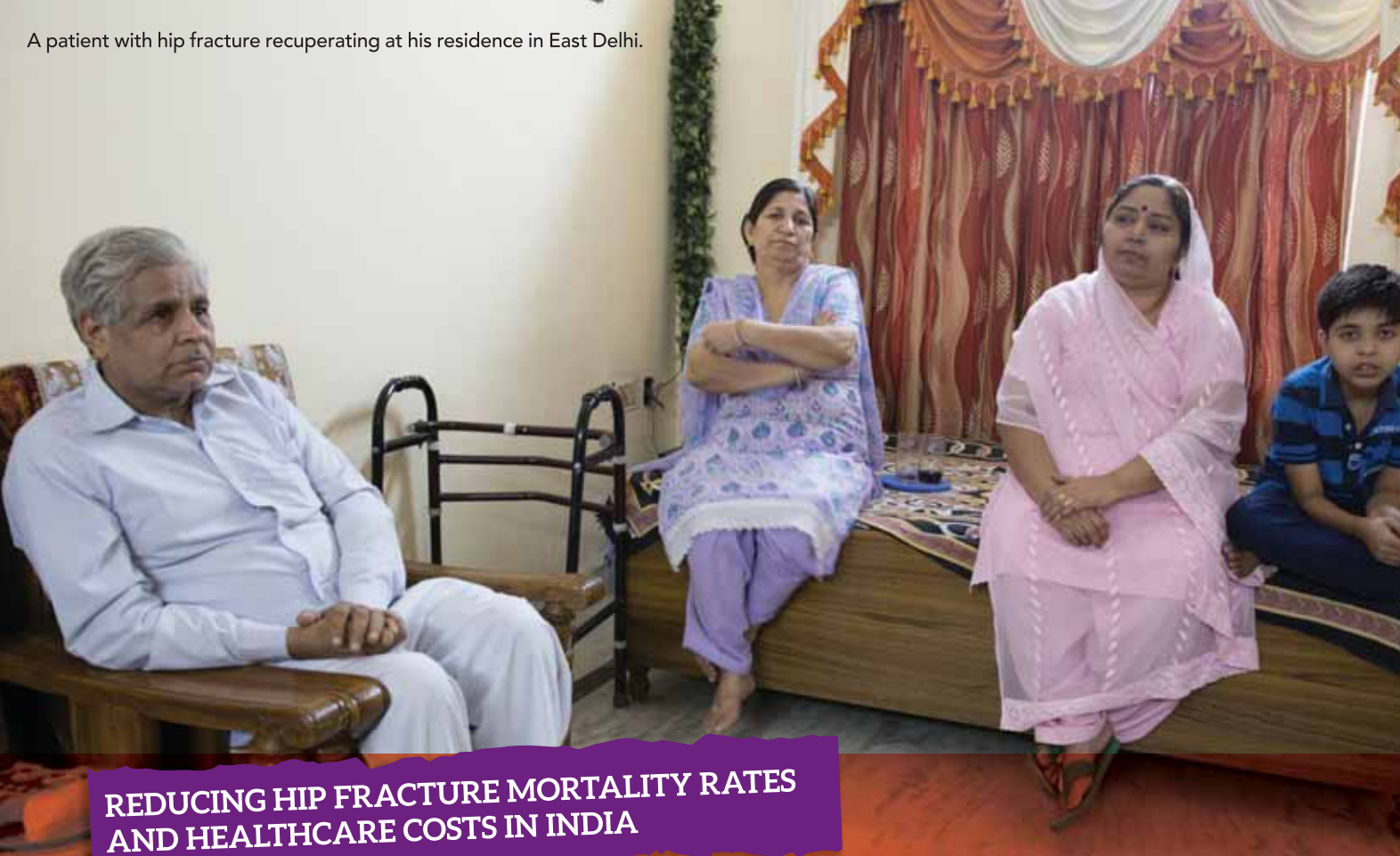
London School of Health and Tropical Medicine

Monash University

University of Oxford

University of Sydney

World Health Organisation, Geneva



REDUCING HIP FRACTURE MORTALITY RATES AND HEALTHCARE COSTS IN INDIA

The Indian population is ageing and an increasing number of people are experiencing disability and poor quality of life. By 2020, almost 10 percent of the population will be older than 60 and the number of hip fractures will reach 600,000. Unless family and hospital practices change, it is projected that 40 percent of people who experience hip fractures will die within a year.

The George Institute for Global Health, India, is working with two leading hospitals in Delhi, the All India Institute of Medical Sciences and the University College of Medical Sciences, to understand current practice of treating hip fracture and identify barriers and enablers to implement best-practice evidence in order to reduce mortality, healthcare costs and improve functional outcomes.

Best practice evidence suggests improving transport of patients with hip fractures to hospital at the earliest opportunity, better coordination among various disciplines including surgeons,

physicians, physiotherapists, nurses and family members to make sure that patients get optimum care during the pre-hospital, hospital and post-discharge phases of care, all of which are in line with international best practice guidelines.

As part of the study, qualitative interviews are being conducted in Odisha to understand patterns of health seeking behaviour in older adults with hip fractures.

"We want to understand things at two levels, the care pathway within hospitals and deduce how people behave when seeking care for hip fractures including any barriers they might experience," says Dr. Lalit Yadav, Research Fellow at The George Institute, India.

"This work potentially will influence policy-makers in establishing an Indian hip fracture registry that can help strengthen the health system and identify any gaps in care," adds Dr. Yadav.


EXPERT'S TAKE:

"...The hip fracture study would help us understand the care seeking behaviour of people and barriers to effective care in hospitals and in communities..."


Dr. Lalit Yadav, The George Institute for Global Health, India

SUPPORT PD

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EXCHANGE PROCEDURE - FLUID DETAILS



Fluid Out	2800
Fluid In	2500
Difference	300

BACK

NEXT

Fact: The number of people with end-stage renal disease is on the rise in India.

MOBILE TECHNOLOGY IN THE SERVICE OF PATIENTS UNDERGOING DIALYSIS AT HOME

People with end-stage kidney disease can be treated either by dialysis or by a kidney transplant. With only a limited number of donor kidneys available for transplant, most patients rely on dialysis for several years and the cost is often very high. Managing these patients at home is considered an alternative option to in-hospital treatment. However, this has the disadvantage of reduced frequency of monitoring, especially when patients dialyse themselves at home in remote locations.

The George Institute for Global Health, India, is in the process of developing an innovative mobile solution on a tablet PC to support patients in undertaking home-based peritoneal dialysis, allowing them to interact remotely with their specialist, thus reducing physical hospital visits.

This system (called *SUPPORT-PD*) has the potential to replace the current expensive specialist-centred care with an innovative patient-centric mobile monitoring and interactive decision making support system, reducing a significant portion of the costs involved in treatment.

"We came up with the idea to study the home monitoring of patients on dialysis this past year as a way to make treatment more accessible, improve satisfaction with treatment and improve outcomes," says Professor Vivekanand Jha, Executive Director of The George Institute, India.

"If people cannot get the support they need, our job is to find a way to get it to them," adds Dr. Oommen John, Senior Research Fellow at The George Institute, India.

"In the longer term, we hope that this approach will help in expanding long-term home dialysis therapy to more number of patients with chronic kidney disease. In India, this figure is as low as 10%, compared to 50 percent in Australia," says Professor Jha.

With Support-PD, patients can use their tablets to obtain advice about their treatment, or contact their treating team who can view their readings remotely and discuss courses of action.

EXPERT'S TAKE:

"We hope that this project will help increase the percentage of people with advanced chronic kidney disease who can benefit from long-term home dialysis therapy"

Dr. Vivekanand Jha, eminent nephrologist and Executive Director, The George Institute for Global Health, India

An elderly woman with hypertension in rural Andhra Pradesh.



OVERCOMING BARRIERS TO HYPERTENSION CONTROL IN RURAL AREAS

In spite of the fact that hypertension (high blood pressure) affects large numbers of people in rural as well as urban areas in India, very few people actually acknowledge that they have high blood pressure or get their blood pressure checked regularly.

With an objective to estimate the prevalence, awareness and treatment of hypertension, identify barriers and facilitators to hypertension control in rural communities in India and develop and test strategies that can be scaled up and implemented across different rural regions of India, The George Institute for Global Health in India is undertaking a research study entitled, "Improving the Control of Hypertension In Rural India: Overcoming barriers to diagnosis and effective treatment (CHIRI)."

The study is funded by the Global Alliance for Chronic Diseases (GACD) and the National Health and Medical Research Council of Australia (NHMRC) and aims to develop strategies to better manage hypertension in rural communities.

The study is being done in collaboration with Monash University, The George Institute for Global Health India and Australia, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Rishi Valley Rural Health Centre and Christian Medical College Vellore. It is being conducted in rural communities in Thiruvananthapuram district of Kerala and Chittoor and West Godavari districts of Andhra Pradesh. The study in the West Godavari area is being led by The George Institute, India.

Hypertension is a condition in which blood pressure is elevated to a level at or above 140/90 mmHg as per current guidelines. This medical condition is called a silent killer as it does not show any clear symptoms. However, severe hypertension can lead to many complications including stroke.

Very little is known about hypertension in rural India, where 70 percent of the Indian population still resides," says Dr. Rama K. Guggilla, Research Fellow at The George Institute for Global

Health, adding, "while people should get their blood pressure checked regularly, we still do not know what prevents them from doing so."

There is some evidence that barriers to hypertension control differ according to the stage of transition, both epidemiological and economic, of the population.

"An improved understanding of the awareness of hypertension in different settings and the barriers and facilitators to prevention, diagnosis and treatment will provide the critical knowledge base we need to overcome these barriers in these differing settings," added Dr. Guggilla.

The study is part of a larger coordinated effort by member organizations of the Global Alliance for Chronic Diseases (GACD) on hypertension prevention and control in low- and middle-income countries (LMICs) that focuses on implementing effective approaches to control high blood pressure through community-based research projects.

EXPERT'S TAKE:

"...While people should get their blood pressure checked regularly, we still do not know what prevents them from doing so..."

Dr. Rama K. Guggilla, Research Fellow,
The George Institute for Global Health, India

A stroke patient doing exercise at home under the supervision of a trained caregiver.



AFFORDABLE STROKE RECOVERY

Stroke is emerging as one of the leading causes of death and disability in India. A high-profile team of researchers led by The George Institute for Global Health is working to provide stroke patients in India access to affordable and effective home-based rehabilitation.

The team has tied up with 14 reputable medical institutions across the country to recruit more than 1200 stroke patients over a period of two years as part of ATTEND, a clinical trial.

These patients will be on a home-based therapy program involving one of their close family members who will be trained as a care-giver.

Approximately 1.5 million people in India suffer a stroke every year with 500,000 people living with a stroke-related disability. It is estimated that the fatality rates of stroke sufferers is between 27 to 41 percent.

"Stroke is a devastating disease that mainly affects younger people in countries like India and the high fatality rate tells us that much more needs to be done in terms of treatment and rehabilitation," says Mr. Mohammed Alim, Research Fellow, The George Institute for Global Health India.

The innovative program has begun training family members of stroke patients so they are able to provide effective home-based care. The pilot study commenced in 2014 and to date 700 patients have already been recruited.

"Our idea in training family members as care-givers is to bring down the direct and indirect costs associated with stroke recovery. This will go a long way in creating an affordable stroke rehabilitation program, as western models are unaffordable," says Mr. Alim.

EXPERT'S TAKE:

"Our idea in training family members as care-givers is to bring down the direct and indirect costs associated with stroke recovery. This will go a long way in creating an affordable stroke rehabilitation program as western models are unaffordable."

Mr Mohammed Alim



DIALYSIS OUTCOMES STUDY

How effective is dialysis as a treatment for patients with chronic kidney disease? And what happens to people and families who have to spend money on prolonged dialysis treatment?

With renal replacement therapy becoming more widespread and more affordable, it has become necessary to measure how patients are progressing under dialysis using national and international benchmarks. This can become a valuable tool in planning health services and demonstrating effective use of resources.

To this end, The George Institute for Global Health has initiated a pilot study of dialysis outcomes in India which could form the basis of a comprehensive national program of data collection. As part of the study, 100 patients commencing chronic hemodialysis in two north Indian nephrology centres, the Post-Graduate Institute of Medical Education and Research, Chandigarh, and Medanta Hospital, Gurgaon have been followed up prospectively for 12 months.

Data has been collected on how effective the treatment has been on the pattern of those which are used by established dialysis registries in other countries. Since the economic impact of dialysis upon patients is huge, data on the direct and indirect costs of the treatment has also been collected.

This prospective cohort study of dialysis outcomes in Northern India is a pilot for the collection of similar comparative data in dialysis centres in different states across the country with a view to the development of a national dialysis registry.

The information on the economic impact of dialysis on patients and their families will provide one of the first detailed insights into this critical aspect of dialysis services.

Data collection to analyse dialysis outcomes in India

While long term studies on health outcomes for dialysis patients are common throughout the world, there is limited data that indicates the specific benefits and outcomes for patients with end stage kidney disease in India. To address this knowledge gap, researchers from The George Institute, India, have established the 'Dialysis Outcomes Study' to collect clinical and economic data relevant to measure the outcomes for kidney failure patients who are started on dialysis in India. This data could potentially be useful to inform the policy for a comprehensive and consistent national program for dialysis treatment. Executive Director of The George Institute, India, Professor Vivek Jha, who is also the principal investigator in the study, says it has become necessary to measure how patients are progressing under dialysis using national and international benchmarks. "The information on the economic impact of dialysis on patients and their families will provide one of the first detailed insights into this critical aspect of dialysis services," Professor Jha says. The study is a pilot being conducted in northern India with a view to the development of a national dialysis registry.

Fact: Dialysis is often the only hope for patients with chronic kidney disease and there is acute shortage of dialysis centres in the country.



SMART WAY TO TACKLE COMMON MENTAL DISORDERS

As part of a unique initiative to identify and manage Common Mental Disorders (CMDs) in the community, The George Institute, India, is undertaking a first-of-its-kind study where mobile-based technology will be used by community health workers and primary care doctors in selected villages of Andhra Pradesh. This will be preceded by a campaign to increase mental health awareness and reduce stigma against mental illness in the community.

"The idea is to use a mobile device based electronic decision support system to improve the identification and management of individuals with CMDs," says Dr. Pallab Maulik, Deputy Director of Research and Development, The George Institute for Global Health, India and principal investigator in the project.

The global burden of mental disorders and treatment gap is large, especially in countries like India due to poor awareness about mental health and few available resources for providing care. Studies indicate that one in four adults in India suffer from some common mental disorder like depression, anxiety or emotional problems in their life.

Available research also indicates that in countries like India only 15 to 25 percent of people suffering from any mental disorder receive any form of care. CMDs especially need simple treatment that can be delivered easily by primary healthcare workers. Adequate care may be in the form of medicines or psychological help, and often needs good social support.

"A potential strategy to narrow this gap is by enabling the available primary-care workforce through provision of affordable, accessible and high-quality electronic clinical decision support," says Dr. Maulik.

The study is being funded by two agencies, Wellcome Trust / DBT India Alliance and Grand Challenges Canada, and is being conducted in two sets of villages in West Godavari district of Andhra Pradesh with different targeted populations including scheduled tribes. The anti-stigma campaign has started across all villages.

"The need for such a campaign was expressed in earlier discussions with some villagers and the campaign is being received well across the villages," says Siddardha Devarapalli, Research Fellow on the project.





SMARTHEALTH IN PRIMARY HEALTHCARE CENTRES A RAY OF HOPE FOR PATIENTS AT RISK

Until a community health worker visited the house of Radha in Lankalakoderu village, neither she nor her family members suspected that she was at high risk of cardiovascular disease. Shyamala, the Accredited Social Health Activist (ASHA) of the village had been going from house to house with a smartphone based application, designed by The George Institute, allowing her to screen individuals with high risk of getting heart disease as part of the SMARThealth project. After a few simple questions, taking her weight and measuring her blood pressure, she told the 60-year old that her blood pressure was very high, she was at high risk of having a cardiovascular illness and so must visit the primary care doctor immediately.

Dr. Sowjanya, medical officer at the Lankalakoderu Primary Healthcare Centre saw her in February this year. She had another tablet with a different version of the SMARThealth app (meant for doctors). She was able to quickly confirm Radha's high risk status and put her on medication immediately. Assisted by regular prompts from the app, the ASHA worker has been following up with her regularly and Radha has made three visits to the doctor since then. The app generates alerts for the ASHA worker and is able to send messages to patients' phones as well. The result is that Radha's blood pressure is under control now, and her risk for cardiovascular illness has improved.

This unique project involves screening of community members at high risk of cardiovascular illness followed by consultation with a doctor either at a special CVD clinic in the village or at a regular PHC centre. It is being run in 36 villages as part of a community randomised control trial that is designed to test the effectiveness of this task-sharing mechanism enabled by technology.

"The idea is to deliver good quality affordable healthcare to as many people as possible by empowering community health workers with the tool that can help them identify high risk patients and then refer them to the doctor," says Dr. Praveen Devarasetty, Head of Primary Healthcare Research at The George Institute for Global Health, Australia.

Dr. Sowjanya has seen 200 patients at high risk of cardiovascular disease so far which she would not have been able to do in her normal course at the Primary Healthcare Centre. "We need this kind of focus and I am happy to be a part of this project," she says, adding that patients whom she has seen two to three times are actually showing good results.

The doctor prescribes simple blood pressure medicines after verifying the risk category of each and every individual. "The real challenge we face is the availability of all kinds of medicines at the primary healthcare centre," she adds.

"The project that had started in six PHC's in West Godavari district six months ago is now being extended to six more PHC's. In the final phase, we will be adding six more," says Dr. Praveen. "This will ultimately help us compare the results in all the villages over time periods when they were part of the project and when they were not," adds Dr. Praveen.

This large community-based randomised control intervention is seeking to prove two things. Firstly, that community health workers can work as frontline personnel in a task-sharing mode and that technology can help them do the screening effectively, and second, that doctors can be assisted by an electronic-decision support system in tackling the burden of CVD's in rural areas.

"We call it SMART for Systematic Medical Appraisal, Referral and Treatment," says Dr. Praveen, adding that the plan is to systematically extend the framework to other diseases.

ASHA workers are happy to be a part of the project. "I have referred a large number of high risk cases from my village to the doctor and am following them up regularly. It makes me happy to see that people are actually seeing their blood pressure coming down and the doctors are also placing a great deal of confidence in us," says Devi Reddy of Juvalapalem village, one of the ASHA workers involved in the project.



Arguing that SMARThealth shows the way for transformational healthcare delivery in a country where there is only one doctor per 30,000 population in rural areas, Professor Vivekanand Jha, Executive Director of The George Institute for Global Health, India, says "We are already extending SMARThealth to the field of mental health and diabetes and by spearheading such transformational research, we hope to play a significant part in reducing premature deaths and disability in India."

EXPERT'S TAKE:

"...The idea is to deliver good quality affordable healthcare to as many people as possible by empowering community health workers with the tool that can help them identify high risk patients and then refer them to the doctor..."

Dr. D. Praveen, The George Institute for Global Health India

COMMUNITY SPEAK:

"I have referred a large number of high risk cases from my village to the doctor and am following them up regularly. It makes me happy to see that people are actually seeing their blood pressure coming down and the doctors are also placing a great deal of confidence in us..."

Devi Reddy of Juvalapalem village, one of the ASHA workers involved in the project.

A rural interviewee of the Salt Reduction project testifying the use of high salt in food.



DEVELOPING A NATIONAL SALT REDUCTION PROGRAM FOR INDIA

The George Institute for Global Health, in collaboration with the Public Health Foundation of India, is gathering information on dietary salt intake levels among a sample of people in North and South India as well as nutrient information on packaged food available for purchase in supermarkets and retail outlets across the country.

The aim is to put together evidence to develop a national salt reduction program for India, tailored to the specific needs of the country.

In addition, the investigators have completed a stakeholder survey with key representatives from the food industry and the central government as well as holding focus group discussions on dietary choices and behaviour among urban and rural populations.

The implementation of this program involves three main elements: working with the food industry to reformulate foods and meals, campaigns to change consumer behaviour and, efforts to change the food policy environment.

The foods to focus on and population groups to be targeted will be based on the evidence gathered in this study.

So far, data on more than 7000 products has been gathered and keyed into a global food composition database. A preliminary analysis shows gaps in labeling norms and the need for adhering to international Codex guidelines.

Claire Johnson, Research Associate on the project says, "The project aims to generate evidence to ensure that steps such as sodium content being displayed on packaged food products, becomes legally enforceable and also to provide the evidence required to formulate a national salt reduction program in collaboration with key stakeholders."

With over 1.25 billion people in India, and a projected 1.69 billion by 2050, the need to tackle India's key healthcare issues is apparent. Excessive salt consumption is a leading causes of hypertension and can lead to other chronic illnesses including stroke, heart attack and kidney disease. The National Salt Reduction Project will assess the current level of salt intake in the general adult population, as well as attitudes and behaviours relating to sodium

Fact: Hypertension kills 170,000 people in India each year.

intake in India, to obtain the evidence needed to establish a national salt reduction program and provide a comprehensive health policy framework and scalable program for the Indian government. According to Research Associate Sudhir Raj Thout at The George Institute, India, "Simple measures like implementing a National Salt Reduction Program for India are key in reducing preventable death and diseases associated with hypertension." It is anticipated that the program will include advocacy strategies and action plans that spans grocery stores, street vendors, chain restaurants, food manufacturers, and consumers for reducing the salt intake in India.

Panelists at a critical appraisal skills workshop in Bhubaneswar.

Photo: Unicef



CRITICAL APPRAISAL SKILLS PROGRAM FOR JOURNALISTS

In an effort to address the challenges of public health reporting, The George Institute for Global Health, in collaboration with UNICEF, Oxford University and Reuters, is working on a critical appraisal skills program for journalists.

The program will train journalists to report on health issues in a fair, complete and balanced way. Challenges to routine immunisation will be taken up as a case study and the media will learn how to report extensively on the issue without creating a scare.

Whilst media coverage of vaccinations has a wide reach in India, the challenges of being the second most populated country with a diverse range of socio-cultural conditions, positions it among the top four that account for 50% of global under-five mortality.

The largest numbers of unvaccinated children in the world are from India, with 50% of mothers not knowing about the vaccine or the appropriate age to vaccinate.

Six workshops have been held across the country to take suggestions from journalists and media academics on where the skills and knowledge gaps are, when it comes to public health reporting. The Certificate Course on Critical Appraisal Skills which will be developed later this year and is based on all inputs received at these workshops, aiming to better equip journalists with the skills needed to cover medical reporting accurately.

The course offers a unique opportunity for journalists and media to provide much needed information to the public on the importance of vaccinations and how to access them.

The program focuses on evidence based critical appraisal essentially involves four steps:

- Asking the right questions around the issue
- Tracking down the best evidence
- Critically appraise the evidence
- Contextualise based on current concerns

Fact: Critical appraisal is the process of carefully and systematically examining research evidence to judge its trustworthiness, and its value and relevance in a particular context.



USING BIG DATA ANALYTICS FOR NCD RESEARCH

There is a severe lack of evidence on use of health services in India. Current evidence on quality and outcomes of care from India is limited and restricted to studies conducted at tertiary level and in teaching hospitals. However much of the actual health services delivery happens in settings like private and small hospitals which are rarely included in research projects and are poorly regulated.

As a result, there is little evidence-based support available to policy makers, administrators and payers on both demand as well as the supply side of health services in India. The situation is no better in other low- and middle-income countries. However, there are existing administrative and insurance related data-sets that are available in India which can be accessed, and which provide some data about usage patterns and cost of providing healthcare to different sections of the community. The magnitude of the size of those data-sets, itself, are a huge potential to gather good evidence about such patterns, even if the data is heterogeneous and has different limitations.

Keeping that in perspective, The George Institute for Global Health, India, focuses on identifying, collating and analysing existing clinical, administrative and community-based data-sets from India to build a region specific evidence-base on utilisation, quality and outcomes of hospital care. The goal is to build a health databank, and develop data processing and analytic systems to audit existing data and enable prospective monitoring based on big data philosophy. We want to use the data to gather evidence that can then be shared with the government level policy makers, or different institutional level administrators, to plan more strategically and develop tools to improve healthcare delivery and make it more cost-effective.

Small steps to "Big Data" in India

Overall, implementing better information sharing processes across the healthcare system can result in better patient outcomes. Despite this, current evidence on the quality of healthcare and its outcomes throughout India are limited, with information rarely being shared between the public and private healthcare systems. With much needed reform in healthcare delivery and financing in India, government and policy makers will benefit from better information on the burden of disease in order to make appropriate reforms to create a sustainable health systems. The 'Big Data' project aims to bridge the knowledge gap by applying proven methodologies in health services research with routinely captured clinical and non-clinical data to generate a body of evidence and a reliable health database. With over 25,100 hospitals in India, data collected in this project will be able to build a better capacity healthcare system in India.

One such recent exercise involved analysing the Rajiv Gandhi Aarogyasri Community Health Insurance Scheme of Andhra Pradesh and Telangana.



OXFORD INDIA LECTURE

Professor Robyn Norton, Principal Director of The George Institute for Global Health, and James Martin Professorial Fellow at the Oxford University, gave the first Oxford India Lecture based on her global experience and research into healthcare provision in diverse communities around the world.

This was the first time that the Oxford University organised such an event in India, and is only the second time it has done so outside the United Kingdom following last year's Oxford China Lecture in Shanghai. It reflected the strong ties the University has in India, particularly through world-class partnerships with many Indian research institutions, and connections through alumni working as academicians, researchers and policy-makers.

Professor Norton's lecture, 'Mobilising Healthcare: Harnessing science, technology and entrepreneurship', for an invited audience was introduced by the Vice-Chancellor of Oxford University, Professor Andrew Hamilton. It looked at how pulling together expertise from business and cutting edge research as well as the latest technology can ensure that all the world's people can access decent healthcare in the years to come.

Professor Norton believes that the transformative change needed in healthcare, in India, the UK and around the world, will need to harness science, technology and entrepreneurship, and be based on the best medical evidence.

Professor Norton used her lecture to look at how technology, together with cutting edge research and expertise from business, can ensure that many more people can access decent healthcare in the years to come. She gave a number of examples of medical research taking place in India through Oxford-India research partnerships and through the work of The George Institute for Global Health.

"Currently, five out of seven billion people on the planet do not have access to safe, effective and affordable healthcare," Professor Norton said. "Transformative change is required if the healthcare needs of the world are to be met. Healthcare services must move away from their reliance on expensive hospital care to a greater focus on primary care and preventive health services. Patients and populations must also be more actively engaged in their healthcare, and mobile technologies will be part of the solution."

EXPERT'S TAKE:

"Transformative change is required if the healthcare needs of the world are to be met."

Professor Robyn Norton, Principal Director and Co-Founder, The George Institute for Global Health



TRIUMPH - TRIPLE PILL FOR HYPERTENSION

India has high prevalence of hypertension and evidence has shown that awareness and control of hypertension is relatively poor even amongst those who are well educated and have access to screening programs. Traditionally, the recommended way to treat hypertension is to start treatment with single drug and subsequently, up-titrate and/or add drugs from other classes, as necessary.

This approach involves many visits to doctor, which can be costly and time consuming for both doctor and patient. Most patients with hypertension will need two or more blood pressure (BP) lowering drugs to control their BP.

“There is good evidence to suggest that starting patients directly on a triple combination treatment (i.e. three medications combined into one) with the included drugs at low doses might achieve the BP lowering effects of a two-in-one full strength medication but with even less side effects,” says Dr. M. Abdul Salam, Research Fellow, The George Institute India.

The goal of the study is to understand the effectiveness, cost-effectiveness and acceptability of a simplified strategy using a low dose combination of a 3-in-1 antihypertensive pill for the management of hypertension in India.

The study called TRIUMPH is a randomised controlled trial that will recruit 700 participants with mild to moderate hypertension from about 20 hospitals in India. It will test whether provision of a Triple Pill compared to usual care improves blood pressure (BP) control at 6 months. The main trial will be complemented by economic and process evaluation.

*Fact: Hypertension kills
170,000 people in India
each year.*



THE GEORGE INSTITUTE INDIA TEAM

Vivekanand Jha
Pallab K Maulik
Amit Khanna
Mohammed Alim
Abdul Ameer
Rajesh Arora
Y. Govind Babu
K. Suresh Babu
Shailaja Chilappagari
Rama Krishna Guggilla
Oommen John
T. Naga Jyothi
Sudha Kallakuri
Kannan Krishnaswamy
D V Siddhardha Kumar
Kishor Mogulluru
Venketswar Nayak
D. Praveen
T. Rajani
T. Sudhir Raj
D. Rambabu
N Balaji Ro
Alpana Saha
Abdul Salam
Binu Thomas
Vadlami Vamsikrishna
Lalit Yadav
Chetan Rajsingh

Executive Director
Head, Research & Development
Director, Finance & Operations
Research Fellow
Project Manager
Manager - Accounts
Administrative Manager
Research Fellow
Senior Biostatistician
Research Fellow
Sr. Research Fellow
Administrative Officer
Research Assistant
Communications Manager
Research Fellow
Research Fellow
Finance Controller
Head, Primary Health Care research
Administrative Officer
Research Associate
Project Supervisor
Senior Project Supervisor
Head, Fundraising
Research Fellow
Executive Assistant
Statistical Programmer
Research Fellow
Account Executive, Finance



FUTURE PROJECTS AT THE GEORGE INSTITUTE INDIA

CONTACT US

The overall research strategy of The George Institute, India will be driven by the long term objectives set in the research strategy of achieving the health of millions of people in India by reducing premature deaths and disability. Based on that some key anticipated projects in the area of non-communicable diseases and injuries are the following:

1. Diabetes and allied health

This body of research is based on the fact that India continues to have a large number of people suffering from diabetes and related complications. It is estimated that about 9 percent people suffer from diabetes in India (more than 65 million). Diabetes related complications are also a major cause of worry. Initial results also indicate that gestational diabetes that leads to adult onset diabetes later on is also high.

Future research will aim to focus on these different components of diabetes and will develop interventions to reduce the burden of this condition in the population.

2. International Orthopaedic multi-centre Study in Fracture Care (INORMUS)

Worldwide trauma is amongst the top three leading causes of death in the first four decades of life. For every death attributable to trauma, three patients survive but are permanently disabled.

INORMUS is an observational study across three continents, 18 countries and 40 clinical sites with over 40,000 participants. This research work is a collaborative project with The George Institute for Global Health, the Canadian Institute of Health Research and McMaster University.

The George Institute for Global Health is the coordinating centre for sites across Asia and will use 40,000 participants from low- to middle-income countries across the globe.

3. Indian Chronic Kidney Disease Study

The George Institute with funding support from the Department of Biotechnology (DBT) of the Government of India will facilitate the 'Indian Chronic Kidney Disease' study, a first-of-its-kind longitudinal study that will provide insights into prevention and better management of chronic kidney disease in India.

As part of this study, researchers will recruit around 5000 chronic kidney disease (CKD) patients and follow them up over a period of five years. The first-of-its-kind longitudinal study will provide insights into the burden of disease, the local causes of CKD and a better assessment of the risk factors associated with the progression and complications of CKD.

New Delhi Office

219-221, Splendor Forum, Plot No. 3, Jasola District Centre
New Delhi 110025 India

Tel: +91 11 415 880 91-93
Fax: +91 11 415 880 90

info@georgeinstitute.org.in

Support

Alpana Saha
Head of Fundraising

219-221, Splendor Forum, Plot No. 3, Jasola District Centre
New Delhi 110025 India

Tel: +91 11 4158 8091-93
Fax: +91 11 4158 8090

asaha@georgeinstitute.org.in

Hyderabad Office

301, Second Floor, ANR Centre, Road No 1, Banjara Hills
Hyderabad 500034 India

Tel: +91 40 3099 4444
Fax: +91 40 3099 4400

info@georgeinstitute.org.in

Media

Kannan Krishnaswamy
Communications Manager, India

219-221, Splendor Forum, Plot No. 3, Jasola District Centre
New Delhi 110025 India

Tel: +91 11 4158 8091
Fax: +91 11 4158 8090

kkrishnaswamy@georgeinstitute.org.in



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