



# 2020 ANNUAL REPORT



The George Institute  
for Global Health India

*Better treatments. Better care. Healthier societies.*

# ABOUT US

## Our mission



Our mission is to **improve the health of millions of people worldwide**.  
In India, we aim to reduce premature and preventable deaths and disabilities.

## Our values



### **Humanitarian commitment**

Spurs us to tackle the health issues affecting high-risk and disadvantaged people worldwide



### **Focus on excellence**

Ensures we will produce scientific evidence that is ethical and of the highest quality



### **Creativity**

Encourages us to challenge traditional thinking and provides an impetus for new and innovative solutions to the world's leading health problems



### **Integrity**

Underpins all our work and interactions, including our collaborations with partner organisations worldwide



### **A 'can-do' approach**

Helps produce timely, effective action, even in the face of adversity or other barriers to implementation



### **Emphasis on impact**

Will ensure our work has real consequences for those most vulnerable to disease and injury

## Our strategy

### **RESEARCH GOALS**



#### **Better Treatments:**

Finding better treatments for the world's biggest health problems



#### **Better Care:**

Transforming primary health care to deliver better health to more people



#### **Healthier Societies:**

Harnessing the power of communities, governments and markets to improve health

### **IMPACT GOALS**



#### **Advocacy & Thought Leadership**

The growth of effective advocacy and a thought leadership program aligned to our research goals



#### **DISRUPTIVE ENTREPRENEURSHIP**

The growth of a disruptive entrepreneurship program aligned to our research goals



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**The George Institute for Global Health**

CIN: U74900TG2007NPL055085

**New Delhi Office**

308-309, Third Floor, Elegance Tower  
Plot No. 8, Jasola District Centre  
New Delhi 110025 India  
Tel: +91 11 4158 8091-93  
Fax: +91 11 4158 8090

**Hyderabad Office**

Plot No. 58 & 59, Ground Floor,  
Saranya Building 8-2-248/1/7/58 & 59A,  
Nagarjuna Circle, Punjagutta  
Hyderabad 500082 Telangana, India  
Tel: +91 40 4972 4444  
Fax: +91 40 4972 4400

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In India, we are registered under Section 25 of the Companies Act, 1956 (now section 8 of the Companies Act, 2013) and recognised by the Department of Scientific and Industrial Research (DSIR), Government of India.

We are also registered under Foreign Contribution (Regulation) Act, 2010 as well as under sections 12A and 80G, of the Income Tax Act, 1961



# FROM OUR EXECUTIVE DIRECTOR



Our researchers responded to the COVID-19 crisis by undertaking a program of research and policy engagement that helped create awareness and bring insights into treatment for COVID-19.

**Vivekanand Jha**  
Executive Director  
The George Institute, India

The year covered in this report (2019–20) has been a period of considerable growth and consolidation at The George Institute for Global Health, India (TGI). We entered into new partnerships, undertook more impactful collaborative research programs and set up institutional mechanisms aimed at policy uptake of research that will have far-reaching impact in terms of the work we do.

This year, we entered into a partnership with the Manipal Academy of Higher Education (MAHE) for collaborative research, faculty exchange program and preparing future public health leaders. Many of our researchers now have conjoint faculty positions at the Prasanna School of Public Health at MAHE. Together, we also launched a first of its kind leadership in public health course which is aimed at honing the skills of professionals wanting to work in the area of public health.

We established a rapid evidence synthesis unit at TGI with support from WHO and the National Health Systems Resource Centre of the Government of India. The unit undertook rapid policy analyses on a whole host of public health topics involving role of frontline health workers, use of technology and strengthening public health systems. An MoU was signed with the Bhopal-based thinktank, Atal Bihari Institute for Good Governance and Policy Analysis and rapid synthesis work done to support the Government of Chhattisgarh.



We continued to look at public health from the lens of health equity research. The health equity action lab at TGI undertook relevant programs of research and training that will help public health researchers and policymakers understand the importance of equity in decision making and how to incorporate equity in their research.

We also examined the role data plays in public health research and organised a data science consultation which led to the drafting of a new data strategy at TGI.

Our primary health care research and the flagship project, *SMARThealth*, expanded to new areas and to new research domains including kidney health and diabetes, and with the help of our global networks to newer geographical areas like Thailand and Indonesia. We also established the Primary Health Care Research Consortium (PHCRC) aimed to establish and strengthen a community of researchers in low- and middle-income countries and develop a knowledge base in priority areas.

Many other relevant areas of research in the area of non-communicable diseases which the Institute has been undertaking expanded during the year – we started a new project to investigate the role of heat stress in chronic kidney disease, continued to bring new insights to the research on injury, drowning, burns and health impact of disasters, are expanding our mental health research, and our research with ASHA workers broadened to include their role in the health systems and understanding how it can both be incentivised and formalised.

Our policy engagement work continued. Along with other stakeholders, we made a successful bid to the WHO for including combination medicine for hypertension in the list of essential medicines. We also worked with the Government for framing guidelines on peritoneal dialysis.

This year's evidence2policy lecture was delivered by Dr. Rajani Ved, Executive Director of the National Health Systems Resource Centre (NHSRC), who reflected on the learnings from Indian Government's implementation of public



ASHA worker attending training on use of SMARThealth application

health strategies. Policy consultations on mental health and health equity, and continued focus on innovation in digital health were other key highlights of the year.

Our researchers responded to the COVID-19 crisis by undertaking a program of research and policy engagement that helped create awareness and bring insights into treatment for COVID-19. We are now doing multiple trials related to prevention and treatment of COVID-19 and are also looking at the impact of COVID-19 on non-communicable diseases.

I take this opportunity to thank all stakeholders who have been with us during our journey of growth as well as creating stronger and firmer roots—researchers, partners, institutions, experts, academicians, government departments, and our valuable staff members. We look forward to another fruitful year of successful evidence-based work, engagement with stakeholders, and expanding the scope of our implementation research work.

**Professor Vivekanand Jha**

Executive Director,  
The George Institute for Global Health, India

# BETTER CARE



COVID-19 has starkly revealed the importance of getting primary care right. Those of us in the Better Care team take seriously our responsibility to offer solutions, evaluate interventions and approaches, and ensure that no one is left behind – particularly those most affected and least heard – in the receipt of care, as well as in its design and formulation.

**Devaki Nambiar**  
Program Head  
Health Systems and Equity,  
The George Institute, India





## Revolutionising rural health care

The Systematic Medical Appraisal, Referral and Treatment - SMART *health* platform is at the heart of the Institute's objective to provide better health care to people living in rural areas of the country. The project started first in the West Godavari district of Andhra Pradesh 2010, and has undergone a process of reiterative refinement over the years, with expansion in scope and ambition. In recent years, it has been scaled up in other locations within India as well as internationally.



ASHA worker feeding patient information in SMART*health* application for common conditions

The SMART*health* program is a system level intervention that allows frontline health workers to act as the focal point of healthcare delivery in the community by screening individuals for common conditions through a smartphone based decision support system. Screen positive individuals receive appropriate lifestyle advice and health education by frontline health workers. High-risk cases are referred to doctors who have access to the screening data and use the clinical decision support system to prescribe medicines. Upon return to the community, frontline health workers, using the platform, again follow up with the individuals to ensure that they adhere to the given medical advice.

Data collected at regular intervals through these projects have shown that such use of technology by frontline health workers as well as task-sharing between doctors and frontline health workers is well accepted, improves health indicators and holds potential for improving health care in rural areas by upskilling health workers, identifying disease early and bringing in preventive care at the right time.

SMART*health* platform has been expanded to support management of a variety of health conditions including but not limited to cardiovascular diseases, diabetes, mental health, kidney diseases, high-risk pregnancies and is being evaluated for management of multimorbidity.

Through our global networks, the platform is being implemented in Thailand, Myanmar, Indonesia, Vietnam and Sri Lanka for a variety of health conditions. A COVID-19 screening application developed for use by health workers is being planned for use in Indonesia. Lessons from these countries will provide insights and inform further development and scale-up of the platform.

The next phase of the platform is to develop an integrated disease management system that can help with expansion beyond NCDs, starting with management of tuberculosis.

**Funding support:** Global Alliance of Chronic Disease.

**Investigators:** Dr D Praveen

**Duration:** 2018–2021



Quality primary health care begins with checking blood pressure

### Promoting high quality primary health care

Strong health systems are built around strong primary health care (PHC). Strengthening PHC is critical to achieving the targets enshrined in goal 3 of the Sustainable Development Agenda. However, the state of PHC implementation research in low- and middle-income countries (LMICs) is currently fragmented, uncoordinated, underfinanced, and too frequently focused on measuring gaps and improving inputs to care –including supplies, infrastructure, and financing – while ignoring the core function of service delivery within PHC.

The Institute hosts the Secretariat for the Global Primary Health Care Research Consortium (RC) with the goal to develop and maintain a global PHC research network and conduct prioritized and policy-relevant research to support country and global efforts to build high-quality systems in pursuit of universal health coverage and Sustainable Development Goals.

The consortium will support good practices to promote primary health care across the globe by identifying areas where it has worked well and sharing the learnings across different settings. Tools like evidence gap analyses and multi-country comparisons will be used to maximise knowledge.

**Funding Support:** Bill and Melinda Gates Foundation.

**Investigators:** Dr D Praveen

**Duration:** 2019–2021

### A community-based strategy to combat common mental disorders

Approximately 150 million people in India are affected with common mental disorders like depression, anxiety, stress and associated risk of suicide. Only about 20% of these individuals receive medical care.

Since training mental health professionals in enough numbers is not a feasible solution, the need of the hour is to develop innovative strategies to increase access to a basic standard of mental healthcare.

We conducted a large-scale pilot study involving screening of the high-risk population by village health workers (ASHAs) using the SMART*health* platform in the West Godavari region of Andhra Pradesh and found depression in about 12% population with almost 40% of them having suicidal thoughts. The pilot study led to significant increase in mental health service use from 3% pre intervention to 80% post intervention and demonstrated a sustained positive effect on increasing mental health awareness and reducing stigma related to help-seeking. Depression and anxiety symptoms also reduced significantly.

The SMART Mental Health cluster randomised trial is the definitive study that examines the feasibility, clinical effectiveness and cost-effectiveness of a multifaceted primary healthcare worker intervention involving task sharing, anti-stigma campaign and technology-enabled mental health services delivery model. The ultimate objective is to provide better mental health care to people in rural areas.

This trial is being conducted across 44 primary health centres in Andhra Pradesh and Haryana. The formative phase has been completed and will be followed by screening of the community to identify those at high-risk of depression and suicide.

**Funding Support:** National Health and Medical Research Council, Australia

**Investigators:** Dr Pallab K. Maulik, Siddhardha Kumar, Sudha Kallakuri

**Duration:** 2018–2022



Better mental health care to people in rural areas is a must



## Lifestyle intervention to support women with gestational diabetes – the LIVING study

About 35% to 40% of women who develop diabetes during pregnancy run the risk of developing type-2 diabetes within five years of giving birth. Only 17.5% of women in India are aware of diabetes that develops during pregnancy, a condition known as gestational diabetes mellitus (GDM), and its complications later in life.

In collaboration with the All India Institute of Medical Sciences, we are conducting a study to evaluate whether an affordable and culturally acceptable lifestyle intervention provided to women with GDM in South Asia soon after the delivery of their child can delay the onset of type-2 diabetes.

The study is in the form of a randomised control trial with one group receiving the intervention and the other in the control group and is being conducted in 19 public and private hospitals in India, Bangladesh, and Sri Lanka. More than 1600 women have been randomised into the study and are being followed up.

**Funding support:** National Health and Medical Research Council, Australia  
Indian Council of Medical Research (ICMR)  
The Global Alliance for Chronic Diseases

**Investigators:** Dr Josyula K. Lakshmi, Renu John  
**Duration:** 2015–2020

## Innovative M-health led Participatory Approach to Comprehensive Screening and Treatment of Diabetes (IMPACT-Diabetes)

Primary health centres are the first level of contact for management of patients with diabetes though the distances required to travel, uncertainty regarding the availability of doctors, and cost in terms of loss of wages deter people from availing health services provided at such centres.

IMPACT is a hybrid effectiveness-implementation trial that evaluates feasibility to identify and manage diabetes and its complications in the community within the existing healthcare systems in rural India. Using the SMART<sup>health</sup> platform, it involves frontline health workers using a clinical decision support application and screening people with diabetes in the community, referring the high-risk cases to primary health centres and following them up for adherence to treatment.

The frontline health workers and primary care physicians received a training program and have been delivering a community-based intervention for nine months using an application that incorporated



Pregnant women getting screened for gestational diabetes mellitus (GDM)

a plain language technology tool for screening and management for diabetes based on latest Indian guidelines.

The study has been completed in eight primary health centres in the Guntur district of Andhra Pradesh and Rohtak district of Haryana. More than 1700 rural and peri-urban residents participated in this study. If found effective, the intervention has the potential to reduce the burden of diabetes in rural areas.

**Funding Support:** European Foundation for the Study of Diabetes

**Investigators:** Prof Vivekanand Jha, Abhinav Bassi

**Duration:** 2018–2021

## India dialysis outcomes registry

Diabetes and hypertension are responsible for more than 50% of kidney failure in India according to a pilot study conducted by the Institute. There is enormous economic disparity in treatment, and this has impact on patients and their families. Regular dialysis treatment has a positive impact on the economic well-being of the patients by keeping them normal and productive, but many patients are forced to give up dialysis for financial reasons.

Following the pilot, a multi-centre registry of adult patients with end-stage kidney disease commencing dialysis was set up across 12 centres in 10 states. The registry is in the form of an easy to use, secure, web-based data collection tool based on open source platforms and is being used to monitor and follow the patients for two years.

Recorded data of more than 1000 patients has been entered in the registry and the patients are regularly followed up at regular intervals to assess health outcomes and quality of life. Data is being collected on the impact of the treatment modalities, comorbidities, socio-economic determinants, and quality of life.

The registry can be used as a tool for the assessment of quality of care, process measures and clinical outcomes.

**Funding Support:** Indian Council for Medical Research

**Investigators:** Prof Vivekanand Jha, Dr Oommen John, Dr Sumaiya Arfin

**Duration:** 2018–2021



Frontline health workers screening patient for hypertension and diabetes

### Assessing frontline provider workflows for hypertension and diabetes

Given the growing burden of cardiovascular diseases (CVD) nationwide and widespread inequalities in its management and control, there is a need for India to incrementally build capacity at the state level. The comprehensive primary healthcare program roll-out envisaged by the Government of India has proposed an expanded role for community health workers in CVD prevention and control.

The study is embedded within the national program and will assist with state and district level decision-making to improve the delivery of CVD-related services. Assessing the work that community health workers do within a span of 24 hours is intended to assist frontline health workers in improving their time management and identify areas of focus for screening.

The project aims to assess coverage of, and the amount of time spent by frontline health workers in screening, treatment, and follow-up for hypertension and diabetes in two Indian states. Time motion study methods were adopted to shadow frontline health workers for three days and see how their time was spent.

**Funding Support:** Harvard University  
**Investigators:** Dr Devaki Nambiar  
**Duration:** 2018–2019

### Assessing equity of Universal Health Coverage in India

Health interventions tend to advantage already privileged populations, and even the introduction of reforms can paradoxically result in enhanced inequity. This must be addressed if we are to achieve the goal of universal health coverage (UHC) and leave no one behind.

Interdisciplinary research on magnitude of inequalities as well as the mechanisms that perpetuate them using both quantitative and qualitative research methods is needed to get insights into the problem.

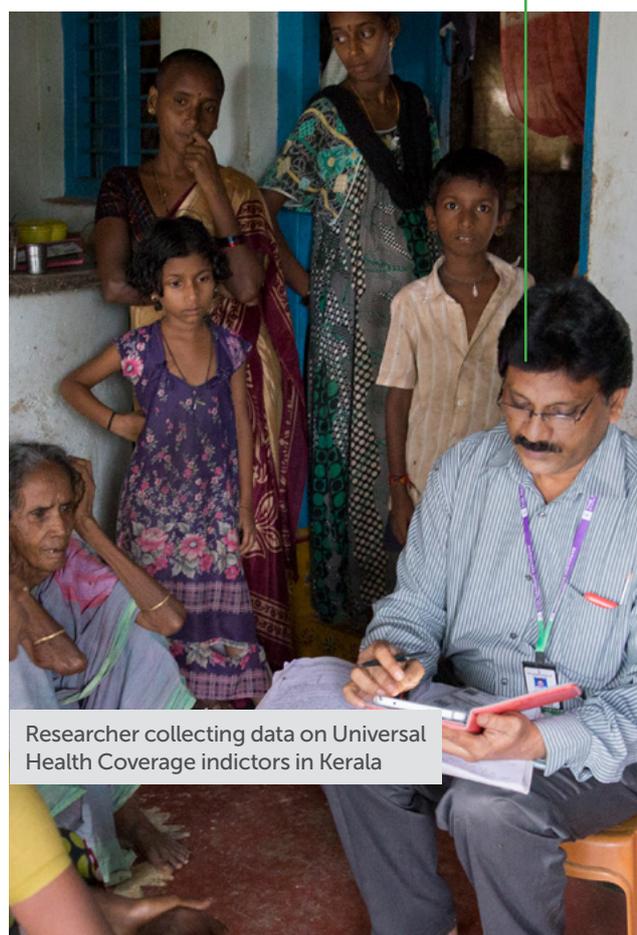
The project aims to assess the implementation of UHC related reforms under the flagship Aardram mission in the Indian state of Kerala using a variety of data sources and analysis methods. Data on both quality and reach of services including people satisfaction will be shared with the Kerala Government and this can help them cover left-out populations and also improve the service.

A list of UHC indicators linked to ongoing monitoring activities was shortlisted and field data collected to assess its quality. This was complemented by primary data collection at household and facility levels across four districts of the state.

This analysis builds on a novel and innovative approach undertaken with the World Health Organisation to build capacity in the monitoring of health inequalities across regions. Participatory methods are being employed to assess the magnitude and mechanisms of inequalities in underserved populations.

The project draws from and seeks to support the work of the State health department, collaborating also with local academic partners, under the mentorship of eminent health equity scholars.

**Funding Support:** DBT/Wellcome Trust India Alliance.  
**Investigators:** Dr Devaki Nambiar  
**Duration:** 2018–2022



Researcher collecting data on Universal Health Coverage indicators in Kerala



## Exploring the link between heat stress and kidney disease

Andhra Pradesh experiences repeated heat waves each year during summer and so evaluating the effect of heat stress on kidney function provides a unique opportunity to understand whether prolonged exposure to heat is responsible for the high burden of Chronic Kidney Disease in this region.

This study will assess kidney health risks due to environmental heat stress by evaluating its role in the development of acute kidney injury. The interventional component of the study will help identify public health strategies towards implementing preventive approaches to minimize the risk of recurrent acute kidney injury and its progression to Chronic Kidney Disease.

In the first phase, the study will recruit individuals representing occupations that involve prolonged heat exposure and physical exertion and compare them with age and gender matched controls without these exposures from the same geographic area. In the second (intervention) phase, the study will examine the effect of hydration, protective clothing and behaviour change interventions aimed at minimising heat exposure and its effects on kidney function on these individuals.

The results from this study would inform policy around occupational health of those exposed to extreme heat environments and develop preventive strategies that could translate into occupational guidelines and standard monitoring mechanisms, which will ultimately prevent kidney injury and disease.

**Funding Support:** Department of Health Research, Ministry of Health and Family Welfare, Government of India

**Investigators:** Dr Oommen John, Dr Balaji Gummididi, Prof Vivekanand Jha

**Duration:** 2020–2023



Patient receiving dialysis in a primary health centre in Andhra Pradesh

## Stopping Kidney Disease epidemic in rural communities

Chronic kidney disease (CKD) is an important contributor to the non-communicable disease burden. In recent years, there have been multiple reports of high prevalence of CKD of unknown origin (CKDu) among the rural communities of coastal Andhra Pradesh, most notably the Uddhanam region of Srikakulam district.

The STOP CKDu study is aimed at addressing all aspects of the problem – estimate the disease burden using rigorous scientific methodology and sociological tools, undertake an environment mapping and additional investigations as needed.

The study also aims to identify the causes, natural history and economic impact and develop evidence guided interventions for general improvement of health conditions of people in the region

Data collection involving 4200 households has been completed and a Kidney Research and Assistance Centre has been set up in the district town of Palasa offering free dialysis to patients with chronic kidney disease. Awareness programs have been held in the villages, and medical help and counselling are being provided through the state and district governments.

**Funding Support:** Government of Andhra Pradesh

**Investigators:** Dr Balaji Gummididi, Dr Oommen John, Prof Vivekanand Jha

**Duration:** 2017–2020



Doctor checking for leg fracture in a patient

### Fracture care in low- and middle-income countries

Trauma is a leading cause of death among the young adult population worldwide. Musculoskeletal injuries are a common manifestation of trauma, comprising over 60% of the injured people.

However, several clinical care aspects of fracture care including multi-disciplinary management and its impact on recovery outcomes (death, reoperation and infection) remain unknown in low- and middle-income countries. The International Orthopaedic Multicentre Study in Fracture Care (INORMUS), is an observational study aimed to fill this gap and improve clinical outcomes.

INORMUS study was undertaken across three continents in 18 low- and middle-income countries with more than 40 clinical sites and 40,000 patients. Data collection in India was completed in December 2019 and about 9400 patients were recruited across 13 hospitals. Data is being analysed to provide critical insights for improving fracture care pathways in India which is currently fragmented and often plagued by delays in care and treatment.

**Funding Support:** National Health and Medical Research Council, Australia

**Investigators:** Dr Jagnoor Jagnoor

**Duration:** 2015–2019

### Economic Burden of Tuberculosis in India

India accounts for about 24% of the global tuberculosis burden with 2.4 million cases notified in 2019. Free diagnosis and treatment to all registered tuberculosis patients is being provided by the Government through the National Tuberculosis Elimination Program.

However, high out-of-pocket expense is associated with free tuberculosis treatment in public sector Government hospitals and medical centres because of multiple visits and investigations before diagnosis, transport cost before and during treatment, expenses for medical follow-ups, drugs for managing side effects and nutritional support. Financial support of INR 500 is provided by the Government to all tuberculosis patients for six months as nutritional support, with plans to reimburse other expenses related to treatment.

Resources are also scarce and India's health budget is one of the most stretched in the world. Therefore, to ensure proper utilization of limited budget and to plan for any social protection measures for tuberculosis patients, it is essential to better understand the costs of tuberculosis patients, both in terms of the extent of these costs, and what determines them.

The objective of this research is to estimate the cost of treatment of drug-susceptible and drug-resistant tuberculosis from a patient perspective so that resource allocation can become more patient-friendly. More than 1500 drug-susceptible patients in addition to all multi-drug resistant tuberculosis patients will be interviewed thrice in the four states of Assam, Maharashtra, Tamil Nadu and West Bengal. The sample is a representative sample drawn from general population, slum dwellers, and tea garden workers/families to compare the treatment cost of tuberculosis in general population and high-risk groups.

**Funding Support:** DBT/Wellcome Trust India Alliance

**Investigators:** Dr Susmita Chatterjee

**Duration:** 2018–2023



Researcher collecting data on cost of treatment of drug-susceptible and drug-resistant TB



## The cost of providing tuberculosis services in India from a health systems' perspective

The economic analysis required to support increased investment in tuberculosis is in its infancy in India, whilst it has the highest tuberculosis burden in the world. In 2017, high-level political commitment to an ambitious goal of ending tuberculosis by 2025, led to higher funding allocations for tuberculosis at US\$525 million (almost double the budget of US\$280 million in 2016). However, as is the case in most low- and middle-income countries, India does not have comprehensive and current data on the costs to the health system of providing tuberculosis services.

Funders are increasingly demanding sound investment cases before they allocate resources to TB programs. There is therefore a need to do economic analysis to support increased investment in TB. The project aims to estimate the unit costs of a comprehensive set of tuberculosis services globally from a health providers' perspective and develop a sustainable cost data collection framework.

Data for the study in India was collected from a multi-stage stratified random sampling of 20 facilities delivering routine tuberculosis services in



Researcher questioning patient on facilities delivering routine TB services

two purposively selected states: Maharashtra and Tamil Nadu. Resource use was measured using top-down and bottom-up cost methodologies. Collection for top-down and bottom-up estimates included facility characteristics, tuberculosis service statistics, building space, equipment, staff time, drugs and supplies, training, transport and other recurrent costs.

The study is part of a multi-country study (Ethiopia, The Philippines, Kenya, Georgia and India). The project titled "Value-TB" is a 3-year project funded by the Bill & Melinda Gates Foundation. The collaborators are the London School of Hygiene & Tropical Medicine, World Health Organization and the Central Tuberculosis Division, Ministry of Health and Family Welfare, Government of India.

**Funding Support:** London School of Hygiene and Tropical Medicine

**Investigators:** Dr Susmita Chatterjee

**Duration:** 2018–2020

## Cost and efficiency of the Intensified Mission Indradhanush program

India's immunization program, launched in 1978, is one of the largest programs of its kind in the world catering to 26 million children annually. Despite being operational for over 40 years, only 62% children in India receive complete immunization during their first year of life. To achieve 90% immunisation coverage in the country by 2018, the Intensified Mission Indradhanush (IMI) program was launched in October 2017.

While a special drive like this requires additional resources, there is no information on the incremental cost of delivering IMI. This retrospective study is aimed to estimate actual additional government expenditure on IMI and the opportunity cost associated with the program.

The study was conducted in five states – Assam, Bihar, Maharashtra, Rajasthan and Uttar Pradesh – which had high concentration of IMI activity. The final sample for this study included 40 districts, 90 blocks and 289 sub-centres of 5 states. Cost data were retrospectively collected between July 2018

to January 2019 at district, block and sub-centre levels from administrative records, financial records, IMI reports and interviewing staff involved in IMI.

**Funding Support:** Harvard university

**Investigators:** Dr Susmita Chatterjee

**Duration:** 2018–2020



Child getting her routine immunization shot



Evaluating economic impact of women with breast, cervical and ovarian cancer

### Cost of cancer care and adverse health outcomes

Inadequate public spending on health is a major challenge facing cancer care efforts in India. Out-of-pocket payments, which account for more than three-quarters of cancer expenditures in India, push families into poverty, with potentially catastrophic financial impact, especially if the cancer patient is the breadwinner.

The ongoing pilot study examines the economic impact of breast, cervical and ovarian cancer on households and assesses the incidence of financial distress and economic hardship associated with the illness. In addition, the study examines the impact of cancer on quality of life of these women.

Women diagnosed with breast, cervical and ovarian cancer and undergoing treatment at a tertiary public sector hospital in North India have been recruited. A baseline interview was conducted at the start of treatment and a follow-up interview will be conducted at 6 months to gather information on healthcare expenditure, economic burden, and impact on quality of life.

The pilot study will yield initial estimates that will help plan for a larger study on cost of cancer encompassing both the health system's and patient's perspectives. This will lead to robust estimates of the economic cost of cancer treatment and help guide reimbursement decisions for cancer care packages covered under Government-funded insurance schemes.

**Funding Support:** Low- and Middle-Income Countries TGI Internal Seed Grant

**Investigators:** Dr Arpita Ghosh

**Duration:** 2019–2020

### Tackling child drowning in the Sundarbans

Drowning is emerging as an important global health issue. In 2018, the World Health Organization reported 320,000 drowning deaths globally with an estimated 90 % occurring in low- and middle-income countries. Almost one fifth of all the drowning related deaths are in India, with children aged 1 to 9 years at most risk of drowning.

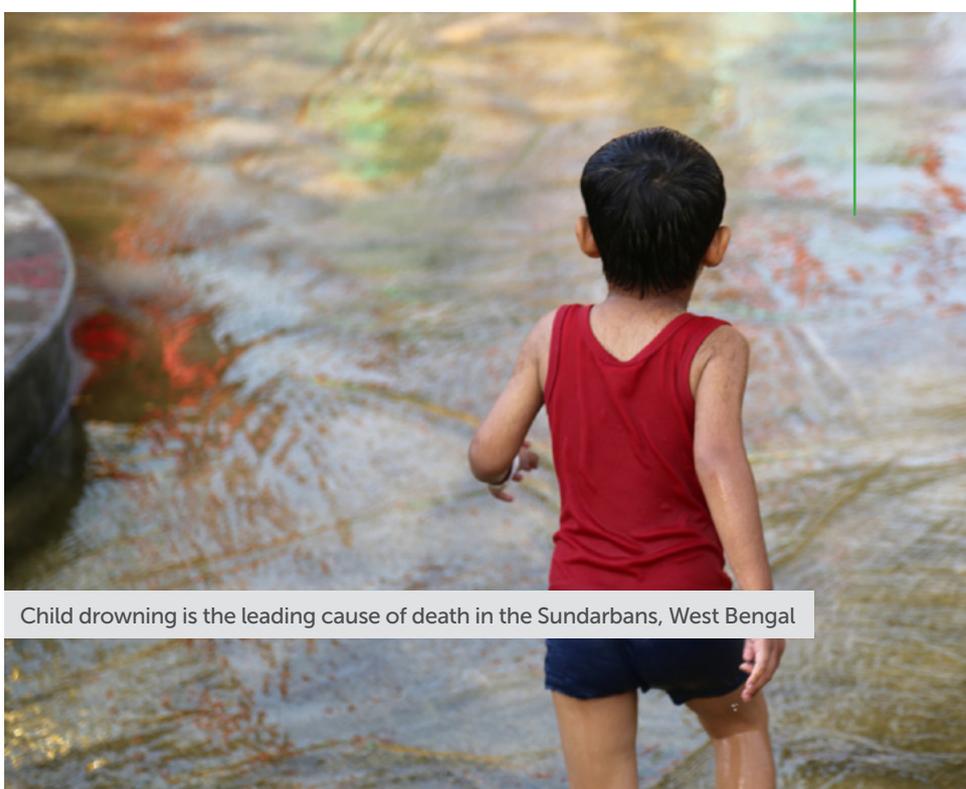
This pilot project aims to estimate the drowning rates of children in the Sundarbans regions of West Bengal and identify the common circumstances leading to these deaths. This will help in developing a drowning prevention program for children in the Sundarbans, which is a low-lying area and poses high drowning risk.

A policy analysis has identified existing government Programs that may be used to implement drowning interventions. Community-level and government-level stakeholders have also been engaged to identify feasible intervention options. The project has also come up with recommendations pertaining to the WHO interventions that can be implemented in the Sundarbans region to prevent drowning. Work with local governments and NGOs to implement these is underway.

**Funding Support:** Royal National Life Boat Institution

**Investigators:** Dr Jagnoor Jagnoor

**Duration:** 2019–2020



Child drowning is the leading cause of death in the Sundarbans, West Bengal



## Enhancing the role of community health workers in tribal areas

Community Health Workers have helped in improving maternal and child health outcomes as well as reducing toll of infectious diseases in many areas in the country. However, there is a need to enhance and improve their contribution to meet tribal health needs.

In this study, funded by the Indian Council of Medical Research, we work with the tribal minority population in the Nilgiris Biosphere Reserve region, in the southern Indian States of Karnataka and Kerala. Despite the existence of relatively strong health systems in both states, the tribal populations have limited access to programs and services.

The study will assess health service utilization facilitated by existing community health worker programs in the two areas and identify barriers and facilitators. It will propose recommendations to improve the design of community health worker programs in tribal settings, with a focus on the two states, but with lessons for wider contexts.

**Funding Support:** Indian Council Medical Research (ICMR)  
**Investigators:** Dr Devaki Nambiar  
**Duration:** 2018–2019

## Advancing Equity in Decision-making

The mission of this project is to carry out policy engagement in relation to ongoing research studies on tribal health and health equity. It aims to place equity prominently into the agenda of decision-makers in Kerala and Karnataka so that health for all can become a reality.

Currently, policies that are in place are not designed to be equitable and therefore, many people are left out of the ambit of universal health coverage. Policy engagement officers are being involved in the projects in both states to raise the profile and utility of equity-focused analyses in policymaking while gleaning lessons on how to engage with policy makers constructively.

Additionally, the project intends to increase the quantity, quality and relevance of interactions between researchers and policymakers at district and state levels by creating outputs that facilitate the use of evidence from research for decision-making and policy design.

**Funding Support:** Wellcome Trust, UK  
**Investigators:** Dr Devaki Nambiar  
**Duration:** 2020–2021



Community health worker recording screening for maternal and child health

## Assessing policy and systems response to the burden of snakebite in India

Snakebite is a neglected tropical disease leading to 125,000 deaths annually. In India, 46,000 people die from snakebites each year mostly from rural and tribal communities. Since many affected do not report to health facilities, the numbers may be higher. Moreover, the long-term health effects and the social and economic impact of snakebite has not been well studied.

This project will examine policies and systems responses to snakebite at the national level and in two states of West Bengal and Odisha. The findings will contribute to growing efforts in India and globally to address this critical, but largely neglected, public health challenge.

**Funding Support:** ICMR Regional Medical Research Centre, Bhubaneswar, India  
**Investigators:** Dr Soumyadeep Bhaumik  
**Duration:** 2018–2019

## Promoting Evidence-informed Interventions for Homeless (PEICHAN)

This research project seeks to convene a research and programming network focused on health service delivery for the urban poor, following from the work of the National Urban Health Mission Technical Resource Group in 2013–14.

The conceptual framework for this is drawn from the World Health Organisation's Commission on Social Determinants of Health Network on Priority Public Health Conditions.

The project started with rapid evidence syntheses to identify global evidence on effective interventions addressing the health of the homeless, with a focus on tuberculosis prevention and treatment as well as maternal and child health. In-depth interviews with the homeless people having tuberculosis as well as homeless women with maternal and child health problems/ concerns are also being conducted.

**Funding Support:** Low- and Middle-Income Countries TGI Internal Seed Grant  
**Investigators:** Dr Devaki Nambiar  
**Duration:** 2019–2020



A woman caught in flood waters at her house entrance

### Understanding resilience to disaster related displacement in Assam

Nearly 2 million people are displaced each year in India due to floods. Assessing community vulnerability to natural disasters can help understand the impact on communities to mitigate risks in the face of a disaster and build their survival capacity.

The Char community in Assam dwell in areas where floods are common. In 2017, the Institute undertook a qualitative study among the Char population and found a complex interplay of contextual factors plays a key role in the community's ability to respond and recover from natural disasters. Building on those findings, the present study is aimed at comprehensively investigating all dimensions of community vulnerability.

This year, the research team did a comprehensive policy review of disaster policies and used participatory approach to understand community vulnerability and resilience. It will also develop and prioritise interventions for disaster risk reduction for future testing and implementation.

**Funding Support:** Low- and Middle-Income Countries TGI Seed Grant

**Investigators:** Dr Jagnoor Jagnoor

**Duration:** 2019–2020

### Taking a life-course approach to women's health – SMART $health$ Pregnancy

Every year, millions of women die from heart disease, stroke and complications of diabetes. Pregnancy presents an opportunity to engage with women to check whether they have conditions such as diabetes and high blood pressure and put in place measures that can help prevent this.

The SMART $health$  Pregnancy program aims to improve the detection and management of high-risk pregnancy conditions in the community, with targeted post-pregnancy care to prevent longer-term complications. The intervention specifically targets hypertension, anaemia and gestational diabetes and addresses long-term risks of cardiovascular disease and type-2 diabetes.

These interventions intend to reduce the transmission of disease risk from one generation to the next; lead to earlier and improved uptake of preventive treatment; and promote life-long health in women.

A pilot study is currently being implemented in the states of Haryana and Andhra Pradesh where community health workers are trained to use a flagship SMART $health$  platform which involves a Clinical Decision Support System (CDSS) designed to identify and follow-up high-risk patients in the community, with electronic referral and advice from primary and secondary care physicians. The application contains clinical decision support algorithms, based on local clinical guidelines, ensuring that people receive evidence-based and quality care.

**Funding Support:** National Health and Medical Research Council, Australia

**Investigators:** Dr D Praveen

**Duration:** 2018–2020



Pregnant lady post-screening with ASHA worker



Burns survivor under critical care

### Improving recovery outcomes for burns survivors in India

It is estimated that 180,000 deaths every year are caused by burns globally. The burden of burns falls disproportionately on the poorest and over 95% of fire-related deaths occur in low- and middle- income countries (LMICs). India has one of the largest burdens of burns with an estimated 7 million burn injuries per year, a mortality rate of over 8.3 per 100,000 population, disfigurement and permanent disability in 250,000 people annually, and 5 million disability-adjusted life years. Burn deaths among women in India are reported to be higher than maternal deaths. The ratio of fire-related deaths of young (15–34 years) women to young men is 3:1.

Lack of effective coverage of available, accessible, acceptable and quality burns services, and the absence of coordinated efforts both within the health care system and with other sectors, contribute to high mortality and morbidity rates. A review of literature conducted by the team highlighted that rehabilitation guidelines or community-based rehabilitation programs for burns which can help manage the problem at village level in resource poor settings are non-existent. Three areas of rehabilitation – physical, psychological, social and community rehabilitation – were identified through the review.

The project aims to address barriers in delivering burns care by strengthening health systems through the National Program for Prevention and Management of Burn Injuries (NPPMBI) and improving burns recovery outcomes.

A mixed methods approach is being used for the research – while quantitative data will be collected using a burns registry tool, qualitative methods will be used for rapid health facility assessment. The research will also use a participatory approach for developing a community-based rehabilitation model for tertiary prevention, delivered through primary health care.

The findings from the study are expected to strengthen links between the community and the health system by improving access to preventative, curative and rehabilitation services for burn injuries, particularly among the most vulnerable groups.

**Funding Support:** Indian Council of Medical Research

**Investigators:** Dr Jagnoor Jagnoor, Dr Vikash R Keshri

**Duration:** 2020–2022

# BETTER TREATMENTS

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The better treatments program aims to find answers that remove uncertainties around the right course of action around treatment of important but often neglected topics in chronic diseases by undertaking high quality, large scale clinical trials. Our approach is to be innovative and inclusive so that the evidence generated improves prior practice and is broadly generalisable.

**Vivekanand Jha**  
Executive Director  
The George Institute, India





## Sepsis in India Prevalence Study

Sepsis, defined as the body's life-threatening response to infection, was recognised as a global health priority by the World Health Organisation in 2017. A recently published study by the Global Burden of Disease group reported 49 million sepsis cases and 11 million deaths in 2017.

In developing countries like India, the epidemiology of sepsis is poorly understood despite high mortality and morbidity rate. This problem is further compounded by a very high level of antimicrobial resistance, which is also a major health problem in India.

The project aims to estimate the prevalence of sepsis in Indian ICUs especially describing sepsis patient's clinical characteristics, antimicrobial use, treatments received, and 30-day outcomes. It will also undertake a gender specific analysis to determine if prevalence, characteristics and outcomes differ in male and female patients with sepsis.

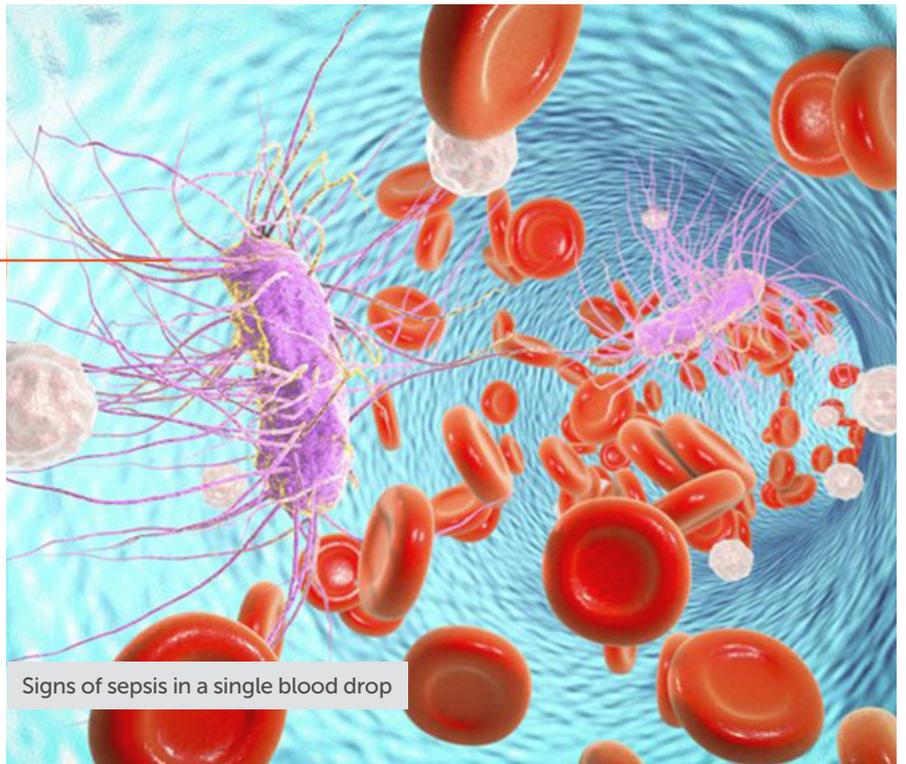
A prospective, one day, observational, multicentre, nation-wide point-prevalence study was carried out in 35 sites across the country and data from almost 700 patients was collected.

This study will provide up-to-date knowledge of the epidemiology and outcomes of sepsis, inform policy makers and provide a platform for developing strategies for the prevention and management of sepsis, antibiotic usage and antimicrobial resistance in India.

**Funding Support:** Low- and Middle-Income Countries TGI Seed Grant

**Investigators:** Prof Vivekanand Jha, Dr Ashwani Kumar

**Duration:** 2018–2021



## Examining quality of life in patients with kidney disease in India

Chronic kidney disease (CKD) has become a growing public health problem worldwide with a serious socio-economic impact. Recent advances suggest the possibility of using biologically relevant biomarkers to develop prediction algorithms for outcomes in patients with CKD.

The Indian Chronic Kidney Disease study has established a large cohort of Indian patients with moderate kidney failure recruited at 11 centres nationwide.

Preliminary data analysis has shown that even early stages of chronic kidney disease can negatively impact individuals' quality of life reversing the common perception that patients are generally well until they require dialysis or a kidney transplant. Lower quality of life scores were associated with lower income, poor education, and female gender.

**Funding Support:** Department of Biotechnology, Government of India

**Investigators:** Prof Vivekanand Jha

**Duration:** 2017–2022



Triple pill is an inexpensive low-dose, 3-in-1 combination BP lowering drug therapy

### Innovative triple pill significantly lowers blood pressure

This project tested a new way of treating early-stage hypertension by giving patients an innovative triple pill involving three drugs, each at half dose. Traditionally patients begin treatment with one drug at a low dose, which is increased over time or additional drugs added to try to reach target blood pressure. This increases the risk of complications and non-adherence.

The Triple Pill, consisted of the blood pressure medications telmisartan (20 mg), amlodipine (2.5 mg), and chlorthalidone (12.5 mg). The trial enrolled 700 patients, who were randomly assigned to receive either the combination pill or usual care – their doctor’s choice of blood pressure-lowering medication.

The end-of-study findings showed that 70% patients reached blood pressure targets with the Triple Pill, compared to just over half receiving the usual care.

The Institute is now looking at strategies to maximise uptake of the study results. This includes examining the acceptability of the Triple Pill approach to patients and their doctors, as well as cost-effectiveness which will be important for governments and other payers to consider.

**Funding Support:** Global Alliance for Chronic Disease (GACD), National Health and Medical Research Council, (NHMRC) Australia

**Investigators:** Dr Mohammad Abdul Salam

**Duration:** 2017–2020

### Patient-centred care for people undergoing peritoneal dialysis

Monitoring the quality of dialysis and generating real time data that can be reviewed by physicians is now possible, through an integrated, patient-centred, affordable and sustainable app. The application, based on patients’ needs uses innovative technologies and methodologies for service design. The prototype is now being tested for its functional elements and user-friendliness leading to home-based monitoring of clinical outcomes and improving quality of dialysis.

Data is being collected on physiological measures through sensors in order to be able to compare and ascertain which methods are most acceptable to patients and providers. Designed in the form of an observational cohort study, the IT supported system is also being validated for its efficacy relating to education and monitoring of patients undergoing peritoneal dialysis in their homes.

**Funding Support:** Baxter Foundation

**Investigators:** Prof Vivekanand Jha, Dr Oommen John

**Duration:** 2017–2022



Patient receiving peritoneal dialysis treatment at home



Stroke with heart disease, is now the most common cause of death

### Improving Stroke care in India

Stroke is a worldwide health problem and, with heart disease, is now the most common cause of death globally, with India having the third-highest number of people dying from stroke. People in India also tend to have strokes younger than people in wealthier countries like the UK – in their 50s rather than in their 70s.

Our collaborators in the study are University of Central Lancashire, All India Institute of Medical Sciences, (AIIMS), New Delhi, Sree Chitra Tirunal Institute of Medical Sciences and Christian Medical College, Ludhiana. Together we are conducting this project to improve nursing care for stroke in India.

Three care bundles are currently being tested – Assessment and management of swallowing problems; monitoring and management of neurological and physiological signs and symptoms; and education and training of relatives in supporting acute stroke care.

The study is expected to improve acute stroke care by nurses, doctors and carers across the country.

**Funding Support:** National Institute for Health Research

**Investigators:** Dr Pallab Maulik

**Duration:** 2017–2021

# HEALTHIER SOCIETIES

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In the ‘healthier societies’ program, we seek to build a research and implementation agenda centred in understanding the context and drivers of healthier societies through collaborative and ethical research practices.

Mobilizing collective knowledge, nurturing inclusive pathways of action, and supporting people-centred solutions that strengthen health equity, human rights, and gender equality through these inter-linked communities of practice are at the core of this program.

**Surekha Garimella**  
Senior Research Fellow  
The George Institute, India





## Upholding the rights of waste picking communities and sanitation workers in India

One in three city-dwellers live in informal settlements in low-and-middle-income countries, with inadequate access to essential services and limited opportunities to shape their lives. This leads to a wide range of physical and mental health risks for them impacting their overall well-being.

Accountability for Informal Urban Equity Hub (ARISE), a consortium of interconnected and interdisciplinary research hubs across Africa, South Asia and the UK, aims to address the challenges of ill-health, inequity, and insecurity in informal urban settlements. It also aims to support marginalised people to claim their health rights and build government accountability and capacity through evidence-based research and policy change at all levels.

The ARISE team comprises a diverse set of research organizations across Bangladesh, India, Kenya, Sierra Leone, and an international federation of slum dweller organizations. The ARISE Hub has also been working on developing conceptual papers around key themes of accountability, power, health and wellbeing, urban spaces and informality.

In India, the ARISE Hub is working closely with waste picking communities and sanitation workers with the help of its grassroots partners Hasiru Dala in Bengaluru (Karnataka), Safai Mazdoor Union in Shimla (Himachal Pradesh) and Dalit Bahujan Resource Centre in Guntur and Vijayawada (Andhra Pradesh).

During the year, the team conducted initial scoping exercises and identified key stakeholders. It also undertook a series of in-depth observations, interviews, and meetings to gain an understanding of the perspectives, use of state and private systems, and the lived realities of the communities.

The team members also shadowed waste-pickers, in order to get a more immersive understanding of their lives and the challenges and inequities that they face.

The team facilitated a pilot training on Participatory Action Research (PAR) for Dalit Bahujan Research Centre's staff members in Guntur.

**Funding Support:** United Kingdom Research and Innovation Great Challenges Research Fund (UKRI GCRF)

**Investigators:** Dr Surekha Garimella

**Duration:** 2019–2024



Waste-picker in informal setting in India



Addressing stigma associated with mental health is must

### Understanding and reducing stigma against mental health

There is an urgent need to reduce stigma against people with mental illness and positively modify attitudinal barriers within the primary health care settings, among community members, health workers, and among mental health professionals themselves.

Earlier research in high-income countries has shown that stigma can be reduced, and help-seeking increased by implementing suitable strategies.

The International Study of Discrimination and Stigma Outcomes (INDIGO) is a partnership program with seven other collaborating sites in five different countries (China, Ethiopia, India, Nepal, and Tunisia). In India it is being conducted in Delhi NCR. It aims to establish a strong research collaboration to develop stigma reduction interventions and to carry out activities to strengthen the scientific understanding of how stigma operates in the community.

The study will be conducted at urban primary health care centres and district hospital in Faridabad district. It will involve community members, policy makers and civil society members apart from the primary health workers and mental health professionals. Intervention for primary care settings, for mental health specialists and for the community will be developed and culturally adapted and tested through pilot projects. Formative research to develop new tools and adapt existing tools to local context is currently underway.

The project is being done in collaboration with the King's College London.

**Funding Support:** UK Medical Research Council (MRC)

**Investigators:** Dr Pallab K Maulik

**Duration:** 2019–2023

### Evidence maps for identifying research gaps: Leptospirosis in India

Leptospirosis is a major zoonotic disease occurring in subtropical and tropical countries. The disease peaks seasonally, often in outbreaks – with potential for epidemics. In the recent past, there has been a surge in incidence and outbreaks of leptospirosis with cases reported from several states in India.

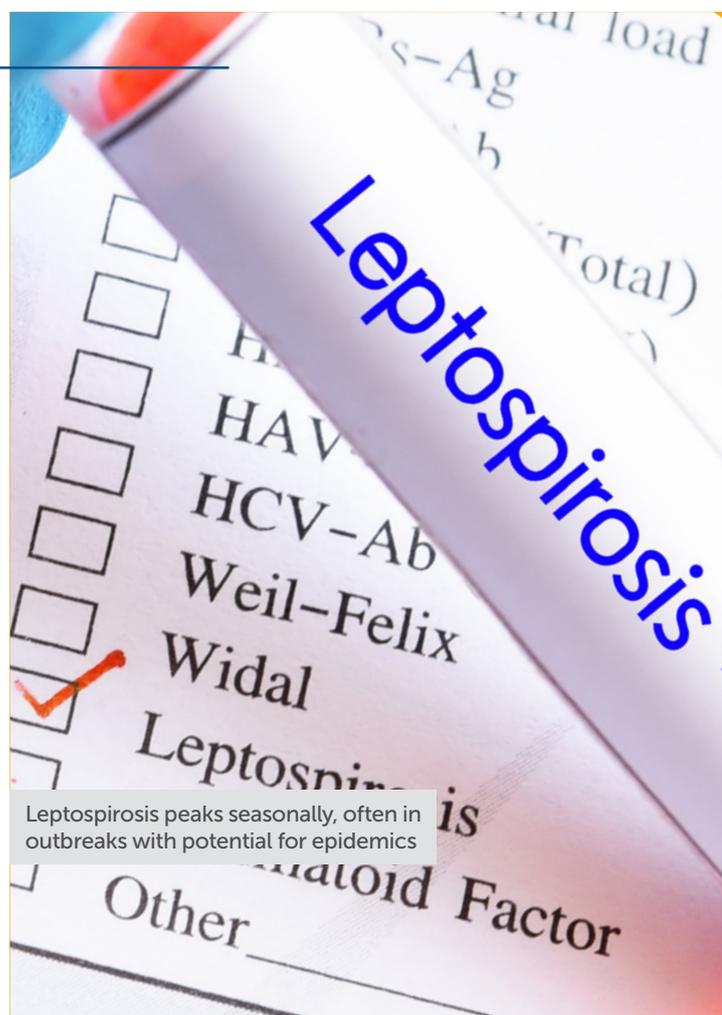
The project funded by the Indian Council for Medical Research focussed on developing an evidence gap map (EGM) of available research on Leptospirosis in India to identify gaps in knowledge and inform deliberations on future research needs in India

Evidence from laboratory studies, systematic reviews, observational studies and intervention studies were included and the key outputs were presented in formats facilitating stakeholder visualisation and usage for decision-making. This is the first such EGM on Leptospirosis in India. The Institute is working on methodological work on developing EGMs that can inform deliberations on national research priorities for disease conditions.

**Funding Support:** Indian Council of Medical Research

**Investigators:** Dr Soumyadeep Bhaumik

**Duration:** 2019–2020



Leptospirosis peaks seasonally, often in outbreaks with potential for epidemics



## Improving health service uptake in urban slums of Vijayawada

Health of vulnerable populations living in urban areas, especially slums, has largely been neglected thus far in the country. People living on the streets and slum dwellers are at high risk of contracting infectious diseases and increasingly prone to non-communicable diseases owing to changing lifestyles.

The city of Vijayawada is a case in point. It has 111 slums with 26% of the total population residing in slums, on streets and in other underprivileged settlements in the city. Around 20 slums in Vijayawada are situated on river bends and canals, making these areas very hazardous in terms of sanitation, accessibility to potable water and general living conditions.

We have initiated research to understand the health challenges being faced by the community and develop mechanisms and health system improvements to address them in 10 slums of Vijayawada. This, in turn, would help increase the outreach of the local health service providers by influencing the health-seeking behaviour of people.

The ongoing project endeavours to understand the needs of the community, patterns of disease and health service uptake in the community and uses a community engagement approach to gain insights into gaps in the healthcare delivery system.

Community engagement activities including comics workshops have been conducted with participants from the selected slums. This has helped bring to life, stories and experiences from the community in a new and innovative way. Health camps have also been conducted in each slum regularly as part of the outreach activities. General health check-up and consultations with specialists were made available for all age groups.

**Funding Support:** HCL Foundation

**Investigators:** Dr D Praveen

**Duration:** 2020–2021



People living in urban slums of Vijayawada

## Rapid reviews to strengthen capacity, policy and decision making in public health systems

Access to timely and contextualised evidence on critical public health concerns enables rapid policy response by decision makers in resource-constrained settings of low- and middle-income countries (LMICs). In India, evidence-informed decision making is crucial to better deliver on goals of the National Health Mission and the ambitious Ayushman Bharat program.

Embedding Rapid Reviews in Health Systems Decision Making (ERA) in India is a collaborative project of The George Institute for Global Health India (TGI) and the National Health Systems Resource Centre (NHSRC).

Since its inception, the ERA platform at TGI has produced 11 rapid review products in the form of rapid policy briefs, inventories and rapid evidence synthesis to support evidence needs of several government decision making agencies.

The products have catered to decision making needs around the role of healthcare workers in service delivery, interventions to address the burden of health conditions such as chronic obstructive pulmonary disease and asthma, as well as postpartum training for lay workers, among other issues.

**Funding Support:** World Health Organisation's Alliance for Health Policy and Systems Research

**Investigators:** Dr Devaki Nambiar,  
Dr Soumyadeep Bhaumik

**Duration:** 2019–2021



Reduction in salt intake will control hypertension and reduce cardiovascular disease

### Reducing salt consumption through behaviour change

Excess sodium intake is strongly associated with high blood pressure which is a leading risk factor for cardiovascular disease (CVD) in India. Reducing salt intake has been identified as one of the most cost-effective measures countries can take to improve the health of their population.

Recent research in India reported that average population salt intake was 11g/day which is double the WHO-recommended maximum consumption level of 5g/day.

The objective of this 18-month project is to develop a community based behavioural change intervention focused on salt reduction delivered at the household level by frontline health workers, and test the feasibility, effectiveness, acceptability and potential for scale up.

The study uses a pre-post intervention design and included a formative phase that identified the sources of salt in the diet, predictors of salt and health-related behaviours and developed behaviour change strategies. In addition, design sprint activity was conducted as part of the formative phase that identified the specific messages and developed prototypes of key salt reduction messages for intervention and tested them in the population.

The findings of this research will provide evidence to inform policy makers and government about cost-effective, scalable community-based intervention to reduce salt intake and control hypertension and reduce cardiovascular disease.

**Funding Support:** Vital Strategies

**Investigators:** Dr D Praveen

**Duration:** 2019–2021

### Exploring Environmental Support for Walking in India

Sedentary lifestyles are becoming increasingly prevalent in India, particularly in urban areas. This is a prominent risk factor for non-communicable diseases, which have seen exponential growth in the country over the past decades.

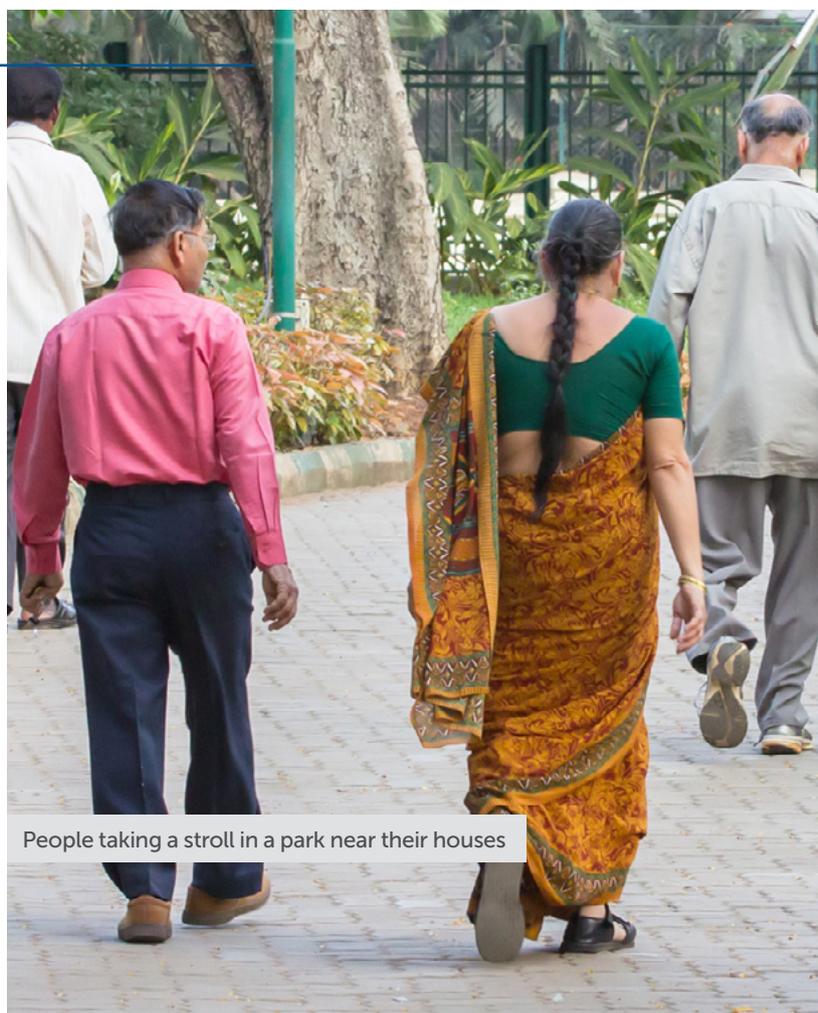
This study, underway in Hyderabad and Vijayawada, aims to understand perceptions of environmental (built and social) support for walking in India. The study methods include surveys of perceived support for walking, and self-reported physical activity; case studies to delve into the experiences and expectations of a few residents; and matching GIS data to survey data. Survey data collection is complete and under analysis.

This study could pave the way to better understanding of how the modified environment plays a crucial and critical role in reversing sedentary lifestyles, particularly for disadvantaged populations in the country.

**Funding Support:** Low- and Middle-Income Countries TGI Seed Grant

**Investigators:** Dr Josyula K. Lakshmi

**Duration:** 2019–2020



People taking a stroll in a park near their houses



## Perspectives on menstrual hygiene management & environmental footprints of its practices

Menstrual hygiene management is an under-researched area in India. Practices of treatment and disposal of sanitation pads pose ever-growing challenges to environmental sustainability and the personal health, well-being, and functioning of girls and women.

This project aims to understand community perspectives, preferences and behavioural control related to treatment and disposal of menstrual absorbents, and the associations that women and girls make between menstrual hygiene practices and personal and environmental health. It also endeavours to estimate the environmental footprints of the menstrual hygiene management practices.

The project used a qualitative approach to map prevalent menstrual hygiene practices and estimate their environmental footprints. Key informant interviews, in-depth interviews and focus group discussions were carried out and photographs relevant to participants'



Menstrual Hygiene Management and its practices are a must for every women and especially adolescent girls

menstrual hygiene management were collected. Environmental scientists are estimating the carbon dioxide equivalents and water consumed in the procurement of raw material, manufacture, use, and disposal of menstrual waste.

Besides contributing to the knowledge of perspectives and real-world practices, environmental support available, and unmet needs in a range of residential settings in urban, rural and tribal areas in the vicinity of Hyderabad, the study will also highlight the lacunae to be addressed, and potential strategies to be employed in promoting the health and well-being of girls and women, in an environment-sensitive, sustainable manner.

**Funding Support:** The George Institute Global Women's Health Program Research Grant 2018

**Investigators:** Dr Josyula K Lakshmi

**Duration:** 2018–2020

## Targeting adolescents in schools for salt reduction in household diet

This is a cluster randomised trial which aims to evaluate whether providing information on the harmful effects of salt and the available healthy choices to school children (10–14 years) and their parents will lead to changes in the knowledge and practices related to salt consumption among adolescents and through them in their family diets.

The study, being conducted in partnership with Post-Graduate Institute of Medical Education and Research had three phases: baseline assessment for 12-weeks, intervention phase for six months followed by end line assessment. All participants in the intervention group received intensive low-salt diet education as part of the school-based nutrition education program.

Mean daily salt consumption of participants were assessed using 24-hour urine and spot urine samples. The outcome will assess mean difference in the estimated daily salt intake and change in knowledge and behaviours related to salt consumption between the intervention and control groups.

**Funding Support:** TGI Australia

**Investigators:** Thout Sudhir Raj

**Duration:** 2018–2020



Educating school children on harmful effects of salt intake



Reducing the risk of CVD's by testing salt substitutes while cooking in Indian households

### Salt Substitute in India Study (SSiS) – A randomised controlled trial

A large proportion of dietary sodium in India comes from discretionary salt added to food cooked at home, but salt substitutes have not been tested in India. The primary aim of the trial is to evaluate the effect of reduced sodium, added potassium salt substitute to lower systolic blood pressure among individuals with hypertension in a rural Indian population. SSiS is a randomised, double-blind, controlled trial with 3-month follow-up, conducted among adults with self-reported hypertension living in rural villages of Telangana state in south India.

The first phase of the study will include background research on common sources of salt, combining desk review with in-home observation, focus group discussions, and community mapping activities. At the outset, there will be pre-intervention activities and a baseline survey on sociopsychological determinants of behaviour; spot urine and 24-hour urinary sodium excretion; and 24-hour dietary recall surveys. This will be followed by an intervention and follow-up phase.

The findings from this study will inform policy makers to implement a cost-effective, scalable community-based intervention to reduce salt intake.

**Funding Support:** Vital Strategies  
**Investigators:** Thout Sudhir Raj, Dr D Praveen  
**Duration:** 2019–2021

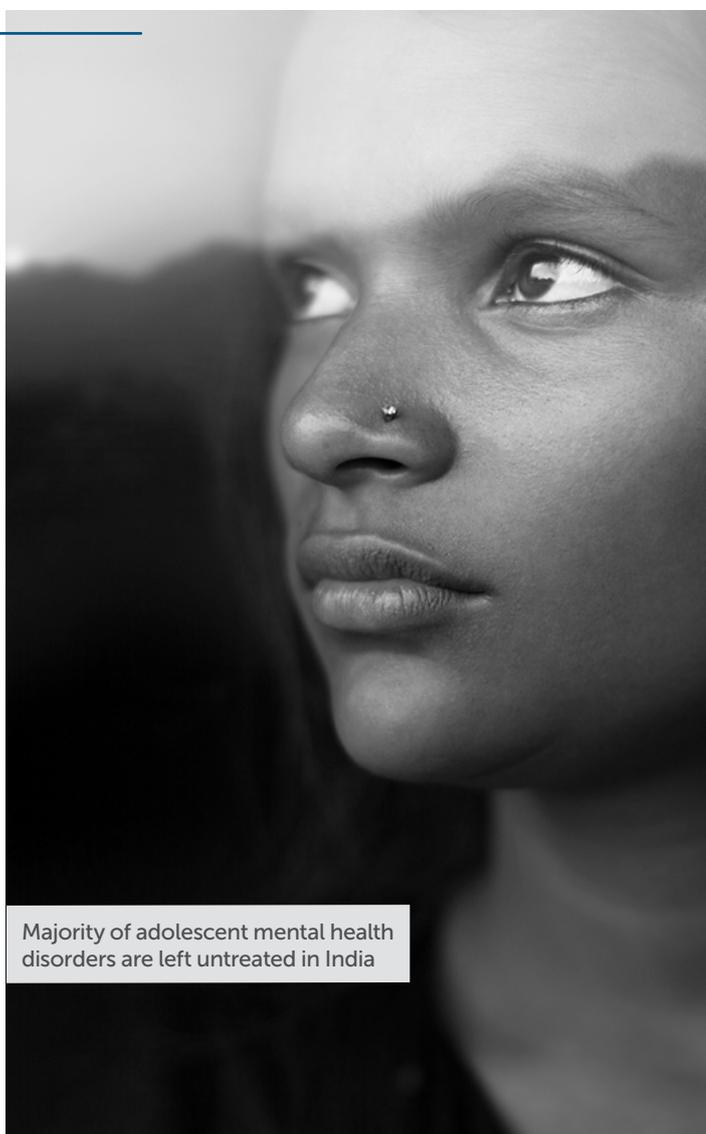
### Improving resilience among adolescents

Poor living conditions in slums may predispose adolescents to both poor mental and physical health. According to World Health Organisation, around 20% of adolescents suffer from a disabling mental illness. Majority of adolescent mental disorders worldwide are left untreated. There is limited research on the inter-relationship of risk as well as resilience factors, especially among adolescents living in urban slums, and its overall influence on their mental health.

MentAI Health Risk Factors among Older Adolescents living in Urban Slums: An Intervention to Improve Resilience (ANUMATI) project aims to explore risk and resilience factors for common mental disorders among older adolescents (15–19 years) living in urban slums. The project will also develop and pilot a community intervention module using a cross-sectional mixed methods design to be conducted in two urban slums of Faridabad and Hyderabad with a population of about 10,000 each.

The project will result in the development of a community-based intervention module in improving and enhancing resilience of adolescents living in urban slums. Learnings from the project will be shared with respective state governments to strengthen counselling centres under the Rashtriya Kishore Swasthya Karyakram (RKSK).

**Funding Support:** Indian Council of Medical Research, New Delhi, India  
**Investigators:** Dr Mercian Daniel  
**Duration:** 2019–2022



Majority of adolescent mental health disorders are left untreated in India



Community health worker educating people on handwashing techniques amid COVID-19

### Lending a helping hand to fight COVID-19

The George Institute, India has responded to the COVID-19 situation in India by undertaking a program of research that can inform the ongoing public health activities around awareness, prevention and cure. Many of our researchers contributed to the national COVID-19 response by creating awareness among communities, especially on hand-washing and safe distancing and by undertaking relevant research and policy engagement.

Our researchers are working with the Central and State Governments and aiding and advising in mounting a comprehensive and a whole of society and whole of community approach to the pandemic. This has included providing advice on a more comprehensive approach to quarantining and sharing evidence on the vulnerability of patients with chronic diseases to COVID-19, for example kidney patients and those on dialysis.

We generated new evidence through rapid evidence synthesis on the role of frontline health workers and how they can be protected with adequate personal protective equipment and training and provided technical advice to the Government to mount a COVID-19 innovation challenge. We also undertook another evidence synthesis on role of telemedicine for frontline healthcare workers and made policy recommendations.

Our researchers are part of the rapid response team of the Srikakulam district of Andhra Pradesh. Our team, which is working with rag pickers, across four project sites in the country, came up with an appeal to support waste-pickers and fight COVID-19. We also organised a fundraising drive through partners to support waste-pickers.

The Institute was involved in drafting haemodialysis guidelines for safe dialysis during and after pandemic through the kidney action network. An expert group of nephrologists from around the world including China wrote a paper The Novel Coronavirus and Kidneys calling upon all family members living with dialysis patients to follow the precautions and regulations given to patients to prevent person-to-person and within family transmission of COVID-19.

The mental health team at the Institute also came up with resources in English, Hindi and Telegu to provide tips on well-being during the COVID-19 crisis. This was shared with the Governments of Telangana and Haryana.



# EVENTS & POLICY ENGAGEMENT

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Enhanced public and policy level engagement with various stakeholders especially during COVID-19 was the highlight of our work this year. We hosted various events and webinars that contributed to ongoing national debates on healthcare for all.

**Kannan Krishnaswamy**  
Communications Manager  
The George Institute, India

## Health10x India Innovation Week August 2019

This was a week-long clinical immersion and market exposure program for health start-ups working to address the rising burden of non-communicable diseases in underserved markets, particularly in the low- and middle-income countries (LMIC), as part of a 10-week intensive mentorship program offered to Australian health start-ups that were selected as part of the UNSW Founders Health10x program. It provided an opportunity for them to validate their innovation for the Indian Market. The visit comprised exposure to the Indian regulatory pathways, as well as go to market and scale up strategies and interaction with health care providers in India.

The Indian and Australian start-ups were provided an opportunity to pitch their innovation at the Health 10x India Pitch Night. The prize winner was invited to participate at the Health 10x Demo night at UNSW Founders in Sydney later in the year.



## Health Systems Global (HSG) Asia Workshop

**October 2019**

Health Systems Global, The George Institute for Global Health, Community of Practitioners on Accountability and Social Action in Health (COPASAH), Emmanuel Hospital Association and the Campbell South Asia got together to organise the HSG Asia workshop in October 2019. The workshop strengthened the field of health systems research and practice among early career, emerging researchers.

It aimed to foster regional networking around health systems research, practice and policy and to enable skill-building among emerging researchers, with a focus on the current call for abstracts for Health Systems Research symposium planned to be held in Dubai in November 2020.



Dr Devaki Nambiar sharing her thoughts on Health Systems Strengthening

## Mental Health Policy Symposium

**November 2019**

A Mental Health policy symposium was conducted to explore how the ongoing SMART Mental Health Program can contribute to the District Mental Health Program and strengthen mental health care delivery model in the state of Andhra Pradesh and Haryana.

The policy symposium delved into how the results could inform some of the targets as outlined in the National Mental Health Program and WHO's Mental Health Action Plan.



Sudha Kallakuri, Research Fellow talking about the SMART Mental Health Programme during the Mental Health Policy Symposium



Participants from the Workshop on Cutting Edge Research on Health Inequities

### Workshop on Cutting Edge Research on Health Inequities: Concepts & Methods

**November 2019**

Azim Premji University, The George Institute for Global Health and Health Equity Network India organised the fifth workshop on 'Cutting Edge Research on Health Inequities: Concepts & Methods' in November 2019 in Bengaluru, Karnataka. The workshop aimed to build the capacity of researchers and activists to have clarity on concepts related to equity and inequities in health and develop an understanding on how to approach health research with an equity lens.

### National Consultation on Strategy for Health Data Science

**November 2019**

A three-day national consultation was conducted to draft a blueprint for developing expertise in health data science based on an in-depth understanding of available data in India and the relevant public health questions.

The consultation hosted a diverse group of stakeholders – researchers from various scientific backgrounds, academicians, Government officials, and industry experts, to weigh in on the opportunities and challenges presented in this era of big health data and make recommendations.



Dr Shirshendu Mukherjee of BIRAC sharing the creation of Grand Challenges Data competition to build capacities in data research



## Evidence2Policy (E2P) Lecture

December 2019

The second lecture in The George Institute's Annual evidence2policy lecture series was delivered by Dr Rajani Ved, Director, National Health Systems Resource Centre.

Dr Ved focussed on health reforms in India through the Ayushman Bharat program and reflected on "Evidence to Policy: Lessons learnt from India's National Health Mission".

Prof. Randeep Guleria, Director of the All India Institute of Medical Sciences (AIIMS) was the Chief Guest and the Australian High Commissioner to India, Harinder Kaur Sidhu, was the Guest of Honor.

Dr Ved's lecture was followed by a panel discussion on "Changing Paradigm of Health Care in India". The expert panel included; Prof. Gita Sen, Dr Shankar Prinja; Dr Abraham Joseph; Dr Shirshendu Mukherjee and Dr Rama Baru.



Professor Vivekanand Jha presenting a citation to Dr Rajani Ved

## Launch of Diabetes and Infection Network

February 2020

The George Institute in collaboration with Oxford University launched a diabetes and infection network to explore how real-world data sets can be used to evaluate the relationship between diabetes and infection in low- and middle-income countries.

The first meeting of this newly created network was held at Delhi where researchers, clinicians, data scientists, health economists and ethicists from across the globe especially those working together on the intersection between diabetes and infection discussed the importance to bridge the gap between infection and diabetes and how collection and analysis of real world data can enable knowledge sharing and pooling of resources to fight the diabetes-infection nexus.



Experts discussing intersection of diabetes and infection and enabling data knowledge sharing



# OUR GOVERNANCE

## Our Directors

### **Professor Vivekanand Jha**

Executive Director, The George Institute for Global Health, India  
 Chair of Global Kidney Health, Faculty of Medicine,  
 Imperial College London  
 President, International Society of Nephrology, 2019–2021.

Professor Jha currently serves as the President of the International Society of Nephrology from 2019 to 2021 and is a member of its executive committee. He serves on the international advisory boards of several organisations, including membership of the WHO Expert Advisory Panel on Human Cell, Tissue and Organ Transplantation.



### **Professor Anushka Patel**

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

Professor Patel is a Professor of Medicine at UNSW, Sydney and a cardiologist at Royal Prince Alfred Hospital in Sydney, Australia. 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 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).



“ Our Research Advisory Committee (RAC) meets once a year and provides us guidance on our research both in terms of the work already accomplished and the broad directions which we are taking for the future.

**Amit Khanna**  
 Director, Finance & Operations  
 The George Institute, India

**Associate Professor Pallab K. Maulik**

Deputy Director and Director of Research,  
The George Institute for Global Health India  
Associate Professor, Faculty of Medicine,  
UNSW Sydney



Dr. Pallab K. Maulik is the Head of Research since 2010. Supported by the DBT-Wellcome Trust India Alliance Intermediate Career Fellowship in 2014, he has built a mental health research portfolio addressing questions around social determinants of mental health services, international mental health, and intellectual disability. He contributes to National Task Force on Integrating Mental Health in Primary Care and the Lancet Commission on Stigma and Discrimination.

**Amit Khanna**

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

Prior to joining our team, Amit 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 is a Chartered Accountant and holds a degree in Commerce from Delhi University.

**The George Institute Research Advisory Committee**

(as of March 31, 2020)

**Professor S V Madhu**

Department of Medicine, Division of Endocrinology & Metabolism, University College of Medical Sciences & Guru Teg Bahadur Hospital, New Delhi

**Professor Usha Raman**

Professor & Head, Department of Communication, University of Hyderabad

**Dr Mohan Manohar Rajapurkar**

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

**Professor Pratap Sharan**

Professor, Department of Psychiatry, All India Institute of Medical Sciences, New Delhi

**Dr Jitendar Sharma**

Director & CEO, Andhra Pradesh Medtech Zone Ltd., Visakhapatnam

**Mr H S D Srinivas**

Head-Health, Tata Trusts, Mumbai

**Dr Shirshendu Mukherjee**

Mission Director, BIRAC

**Dr DK Shukla**

Director, National Institute of Medical Statistics, ICMR, New Delhi



The George Institute, India team



## OUR KEY PARTNERS



This year, we entered into a partnership with the Manipal Academy of Higher Education (MAHE) and launched a first-of-its-kind Leadership in Health Program. Some of our researchers have been appointed as conjoint faculty at the Prasanna School of Public Health.

**Alpna Saha**  
Head of Fundraising  
The George Institute, India

### **Manipal Academy of Higher Education (MAHE)**

This year, The George Institute signed an MoU with the Manipal Academy of Higher Education (MAHE) to undertake joint research and training to prepare future public health leaders of tomorrow. Many of our researchers now hold conjoint faculty positions at MAHE. A one-year online leadership in public health course has also been launched as part of the joint initiatives.



**MANIPAL**  
ACADEMY of HIGHER EDUCATION  
(Deemed to be University under Section 3 of the UGC Act, 1956)

### **Our Key Collaborators**

- 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, Bhubaneswar
- 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
- Apollo Group of Hospitals
- Care Group of Hospitals
- Fortis Group of Hospitals



### Other partners include

- National Institute of Cancer Prevention and Research, New Delhi
- National Health Systems Resource Centre of the Government of India
- Duke University (through Duke Global Health Institute)
- Health and Family Welfare Department, Government of Andhra Pradesh
- Christian Medical College, Vellore
- Department of Biotechnology
- National Health and Medical Research Council Australia (NHMRC)
- DBT/Wellcome Trust India Alliance
- Baxter Foundation
- HCL Foundation
- Bill and Melinda Gates Foundation
- Pfizer Foundation
- London School of Health and Tropical Medicine

- Harvard University
- Benevity Causes
- UK Online Giving Foundation

### Key International collaborators

- Imperial College, London
- King's College, London
- London School of Health and Tropical Medicine
- Monash University
- University of Oxford
- World Health Organization
- Harvard University
- University of New South Wales, Sydney
- National University of Singapore
- University of Central Lancashire

### Our global affiliations



### In collaboration with



# OUR IMPACT

## Professional training



740

Community health workers upskilled

694

Health professionals capacities' built

## Academic publications



+350

Publications, with

40

in high impact journals

## Social innovations



- Improving the management of chronic diseases through guideline based care at primary health center.
- Training health staff to manage women with gestational diabetes through lifestyle modification.
- Reducing stigma and increasing access to mental health services in communities.

## Policy Achievements



- Mapping of the chronic kidney disease of unexplained aetiology in coastal districts of Andhra Pradesh



- Creating a research agenda around neglected tropical diseases like snakebites

- Improving the quality of dialysis in Andhra Pradesh



- Provided expert guidance to WHO's digital health guidelines



- Guided the design of Kerala's primary health centre monitoring framework



- Set up distinctive biobank linked disease registry

- Facilitated inclusion of combination pills in WHO essential medicines list



We at the George Institute India aim to generate high quality evidence to ensure delivery of better care and better treatment that can lead to healthier societies. Through our research, we are driving impact on quality of life and health outcomes.

**Pallab Maulik**

Deputy Director and Director of Research  
The George Institute, India



# OUR FINANCES

## Balance Sheet, as at 31st March 2020 (All amounts in INR)

	2020	2019
<b>Equity and Liabilities</b>		
1. Shareholders' Funds	-	-
I. Share capital	25,624,920	25,624,920
II. Reserves & surplus	46,139,892	37,424,224
<b>Total equity</b>	<b>71,764,812</b>	<b>63,049,144</b>
2. Non-current liabilities		
I. Other long-term liabilities	965,002	
II. Long-term provisions	11,367,180	10,897,419
Total non-current liabilities	12,332,182	10,897,419
3. Current liabilities		
I. Trade payables	7,947,382	3,587,884
II. Other current liabilities	107,282,478	57,127,454
III. Short-term provisions	5,131,348	3,292,991
Total current liabilities	120,361,208	64,278,329
<b>Total liabilities</b>	<b>132,693,390</b>	<b>75,175,748</b>
<b>Total equity and liabilities</b>	<b>204,458,202</b>	<b>138,224,892</b>
<b>Assets</b>		
1. Non-current assets		
I. Property, plant & equipment		
Tangible assets	9,340,198	4,139,845
II. Long-term loans & advances	6,026,877	4,296,275
<b>Total non-current assets</b>	<b>15,367,075</b>	<b>8,436,120</b>
2. Current assets		
I. Cash and bank balances	131,267,719	87,399,860
II. Short-term loans and advances	1,653,464	2,471,228
III. Other current assets	56,169,944	39,917,684
<b>Total current assets</b>	<b>189,091,127</b>	<b>129,788,772</b>
<b>Total assets</b>	<b>204,458,202</b>	<b>138,224,892</b>

## Income & Expenditure account, for the year ended 31st March 2020 (All amounts in INR)

	2020	2019
<b>Income</b>		
Project Funds & Grants	255,260,126	192,393,526
Other Income	6,272,717	6,129,412
<b>I. Total Income</b>	<b>261,532,843</b>	<b>198,522,938</b>
<b>Expenditure</b>		
Employee Benefit Expenses	117,687,662	107,372,426
Finance Cost	128	917
Depreciation expense	2,212,193	1,377,561
Operating & Other Expenses	132,917,192	86,291,963
<b>II. Total Expenditure</b>	<b>252,817,175</b>	<b>195,042,867</b>
III. Surplus/(deficit) (I-II)	8,715,668	3,480,071
IV. Tax Expense	-	-
<b>Balance carried to Reserves (III-IV)</b>	<b>8,715,668</b>	<b>3,480,071</b>



*Better treatments  
Better care  
Healthier societies*