

Annual Report 2018–19



The George Institute
for Global Health

India



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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, 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 12AA and 80G, of the Income Tax Act, 1961

About us

OUR MISSION

To improve the health of millions of people worldwide

In India, we aim to reduce premature and preventable deaths and disabilities. Our focus is on non-communicable diseases, road traffic injuries and mental health.

OUR VALUES

Our work is guided by 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 who are most vulnerable to disease and injury



A note from the Executive Director



The year covered in this report (2018-19) has been a period of continued growth and consolidation at The George Institute for Global Health, India. We broadened our program of work around producing greater and stronger evidence to support interventions that strengthen primary healthcare systems across the country. An important addition has been the inclusion of using the equity lens to identify gaps and as a target to the larger goal of achieving Universal Health Coverage (UHC). As in the past, none of this would have been possible without strong individual and institutional partnerships, to which we added a few this year. One of these notable partnerships is with the National Health Systems Resource Centre (NHSRC), with whom we signed an MOU primarily aimed towards capacity building and to identify best practices for strengthening the primary healthcare delivery system, especially the role of the ASHAs and other frontline health workers. These health workers are critical in expanding the delivery of scalable essential healthcare, as in our flagship *SMARThealth* program.

Non-communicable diseases and trauma injuries have reached an epidemic level in India, something we had foreseen at the very beginning of our journey a decade back.

In low-resource countries like ours, such conditions can prove immensely debilitating, not just for the people suffering from any of these conditions, but also for the entire families who have to bear its social as well as financial burden. The Institute recognises that it is time to find new evidence-based solutions which not only work, but are sustainable and affordable. In our effort to identify preventive measures, and provide such solutions for better treatment, we have determinedly expanded our program of work on kidney disease, stroke care, diabetes, heart diseases, gestational diabetes, mental health, and trauma care amongst others. For most of these conditions we have analysed the gaps in the current care system, and developed technology-based solutions which are people-centric and participative in their approach, and also go beyond the current systems.

New programs of work initiated by The Institute's researchers this year included leveraging the use of data to inform evidence-based healthcare delivery, a program focussing on a range of women's health issues, health economic evaluation and those around neglected health conditions-like drowning and snakebite.

Over the decade, we have also realised that providing affordable solutions is just one part of the process. In order to make it scalable, and reach a larger population so as to create bigger and better impact, we have to engage in advocacy and communications.

To that end, we have created institutional mechanisms to make stakeholder engagement central to all our work, we organised many events that engaged with as diverse a community as patients, civil society organisations, frontline health workers, primary care and specialist physicians, funding agencies, researchers and academics, healthcare policy makers and multilateral organisations.

An example of this community driven research program is around mapping the disease burden and finding possible causes and solutions to the now two-decade long mysterious epidemic of chronic kidney disease in Uddanam region of Andhra Pradesh, funded by the AP Government.

Our new project in the slums of Vijayawada also has included a novel community participation method by getting them to participate in a cartoon workshop! We organised a series of public events, the most notable being the Evidence2Policy lecture delivered by Professor Ian Jacobs, Vice-Chancellor of UNSW, Sydney - one of our strongest partners.

The Institute's researchers remain engaged with the global stakeholder community including the World Health Organization and the United Nations, and contributed to several initiatives, such as the WHO Digital Health Guidelines Development Group, the Guidelines Review Committee and the Organ Transplantation Task Force. The WHO guideline recommendations on digital

health interventions will allow the member states, experts and stakeholders to make informed decisions on implementing digital health interventions in healthcare systems.

These collaborations are proof that our work on evidenced-based implementation research is creating positive change and impact on the Indian, as well as global public health landscape by developing evidence around the use of innovative, disruptive, and affordable technological solutions.

Let me 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.

Even though it's been over a decade, we feel that our work has just begun! We are looking 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



Strengthening Health Systems

Through the National Health Mission and the Ayushman Bharat Scheme, India has already taken a big step towards public health reforms providing access to healthcare services and financial protection to all its citizens. However, it is also a known fact that access to healthcare, as limited as it is, tends to favour the privileged and leaves out the ones who are really in need of such services. Under the WHO's universal health coverage program, equity and equality are two important aspects of a robust and successful public healthcare system. In India, where lack of both equity and equalities is rampant, it is difficult to clearly state the magnitude of this problem which requires detailed qualitative as well as quantitative research to understand the various contexts.

The George Institute, India has initiated a project to assess the scale of inequalities and mechanisms underlying them in the state of Kerala, the data from which will be used to create a novel approach for health inequality monitoring in other states as well. The Institute is also working on a project which seeks to understand health-seeking behaviour and lived realities of marginalised communities such as wastepickers in urban spaces.

To help improve access of services to communities who are often neglected, The Institute is working to increase the uptake of health services in the urban slums of Vijayawada, and also studying the quality of and access to different types of food in rural areas and urban slums in four states of India, which can help make food-related regulations stronger.

In a boost to our work on universal health coverage in India, The Institute has signed an MoU with the National Health Systems Resource Centre (NHSRC) which provides technical support to the Ministry of Health and Family Welfare's flagship program, National Health Protection Mission. This project will identify the best practices from various communities which can be used to strengthen primary healthcare delivery especially through the new health and wellness centres across the country.

We also established a health economics unit within the Institute last year to assess the cost-effectiveness of various public health programs like the Intensified Mission Indradhanush (IMI) and the national tuberculosis program to provide crucial recommendations to the Government on maximising the impact of these interventions vis-à-vis the costs.

ASSESSING EQUITY OF UNIVERSAL HEALTH COVERAGE IN INDIA

India is focusing on achieving Sustainable Development Goals including goal 3 ensuring healthy lives and promoting well-being for all and at all ages through its Universal Health Coverage (UHC) reforms across states. However, to provide access to a robust healthcare system, it is necessary to understand the magnitude of inequalities in relation to age, sex, place of residence, religion, caste, tribal status and district. Our prior experience suggests that health interventions tend to privilege an already advantaged population, thereby increasing inequality.

Through this project, The George Institute, India aims to assess the scale of inequalities related to UHC-linked health reform in Kerala and to assess the mechanisms underlying these inequalities. In the first phase, detailed mapping of the data sources and monitoring processes in Kerala has been carried out. UHC-linked reforms have been underway in Kerala since 2016 under the rubric of the state's Aardram Mission, which aims to create people-friendly healthcare systems.

A modified group communication method known as the Delphi process was carried out under the guidance of senior bureaucrats resulting in the finalisation of 23 approved indicators and an additional 12 recommended indicators. Data was collated for these indicators and reviewed, on the basis of which a joint decision was made to undertake primary data collection to assess validity of routinely available data and more importantly, ensure availability of disaggregated data.

The project builds on a novel and innovative approach undertaken with the World Health Organization to build capacity in the monitoring of health inequalities across regions, while also synthesizing evidence on health-seeking behaviour of the urban poor in various Indian cities to help shape the National Urban Health Mission.



It was a refreshing experience to be part of a brainstorming session to prepare a monitoring indicator framework for primary care. I can't remember an earlier occasion where we [primary care doctors] were called for designing any program. Usually specialists (doctors) from medical colleges are part of committees that frame programs and we are called in the training phase. So, I feel this meeting by The George Institute, India was unique and better. The sessions were really interesting and the mix of group of varying backgrounds of field health workers, public health researchers and primary care doctors, led to very interesting conversations and fruitful results. It was also a chance for us to contribute to improve the area that we are working in.

Dr N. Mahesh
Assistant Surgeon,
CHC perumkalavida





ARISE TO SUPPORT WASTE PICKERS IN INDIA

While the health of waste pickers in urban spaces in India is a matter of concern, little is known about the challenges they face and how ill-health, inequity and insecurity combine to create an unsustainable living environment for them. What makes matters worse is that the governance mechanisms seem to be almost non-existent for such people.

If the goal of sustainable health and well-being is to be achieved, there is an urgent need to address poverty and inequality in the context of making cities and communities liveable for all. And if this has to happen we need to dig deeper into the lived experience of marginalised communities and the challenges they face.

The George Institute, India has embarked on an ambitious program in India to support the waste pickers in Shimla, Bengaluru, Vijayawada and Hyderabad, in claiming their rights to health, amplifying their voices, and building government accountability and capacity through evidence-based research, so as to facilitate security and services, and inform policy changes for these marginalised communities.

The Accountability for Informal Urban Equity (ARISE) project is part of a global consortium of interconnected and interdisciplinary research and action groups across Africa, South Asia and the UK. This project at the Institute in India is funded by The Global Challenges Research Fund/UK Research and Innovation under their interdisciplinary research hubs scheme and will address the intractable development challenge of ill-health, inequity and inequality in informal urban settlements in low-and middle-income countries in the context of complex and often dysfunctional governance arrangements.

The project work commenced in March 2019 and is still in its infancy. In the coming year, the group will finalise partners in the four identified cities and seek ethical clearance for the research work.

An advisory group has been formed and a meeting was held to help the team in crystallising its focus areas as well as the frameworks within which the research can be done. Work related to the conceptual, methodological and theoretical development has commenced through a series of reviews and framework mapping exercises.



ANALYSING POLICY AND SYSTEMS RESPONSE TO THE BURDEN OF SNAKEBITES IN INDIA

Snakebite is a neglected tropical disease. About 2.7 million people worldwide develop critical illness after snakebite envenoming and it leads to 125,000 deaths annually. However, there is a broad consensus, that these numbers are underestimates, as many victims do not report to health facilities. Apart from deaths, snakebite envenomation also causes long-term health effects, and has a high social and economic impact in affected rural communities. Recognising the public health impact of snakebite on vulnerable communities, the WHO has in 2017 added snakebite to the list of Neglected Tropical Disease (NTD).

India tops the list with 46,000 deaths due to snakebites annually (according to the Million Death Study, 2011), which accounts for about 37% of the deaths globally.

Snakebite envenomation largely impacts rural or tribal population who often lack political voice.

Most deaths occur amongst children and young adults (15-29 years), who often are the primary earners creating a huge social and economic impact on the families. Even though the burden of snakebite envenomation is so high, action on snakebite prevention and treatment has not been in proportion to the burden.

The Institute's project on the burden of snakebite started in November 2018, and seeks to examine policies and systems' response to address this critical, but largely neglected, public health challenge in India. It will also identify gaps in policies and implementation nationally as well as more granularly in two eastern states of Odisha and West Bengal.

It is expected that the results of the study will not only inform design of health systems strengthening interventions but also inform national and state level plans to address the burden of snakebite.





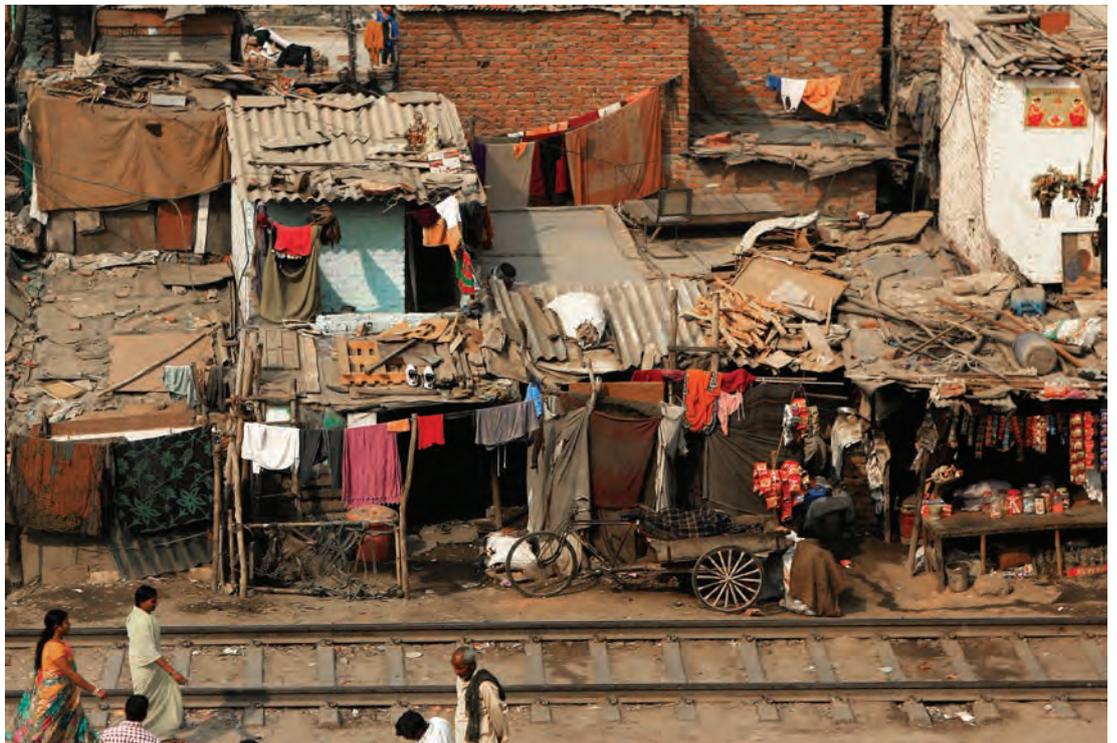
IMPROVING HEALTH SERVICES UPTAKE IN URBAN SLUMS OF VIJAYAWADA

Rapid urbanisation has been fueling migration of rural population to urban areas in search of better income opportunities, with the result that almost a quarter of the urban population subsists on income below the poverty line and live in deplorable conditions in slums and on the streets. Lack of basic civic amenities like sanitation, education and healthcare makes this segment of the population highly prone to numerous health problems and puts them at risk of infectious diseases. The Institute with support from HCL Foundation is working on a project to understand the problems being faced by five urban slum communities in Vijayawada and help in developing an intervention that will address these issues by increasing the outreach of the local health service providers.

Vijayawada has 111 slums. Being densely populated, the communities are susceptible to communicable diseases.

In addition, changing lifestyle such as increasing sedentary behaviour, poor diet, and increased consumption of alcohol and tobacco is leading to increasing (non-communicable) health problems like hypertension, diabetes, cardiovascular disease, kidney disease and mental health issues. However, health services uptake and lifestyle management is low. Preliminary research has shown that the outpatient visits over 27 urban health centres are limited to about 30 patients per day on an average, which is much less compared to the number of people who need treatment.

This project in Vijayawada seeks to understand the patterns of disease and health service uptake in the community, uses a community engagement approach to gain insights into gaps in the healthcare delivery system, and to co-produce, with key end-users and stakeholders, “testable” interventions to address critical gaps in healthcare delivery in this population.







Health Economics

COST AND EFFICIENCY OF THE INTENSIFIED MISSION INDRA DHANUSH PROGRAM

India's immunization program, launched in 1985, is one of the largest health programs of its kind in the world catering to a birth cohort of 26 million children annually. Despite being operational for over 30 years, only 65% children in India receive complete immunization during their first year of life. The Intensified Mission Indradhanush (IMI) program was a strategic endeavor launched by the Ministry of Health & Family Welfare, Government of India in October 2017 aiming to achieve full immunization coverage in the country by 2018.

It is obvious that a special drive like IMI requires additional resources. However, there is no information on the incremental cost of conducting IMI. This retrospective study was proposed to be carried out to estimate the additional resource requirements for IMI.

The specific aims of the proposed study funded by the Harvard T Chan School of Public Health, are to estimate the actual additional government expenditure, the economic opportunity cost and cost-effectiveness of the program.



THE COST OF PROVIDING TUBERCULOSIS SERVICES IN INDIA FROM A HEALTH SYSTEMS' PERSPECTIVE

The End Tuberculosis (TB) Strategy will require considerable investment in services and interventions. Given that current resourcing is highly constrained, improving the allocation of resources both to and within TB programs has the potential to substantially impact the epidemic.

Global and national funders are increasingly demanding sound investment cases before they provide resources to TB. Moreover, as new technologies are increasingly becoming available, it is critical that TB programs have the means to justify purchasing technologies that are cost-effective to their core funders.

Yet, currently the economic analysis required to support increased investment to TB, to both global and national funders, remains in its infancy.

The primary aim of this study being funded by the London School of Hygiene and Tropical Medicine is to estimate the costs of TB services to enable India's TB program and their funders to allocate their resources, both to and within TB, in an efficient and fair way. To achieve this, the study aims to provide a comprehensive set of unit costs for TB services in India and also develop a sustainable framework for TB cost data collection.

ECONOMIC BURDEN OF TUBERCULOSIS IN INDIA

India's national strategic plan for TB elimination envisages allocating substantial funds to mitigate the financial hardships of TB patients in India. Plans are underway to reimburse travel expenses for diagnostic and treatment purposes and to provide financial assistance to cover the cost of nutritional support during treatment. However, it is well accepted that globally TB control programs remain under-funded and this is particularly true for India as India's health budget is one of the lowest in the world. Therefore, to ensure proper utilization of limited budget and to plan for any social protection measures for TB patients, cost information regarding the disease is important. There is clear lack of information on comprehensive costs incurred on TB in India.

The proposed study will be an attempt toward filling this gap.

The objective of this research study is to estimate the cost of treating Drug Susceptible (DS) and Multi Drug Resistant (MDR) tuberculosis in India from a patient's perspective. The study will document the magnitude and main drivers of different types of costs incurred by TB patients in different settings. The results will be helpful in designing policies to reduce financial hardship related to this disease.

The study is being conducted in four States – Assam, Maharashtra, Tamil Nadu and West Bengal and has been funded by the Wellcome Trust / DBT India Alliance Intermediate Fellowship.



Strengthening Primary Healthcare Services

India's primary healthcare system comprises a strong network of healthcare services which has the capability of reaching the majority of the rural population and vulnerable communities in urban areas. However, despite good intentions, this system has remained broken for decades. With an alarming spike in non-communicable diseases and related deaths in the past decade, especially in rural areas, The George Institute, India felt it is time to research evidence-based solutions which are not only new and innovative, but affordable for all communities as well.

For the past decade, as well as last year, The Institute has worked on a twin strategy to help strengthen healthcare services for non-communicable diseases through the existing structure of the primary healthcare system by empowering frontline healthcare workers and developing technology-based solutions which are efficient, low-cost, sustainable and scalable.

Over the years, we have expanded our work from cardiovascular diseases to address some of the top 10 non-communicable diseases which are impacting mortality rates in India

Through evidence-based research and implementation, The Institute has been able to go directly to communities and help them gain access to healthcare support in their own settings. Some of these projects have been highly successful in India and are being adopted in other geographical regions and in countries like Thailand and Indonesia. The Institute is working with stakeholders in India to help scale up these solutions for bigger and better health outcomes in the future.

At the heart of all these interventions is the use of innovative, disruptive, and low-cost technological solutions which are patient-centred and created with inputs from discussions with the community. We have successfully brought together clinical and technology skills to create a platform called *SMARThealth* or Systematic Medical Appraisal, Referral and Treatment Health. Initially developed to understand the potential of managing risk of cardiovascular diseases, the platform has now been expanded to include various other non-communicable diseases such as chronic kidney disease, diabetes, mental health and addressing non-communicable disease complications in pregnant women. The Institute is also testing a reliable and efficient home-based dialysis support for people with chronic kidney disease.

TACKLING DIABETES IN RURAL AREAS

One of the major consequences of lifestyle change in India in the past 20 years is the spike in prevalence of type 2 diabetes, which is becoming the fastest growing disease in the country. With 49% of world's burden concentrated in India and 72 million recorded cases in 2017, diabetes has become an epidemic. Due to poor diet and consumption of high-calorie fast and processed food, diabetes is increasingly becoming common across all wealth brackets and age groups. But due to lack of guidelines-based care in the public healthcare systems, those in rural areas or urban slums end up with high rates of death and disability.

Tackling diabetes in rural areas is a project under the Institute's flagship *SMARThealth* program which is enabling frontline health workers or Accredited Social Health Activists (ASHAs) to screen people through a smart phone app and identify individuals aged ≥ 30 years who are at high risk of diabetes. The ASHA workers then offer them lifestyle and diet advice, refer them to the doctor for treatment, and follow up on their adherence to treatment.

This study has been conducted in two regions of the country - Guntur district in Andhra Pradesh and Rohtak district in Haryana. Eight primary health centers were selected across both the study sites. A total of 850 people have been screened

for the risk of diabetes and cardiovascular diseases as part of this pilot study in Guntur district. Those screened positive underwent a confirmatory test and then were followed up with referrals to physicians, lifestyle tips to modify diet and exercise and further visits by ASHAs to ensure proper management of their condition.

And in eight peri-urban areas of Rohtak district, more than 950 people have been screened for the risk of diabetes and cardiovascular diseases.

People who tested positive for diabetes are being followed up by the ASHAs and are being referred to PHCs for proper management.

The project was launched by Gladys Berejiklian, the premier of Australia's New South Wales region during her visit to India in April 2018. She also interacted with the frontline healthcare workers.

"A large number of newly detected diabetes cases in the two sites is one of the major successes of the study and highlights the need for effective screening by the community health workers"

Abhinav Bassi
Research Fellow,
The George Institute, India





TAKING MENTAL HEALTHCARE TO RURAL AREAS

India has finally put the spotlight of attention on mental health issues, especially amongst adolescents and young adults, and the way these disorders are treated by passing the Mental Healthcare Act 2017. The Act recognises the role the community can play in treatment and can go a long way in removing the stigma around mental illness.

However, with a rise in mental disorders, there has been no proportionate improvement in appropriate care-giving resulting in a healthcare gap of around 75-80% as compared to 40-50% in developed countries. This gap, which is more severe in rural areas, is largely due to the stigma attached to mental health disorders, lack of awareness about mental health, and lack of trained professionals.

The Institute's SMART Mental Health program was developed with the aim of using innovative strategies to increase access to quality mental healthcare in the absence of trained professionals.

It was extended post the success of the large scale pilot study in West Godavari region of Andhra Pradesh where suicide rates are considerably higher than the rest of the country. The pilot study showed a significant reduction in depression and anxiety amongst patients who had screened positive at the beginning. The awareness of the community on mental health had also improved which was seen to sustain beyond two years, leading to greater utilisation of services from 0.8% to 12.6%.

Taking forward learnings from the pilot study, a more robust method is being utilised by currently conducting a cluster randomised controlled trial across 44 PHCs in rural Haryana which includes screening a total of 165,000 adults. The formative work in Haryana, that looked into understanding the feasibility, acceptability and effectiveness of implementing the study and exploring community perceptions of mental health has been completed. The screening of community members will begin from June of this year and the intervention will be rolled out by the end of this year.

International Study of Discrimination And Stigma Outcomes (INDIGO)

INDIGO is a partnership program led by King's College London with seven other collaborating sites in five different countries (Ethiopia, India, Tunisia, China and Nepal). The project is funded by the UK Medical Research Council (MRC).

The long term goals behind this partnership program are to reduce the mental health treatment gap, to reduce stigma against people with mental illness, and positively modify attitudinal barriers within the primary healthcare system, community workers, community members and mental health professionals.

The five year-long study will be conducted at the Urban Primary Healthcare centres in Faridabad district and at the District Hospital.

It would involve community members, policy makers, civil society members apart from primary healthcare providers, community workers and mental health professionals.

Earlier research in high-income countries has shown that stigma can be reduced and help-seeking can be increased. However, this project will cover low- and middle-income countries, draw upon lessons learned from high-income countries, but modify and adapt them to local cultures and practices.

Three packages or intervention toolkits for use in community settings, in primary healthcare settings and for mental health specialists will be developed at the end of this project. These will be culturally relevant and will be evaluated using pilot interventions.

STOP CHRONIC KIDNEY DISEASE OF UNKNOWN ORIGIN

In response to the high burden of chronic kidney disease in the Uddhanam region of Srikakulam district, The George Institute, India is undertaking a study to operationalize preventive approaches for Chronic Kidney Disease of Unknown Origin (CKDu) awarded to it under Grand Challenges Program instituted by the Indian Council of Medical Research and Government of Andhra Pradesh.

This project aims to systematically determine the extent of the high burden of CKDu, identify its root cause and suggest remediable measures in the region. The initiative also aims to strengthen the provision of care for those with kidney diseases through the primary healthcare system by optimising the availability of medicines and high quality clinical services at the primary health centres throughout the state.

The study has a cross-sectional component to determine prevalence and a longitudinal component to determine

incidence. A survey has been completed in seven mandals of Uddhanam and a total of 2,423 participants recruited for screening. Their demographics, clinical history, vital parameters and biological sampling have been undertaken and biological tests such as complete blood picture, HbA1C, serum creatinine, urine protein, urine creatinine are being done.

Environmental tests and analyses are being done in partnership with TERI (The Energy and Resources Institute) in case and control areas. Samples of water, soil, vegetables and fish were collected and are being tested for various exposure elements.

A Kidney Disease Research, Innovation and Patient Assistance (KRIPA) Center has been set up at Palasa along with community health centres where patients with kidney disease are being counseled about their disease and next steps.





LIFESTYLE INTERVENTION FOR WOMEN WITH GDM

Gestational Diabetes Mellitus (GDM) is a form of diabetes which develops in women during pregnancy, with the hormones secreted by the placenta for the growth of the foetus sometimes causing resistance to the action of insulin, leading to increased blood sugar levels. GDM is known to put women at higher risk of developing type 2 diabetes later in life. Type 2 diabetes has reached epidemic levels in India and 35-40% of women with GDM run the risk of developing this chronic disease within five years of giving birth. Only 17.5% of women in India are aware of this disease and its complications.

The George Institute, India has teamed up with the All India Institutes of Medical Sciences (AIIMS) to conduct a trial - LIVING (Lifestyle interVention IN Gestational diabetes) to determine whether an affordable and culturally acceptable lifestyle intervention provided to women with GDM within one and

a half years after childbirth can prevent or delay the onset of type 2 diabetes. The study is being conducted along with collaborators from 19 public and private hospitals in India, Bangladesh, and Sri Lanka.

The intervention comprises group sessions, and text or voice message prompts on physical activity, healthy diet, and stress management. Trained study staff delivers the intervention, and monitors the outcomes over the period of the study.

“Young mothers report several challenges in finding the time and other resources to devote to promoting their own health and preventing chronic non-communicable diseases.”

Dr. Joysula K. Lakshmi,
Senior Research Fellow,
The George Institute India



INDIAN CHRONIC KIDNEY DISEASE STUDY

Apart from diseases such as hypertension, diabetes, and cardiovascular diseases, chronic kidney disease (CKD) is now the eighth leading cause of death in India.

Most kidney diseases do not show any symptoms, and hence are largely detected at the last stage. Treatment at this point, whether it is dialysis or renal replacement therapy, comes with enormous financial implications which is beyond the reach of many people. So far, there has been no longitudinal study to understand high risk complications and progression factors of CKD in India.

The Institute with funding from the Department of Biotechnology, Government of India, is filling this gap by undertaking a five-year longitudinal study of 5000 subjects with early-stage CKD

in nine leading nephrology centres in the country.

The study, which is a first-of-its-kind in India, is tracking the natural history of the subjects, and progression of the disease; clinical and laboratory factors that predict complications; consented biological samples (bio-banking) to explore association of genetic and metabolic markers with CKD severity, progression, and increased risk for CVD; and impact of CKD on quality of life and its socio-economic consequences. The study is part of a global movement on the understanding of racial, ethnic, and geographic factors that impact the lives of CKD patients across the globe.

SUPPORT FOR HOME-BASED PERITONEAL DIALYSIS

As part of The George Institute, India's larger work on prevention and management of Chronic Kidney Disease (CKD), the Institute has successfully combined medical skills and computer sciences to create a self-care tool for patients suffering from end-stage renal treatment.

Nearly two lakh people in India have to undergo renal replacement therapy each year for end-stage kidney failure. The popular and often recommended treatment is haemodialysis even though home-based peritoneal dialysis is a more convenient option.

Even amongst the patients, the common perception is that dialysis under expert supervision is better, and hence they avoid home-based or self-dialysis which actually can improve their quality of life as well as economic situation.

The Institute's innovative mobile phone-based application developed under this project can now provide an integrated, patient-centred, affordable and sustainable system for remote-monitoring and management of patients undergoing home-based peritoneal dialysis.

This award winning application that has incorporated medical informatics now can be used as a companion for people with end-stage kidney failure on self-dialysis.

This application provides a virtual simulation of the care provision scenario under the supervision of primary care physicians and nephrologists, and helps patients be in control of their health by receiving real-time assistance through an automated evidence-based clinical decision support system. The system is able to pre-empt development of complications by detecting them early and be in constant communication with care providers.

TACKLING NCDs DURING PREGNANCY

Women's health is a high priority at The George Institute, India and together with the task of achieving the sustainable development goals of ending preventable maternal, new-born, and child deaths, it has created the *SMARThealth* Pregnancy program that aims to reduce premature deaths by helping community health workers identify women at risk and manage their healthcare especially during and after pregnancy.

Some of the high risks women face during pregnancy are diabetes and high blood pressure, which can also lead to cardiovascular problems. Women with high blood pressure during pregnancy are four times more likely to develop long-term high blood pressure, and women with diabetes during pregnancy are seven times more likely to develop type 2 diabetes within five years of giving birth. However, women in rural India are

unaware of such complications, never seek treatment and hence unable to access postnatal preventive therapies.

Through this program, the Institute is training community healthcare workers and primary care doctors to use the new *SMARThealth* Pregnancy app to identify and manage the care of pregnant women with high blood pressure, gestational diabetes and anaemia, ensuring they get high-quality treatment during and after pregnancy to improve outcomes for the pregnancy and reduce the risk of heart disease, stroke and diabetes in women.

The app has been developed after extensive user consultation with stakeholders at all levels. Usability testing was completed in March 2019 and two national level stakeholder meetings to identify challenges and opportunities in the health system were conducted in March and April 2019.



Preventing NCDs and injuries

The George Institute, India recognises the need for addressing risk factors relating to non-communicable diseases whether it is looking at the rising burden of diet related diseases or factors like sedentary lifestyle that contribute to the NCD burden. Simultaneously, it is also critical to look at community practices when it comes to issues like drowning, natural disasters and diseases that result from unhygienic community practices.

There is also a need to improve hospital-based guidelines to improve treatment of stroke, fracture care and rehabilitation of accident survivors. Focus on neglected issues like snake bites and the resultant public health burden has been another new area of work for us this year.

IMPROVING STROKE CARE IN INDIA

India has seen a major leap in occurrence and mortality due to cardiovascular disease (CVD) including stroke in the last 20 years. Though stroke is a common cause of death globally, in India the incidence is increasing rapidly, especially amongst the rural population. India now has the third-highest number of people dying from stroke across the globe. Of all CVD related deaths in India, 28% are due to stroke. Not only has there been a 50% increase in the prevalence of heart diseases in all states, the age group susceptible to this is much lower than the global average of 70 years. Another growing concern is the increase in prevalence of CVD and stroke amongst women. Whilst stroke is more common in men, women tend to have more severe strokes.

These changes require the development of stroke care and rehabilitation within the

public healthcare system as well as home care.

This research collaboration was initiated by the University of Central Lancashire in August 2017 in collaboration with The Institute and other partners. The study aims to develop packages that can be incorporated into routine nursing care for stroke patients.

Based on the evaluation of the current system of stroke care in India, the care package will have three components

- Assessment and management of care for patients having problems with swallowing food and fluids;
- Monitoring and management of neurological and physiological signs and symptoms;
- Education and training of caregivers including family members to support stroke patients in acute settings.

The feasibility of implementing these care bundles will be assessed at the All India Institute of Medical Sciences, New Delhi, Christian Medical College, Ludhiana and Sree Chitra Tirunal Institute of Medical Sciences and Technology, Trivandrum. The study team has received funding from The National Institute for Health Research (NIHR), UK through the University of Central Lancashire to facilitate discussion about future stroke studies in India involving additional clinical centres.

As part of research capacity building, an international conference was organised in November 2018 for the multidisciplinary teams involved in stroke care. More than 350 delegates across India attended the conference to share their knowledge, expertise, and experience on stroke care with an esteemed scientific panel comprising of international and national experts.

IMPROVING DIALYSIS OUTCOMES

End-stage renal disease and its current standard of care, renal replacement therapy and/or kidney transplant result in substantial economic and societal costs. In developed countries, ESRD affects about 0.03% of the total population, but RRT costs consumes up to 3% of annual healthcare budgets. Most developed countries have renal registries that provide critical information to support the planning, delivery and evaluation of dialysis and transplantation services. The lack of a renal registry means that there are few reliable statistics on RRT from India. Governments are currently unaware how many of their citizens are dying of advanced kidney failure. The impact of dialysis (where services are available) on outcomes and cost of care is not known.

With the National Dialysis Program becoming operational from 2014, a window of opportunity presented itself to embed a Registry Framework in the system with minimal effort and cost. India Dialysis Registry, established by The George Institute, India aims to collect information about what happens to patients during the course of their dialysis treatment.

The aim of the project is to know the patients' treatment experience, satisfaction with overall service, impact of dialysis on households, social relations and financial burden, coping strategies employed, and access to social support.

A total of 12 sites have been enrolled under the study by March 2019. More than 750 patients have been recruited as part of the study and nearly 60% of them have completed their first month follow up.

Dialysate concentration and health outcomes study

The George Institute, India is participating in a global clinical trial examining the influence of different dialysate sodium concentrations on cardiovascular and other outcomes in haemodialysis patients.

Dialysate sodium refers to the concentration of sodium in the dialysate and helps determine the amount of water and sodium to be removed from the blood. Many haemodialysis centres practice a 'default' approach whereby all or most patients in the centre are exposed to a single, default dialysate sodium concentration.

The study will establish whether the adoption of a default dialysate sodium concentration of 137mmol/l compared with 140mmol/l reduces major cardiovascular events and deaths in adult patients receiving haemodialysis.

A total of 37 dialysis units across the country are participating in this trial.



MITIGATING THE BURDEN OF FRACTURES

International Orthopaedic Multicenter Study in Fracture Care (INORMUS) is an observational study in fracture care that is being conducted in 40 hospitals across 18 countries from Asia, Africa, and South America. Globally it will study 40,000 adult patients admitted in the hospital for treatment of any musculoskeletal injury. In India, the study is a collaboration between The George Institute and McMaster University in Canada.

With rapid urbanisation and motorisation, risk of injury due to trauma and road accidents is also increasing. Over 90% of all road traffic deaths occur in low-and middle-income countries and trauma is among the top three leading causes of death in people under the age of 40 years worldwide. Musculoskeletal injuries are common manifestations of trauma, occurring in over 60% of injured people. Though the burden of musculoskeletal injuries is not known in these countries, the trend worldwide shows that poor people are more likely to be injured, receive sub-standard care or no care, and treatment for such injuries often push such families deeper into poverty. Through the INORMUS study, The Institute seeks to determine the incidence of major complications (mortality, re-operation and infection) as a composite outcome and as individual components within 30 days post-hospital admission in adult patients with acute fracture or dislocation; and factors (system and patient variables) associated with the composite of major complications within 30 days post-hospital admission.

The study will help understand the burden of musculoskeletal trauma and identify factors associated with complications that can be changed, in turn help in reducing morbidity and mortality in musculoskeletal trauma patients in developing countries.

In India, the recruitment for the study is nearing completion with 8500 patients being recruited in 12 sites. The study findings will inform measures to mitigate the burden of fractures in India and other low-and middle-income countries.

Developing new models of rehabilitation for trauma survivors

The study aims to address some of the challenges in developing a comprehensive trauma care system in India. This research program involves five Indian hospitals in three cities of Mumbai, New Delhi and Ahmedabad and is being done in collaboration with the All India Institute of Medical Sciences in New Delhi and Australia's National Trauma Research Institute (NTRI).

As part of the Australia India Trauma Systems Collaborations, an observational study was completed earlier to understand various rehabilitation practices that exist for people hospitalised with lower limb fractures. This year we completed the pilot randomised controlled trial in three trauma centres in Delhi, Ahmedabad and Mumbai. Training on a new model of physiotherapy based rehabilitation was given to the study patients as part of the intervention. It is hoped that the data gathered from the trial will inform the development of a large scale research on newer models of rehabilitation in resource poor settings.

ACCESS TO HEALTHY FOODS IN RETAIL OUTLETS

Two parallel health issues are evolving in India: one which is related to malnutrition caused by under-consumption of essential nutrients is on a decline though overall prevalence remains high; the other is related with excess consumption of adverse diet such as salt, sugar, fats and processed food which is leading to rapid growth in chronic life-threatening diseases.

In the last decade stunting among children has declined from 48% to 38% and underweight from 43% to 36%. However, over the same period, rate of obesity has almost doubled from 9% to 19% among men and 13% to 21% amongst women.

Funded by The Bill and Melinda Gates Foundation, the project is a cross-sectional survey of the foods available in the large, medium and small retail outlets in urban, rural and slum communities in four States of Delhi, Andhra Pradesh, Bihar, and Uttar Pradesh. The aim of the project is to quantify the communities' access to healthy foods from retail outlets in these areas with a special focus on packaged and unpackaged foods, types of foods available, food labelling, nutritional quality of the foods, and their price.

The final assessments will be made separately for each community in each state.

Data was collected from 44 stores across these four states on packaged foods with barcodes, and unpackaged foods without barcodes using a bespoke smart phone application and data management system (FoodSwitch).

The study showed that compliance with India's recent draft labelling guidance on reporting nutritional data for packaged foods was low, while compliance with prior regulations was nearly three-fold higher.

A salt reduction intervention package for school adolescents and their parents

A cluster randomized controlled trial is being conducted in government schools in urban areas of Chandigarh to implement and assess the impact of school-based salt reduction intervention package on adolescents and their parents. The study will be carried out with early adolescents aged 10-14 years to bring change in the salt intake in families. The study will be carried out in three phases: Baseline assessment for 12-weeks, intervention component for six months and endline assessment at 12-months, to assess the impact of intervention. All participants in intervention group will receive intensive low salt diet education which will be delivered by dietitians. The nutritional education sessions will be school-based and will cover health issues associated with excess dietary sodium intake, identification of foods typically high and low in sodium. The outcome is the difference in the estimated daily salt intake and blood pressure between the intervention and control groups post-intervention. Salt intake will be assessed from 24-hour urine sample method and spot urine method. Blood pressure will be measured during baseline and post-intervention. This project is a partnership between The George Institute, India and Post Graduate Institute for Medical Education and Research, Chandigarh.



DROWNING IN LOW-AND MIDDLE- INCOME COUNTRIES

Drowning is considered by many as an accident or an incident that cannot be prevented. However, considering that India accounts for a significant proportion of drowning deaths worldwide with one drowning related death reported every eight minutes, it is a public health issue. Drowning deaths in children, mainly boys, less than five years of age is reported to be three times higher in rural areas than in urban areas due to easy access to open bodies of water. A majority of such cases occur in the north-eastern part of the country, and in the Ganges Delta region, where heavy monsoon rain causes frequent flooding of major rivers.

The Institute had conducted a study in the 24 South Parganas district of West Bengal to understand the impact and perception of childhood drowning by the community and to suggest preventive measures. The study used observations, focus groups, and interviews with community leaders, household heads, parents and children aged 7–17 years from three remote villages affected by drowning events.

The study concluded that low-cost community-based approaches to improving child water safety need to be developed along with parental education to improve supervision of children who play near open water bodies. Children frequently play unsupervised near potentially hazardous water, as their parents are away on work for long hours. Since supervision of children is primarily considered the responsibility of the mother, women are held accountable for such deaths. Though rescue and resuscitation were community driven, women felt restricted taking part in the actual rescue effort due to the clothes (saree) they wear. Most people used traditional approaches to resuscitation including shaking a drowned child to induce vomiting and rubbing hot oil over their body.

Next phase of our work looks into documenting mortality burden among children in West Bengal through a community knowledge based approach survey.



ENVIRONMENTAL SUPPORT FOR WALKING IN INDIA

India bears a high burden of non-communicable diseases, as well as risks for NCDs, such as inadequate physical activity. Physical and social environments are known to influence these patterns. Strategies to promote physical activity include the creation of conducive physical and social environments.

However, unplanned urbanisation, an explosion in motorised transport, reduced green cover, and increased air pollution, have all led to a rapid alteration in physical and social environments, detracting many people in India from outdoor activity especially walking.

The Institute's pilot study on Environmental Support for Walking in India (EnSWIn) aims to assess perceived support for walkability among the residents of Hyderabad and Vijayawada. This study will survey 1800 adults in all, in Hyderabad and Vijayawada, to elicit perceptions of the social and built

environments and their association with physical activity patterns, specifically walking.

A wide range of participants from different socio-economic strata, genders, ages, and residential areas will be surveyed. Some of them will also be invited to engage in in-depth discussions to offer insights into the relationship between their environment and physical activity. Geographical Information Systems and Global Positioning Systems available for the study areas will be collected and analysed with regard to the self-reports of the respondents.

The findings will pave the way to better understanding of, and the development of nuanced strategies to promote physical activity in the different subpopulations, in particular the underserved.

STUDYING RESILIENCE TO DISASTER RELATED DISPLACEMENT

Globally, natural disasters affect the lives of over 200 million people every year. Between 1995- 2015 over 2.3 billion people were affected by water related disaster leading to 1.5 million deaths. Floods account for almost three-quarters of the total displacement globally each year. Of these, India has the highest annual displacement in the world, with nearly two million people displaced each year due to floods. Assessing community vulnerability to natural disasters is the first step towards understanding the impact of floods, capacity of communities to mitigate risks in the face of a disaster, and determine not only individual and community survival, but also the extent of other long-term social, economic and psychological effects on a population. The Char community in Assam dwells in an 'almond' shaped riverine alluvial

formation (the chars) where their lives are dominated by recurrent water related disasters.

In 2017, The Institute undertook a qualitative study in Assam among Char population to understand community experiences, perceptions and responses to natural disaster and found a complex interplay of contextual factors related to poverty due to loss of land, erosion and water pollution that challenged communities' ability to respond and recover from natural disasters.

Building on these findings, the present study will comprehensively investigate all dimensions of community vulnerability and use participatory approach to develop and priorities interventions for disaster risk reduction for future testing and implementation.



MENSTRUAL HYGIENE IN INDIA

Menstrual Hygiene Management (MHM) is a largely neglected area in research and implementation. While the association between Water and Sanitation Hygiene (WASH) facilities and school attendance, and taboos surrounding menstruation have been studied to some extent, and the subsidised provision of sanitary pads (mostly disposable) been promoted through several government and non-government initiatives, practices of treatment and disposal of used absorbents have not received adequate attention from policymakers, and implementers, and pose ever-growing challenges to environmental sustainability and the personal health and well-being of girls and women, with implications for the accomplishment of several sustainable development goals.

This study is a cross-sectional, qualitative exploration set in and around Hyderabad, using in-depth interviews, focus group discussions, and photo-documentation, to understand the practices, preferences, and perspectives related to MHM among girls and women, with special attention to treatment and disposal of used absorbents, perspectives on the association of MHM and personal health, and MHM and impact on the environment. Further, this study will estimate the environmental impact of the MHM products and practices reported by the participants.

This study highlights the need for awareness-raising and social change interventions, as well as policy advocacy, to create and nurture a supportive environment for sustainable, healthy, affordable, and acceptable MHM practices.





Policy Engagement and Other Events

This has been a year of greater public and policy level engagement with various stakeholders. We have not only participated in various events such as the International Digital Health Symposium 2019, but have also hosted events that have the potential to become platforms in future for meaningful discussions on various important issues such as the Evidence2Policy lecture series which we kick-started this year. Some of the key events and engagements this year include

HEALTHY MIND STREET ART SEPTEMBER, 2018

In a unique first-of-its-kind event, The George Institute, India and the Wellcome Trust/ DBT India Alliance collaborated to organise the Healthy Mind Street Art event at Select City Walk mall in Saket on September 14, 2018. The aim of this event was to bring artists and researchers together to promote awareness as well as dialogue on mental health, especially workplace stress, which is often neglected across industries and countries including India.

Prior to that event, there was a workshop with human resource managers of a number of corporate organisations to discuss workplace stress and using art as a form of expression.

SHOWCASING SMART^{health} TECHNOLOGY OCTOBER, 2018

The Institute hosted a showcase of its SMART^{health} technology which has been designed to help community health workers identify and treat people at high risk of chronic conditions such



ASHA WORKERS FROM HARYANA WITH
PROFESSOR LOUISE RICHARDSON

as diabetes, kidney diseases, and heart disease. Professor Louise Richardson, Vice-Chancellor of the University of Oxford, with which The George Institute UK is affiliated, was chief guest for the occasion. The showcase demonstrated the smartphone-based system's functionality by female community health workers (ASHAs) on a patient and described its use in primary care settings.

POLICY ROUNDTABLE ON THE ROLE OF FRONTLINE HEALTH WORKERS IN INDIA

NOVEMBER, 2018

The national Comprehensive Primary Healthcare program under the National Health Mission aims to provide access to essential healthcare at the community level through the community health workers, multipurpose health workers and a mid-level health provider. The Policy Roundtable was organised by The Institute to bring the frontline health workers to the forefront of the conversation on primary healthcare, especially in the context of epidemiological transition and focus on life-course approach to health. The roundtable which included researchers, policy makers, and civil society working with frontline health workers, focussed on how the workforce is trained, remunerated, motivated and retained to deliver comprehensive primary healthcare and the key challenges particularly in relation to their recruitment.

EVIDENCE 2 POLICY LECTURE

DECEMBER, 2018

Following a successful 10 year anniversary lecture in 2018, The George Institute, India announced an Evidence2Policy lecture series to bridge the gap between evidence and policy. The first lecture in the series was delivered by Professor Ian Jacobs, Vice-Chancellor, UNSW, Sydney on the topic "Evidence base and case for action in the screening and prevention of ovarian and cervical cancers".



**PROFESSOR IAN JACOBS
DELIVERING THE E2P LECTURE**

The lecture focussed on the evidence base and case for action in screening and prevention of ovarian and cervical cancers across the world, especially from the perspective of their 100 year old history, its current status in India, and the steps that could be taken in future to address social and health systems related challenges, and make it's prevention as successful as it is high-income countries.

The lecture was followed by a panel discussion on 'women's cancers: a public health agenda' with eminent speakers and experts from medical, policy, and public health sectors. The discussion focused on the current status, what has worked for prevention of cancers in women in India in general and cervical cancers in particular, and the key challenges to the implementation of an effective preventive cancer healthcare program for women in the country.



PARTICIPATION IN THE INTERNATIONAL DIGITAL HEALTH SUMMIT

FEBRUARY, 2019

Delegates at the International Digital Health Summit and Symposium got a chance to interact and applaud the work of four ASHA workers from Haryana, who demonstrated the use of technology in screening non-communicable diseases as part of the Institute's *SMARThealth* project.

The symposium was attended by government officials, academics, health experts, and civil society representatives from across the world who rallied behind the Delhi declaration that affirmed the role of technology in healthcare delivery systems.

The ground level exhibition provided an insight into the kind of technologies that are being developed to tackle various health challenges such as health ATMs, use of tablets and apps, robotics and computer-aided designs.

The symposium provided a platform for experts from The Institute to participate in policy-level discussions and deliberations.

COMICS WORKSHOP IN URBAN SLUMS

MARCH, 2019

A three-day 'comic workshop' was held by the Institute at the Chief Minister's Urban Health Centre, Vijayawada with the aim to empower young women and adolescent girls from 10 urban slums and help them express the daily health challenges they face. The workshop used story-telling through comics and focused on topics such as anaemia and malnutrition, immunisation and mother, child health, sanitation, open defecation and disease burden, outreach health services, drinking water issues and eye related problems. This workshop was supported by HCL Foundation.





COMICS WORKSHOP
IN URBAN SLUMS



MENTAL HEALTH POLICY SYMPOSIUM

MARCH, 2019

The George Institute, India organised a policy symposium to explore how the SMART Mental Health can contribute to the National Mental Health Program and strengthen mental healthcare delivery models. At the symposium, The Institute informed the government of our ongoing efforts to promote better mental health services and deliberated on policy level aspects of taking knowledge generated through this project to larger communities, and using scalable solutions. This event was attended by a diverse group of local, regional and national government representatives, as well as civil society members. Dr Alok Mathur, Additional Director General, Ministry of Health and Family Welfare was the chief guest on the occasion and gave an overview of the national mental health program.

ROUNDTABLE ON TACKLING HIGH-RISK PREGNANCIES

MARCH, 2019

The George Institute, India and University of Oxford UK, jointly hosted two national stakeholder meetings in New Delhi and Vijayawada to identify priorities and challenges to integrate screening and management of non-communicable diseases into maternal and child health services in India. The workshops were attended by stakeholders from diverse sectors including government, health, academia, non governmental organizations, media and technology, and helped identify the key uncertainties and questions that need to be addressed in order to improve women's lives and reduce pregnancy and longer-term complications in women that experience high-risk pregnancy.



HIGH RISK PREGNANCIES MEETING IN DELHI

NATIONAL SYMPOSIUM ON EVIDENCE SYNTHESIS

APRIL, 2019

The first-ever two-day National Symposium on Evidence Synthesis for Medicine, Public Health and Social Development (NSES 2019) was organised by The George Institute, India along with Campbell Collaboration in New Delhi in April, 2019. The symposium brought together 120 practitioners, policymakers and researchers from 12 States to share and learn the various evidence synthesis methods and its applications across medicine, public health and social development and included panel discussions on evidence synthesis in social development, clinical practice guidelines, evidence-informed policy and evidence-informed journalism.

A key highlight of the symposium was oral and poster presentations on evidence synthesis research on various topics of medicine, public health, social and economic development. Over 94 abstracts were received from researchers across the country and 34 chosen presentations were presented in the sessions spread over two days.

The symposium was supported by a several academic partners that include READ-It, Health Systems Global, The Global Evidence Synthesis Initiative (GESI), Independent Council for Road Safety International (ICORSI), Professor B.V.Moses Centre for Evidence-informed Healthcare and Health Policy, CMC Vellore and The Transportation Research and Injury Prevention Programme (TRIPP) at IIT-Delhi.



NATIONAL SYMPOSIUM ON EVIDENCE SYNTHESIS



Our Governance

Our Directors

Professor Vivekanand Jha

Executive Director, The George Institute for Global Health, India
James Martin Fellow,
The George Institute for Global Health, University of Oxford
President, International Society of Nephrology, 2019-2021



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, and the executive committee of the International Society of Nephrology.

He is a councillor of the International Society of Nephrology, a member of the education committees for the International Transplantation Society and 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. More recently, he was elected president of the International Society of Nephrology from 2019 to 2021.

Professor Anushka Patel

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



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.

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).

Dr Pallab K. Maulik

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



Pallab K. Maulik joined The George Institute for Global Health, India as the Head of Research in early 2010. Dr Maulik brings a wealth of experience to The Institute, in particular expertise in mental health.

Pallab has worked with the World Health Organization (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, Pallab 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

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 is a Chartered Accountant and holds a degree in Commerce from Delhi University.

Our Advisors

Professor S.V.Madhu

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

Dr Usha Raman

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

Dr Rajapurkar Mohan Manohar

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

Dr D.K. Shukla

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

Dr Jagdish Kaur

Regional Adviser, Tobacco Free Initiative,
WHO South East Asia Regional Office,
New Delhi

Dr 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

Dr H.S.D.Srinivas

Head-Health, Tata Trusts, Mumbai

Dr Shirshendu Mukherjee

Mission Director, BIRAC



Our Key Partners, Funders

Key Partners and Funders

- Indian Council of Medical Research (ICMR)
- National Health Systems Resource Centre of the Government of India
- Duke University (through Duke Global Health Institute)
- Public Health Foundation of India (PHFI)
- Health and Family Welfare Department, Government of Andhra Pradesh
- Amity University
- Post-Graduate Institute for Medical Education and Research, Chandigarh
- Christian Medical College, Vellore
- University of Hyderabad
- Department of Biotechnology
- National Health and Medical Research Council Australia (NHMRC)
- Wellcome Trust -DBT India Alliance
- Baxter Foundation
- HCL Foundation
- Bill and Melinda Gates Foundation
- NASSCOM Foundation
- Pfizer Foundation
- Grand Challenges, Canada
- London School of Health and Tropical Medicine
- Harvard University
- Benevity Causes
- UK Online Giving Foundation



DIGNITARIES AT THE GEORGE INSTITUTE, INDIA STALL AT THE INTERNATIONAL DIGITAL HEALTH SYMPOSIUM

Our Key Collaborators

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

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, Geneva
- Harvard University
- University of New South Wales, Sydney
- National University of Singapore

Our global affiliations





Our Finances

Balance Sheet, as at 31st March 2019

(All amounts in INR, unless otherwise stated)

	2019	2018
Equity and Liabilities		
1. Shareholders' Funds	-	-
I. Share capital	25,624,920	25,624,920
II. Reserves & surplus	37,424,224	33,944,153
Total equity	63,049,144	59,569,073
2. Non-current liabilities		
I. Long-term provisions	10,897,419	6,809,647
Total non-current liabilities	10,897,419	6,809,647
3. Current liabilities		
I. Trade payables	3,857,884	2,459,088
II. Other current liabilities	57,127,454	46,658,819
III. Short-term provisions	3,292,991	721,774
Total current liabilities	64,278,329	49,839,681
Total liabilities	75,175,748	56,649,328
Total equity and liabilities	<u>138,224,892</u>	<u>116,218,401</u>
Assets		
1. Non-current assets		
I. Property, plant & equipment		
Tangible assets	4,139,845	3,482,063
II. Long-term loans & advances	4,296,275	3,190,340
Total non-current assets	8,436,120	6,672,403
2. Current assets		
I. Cash and bank balances	87,399,860	91,239,114
II. Short-term loans and advances	2,471,228	1,600,736
III. Other current assets	39,917,684	16,706,148
Total current assets	129,788,772	109,545,998
Total assets	<u>138,224,892</u>	<u>116,218,401</u>

Income & Expenditure account, for the year ended 31st March 2019

(All amounts in INR, unless otherwise stated)

	2019	2018
Income		
Project Funds & Grants	192,393,526	125,026,290
Other Income	6,129,412	4,211,298
I. Total Income	198,522,938	129,237,588
Expenditure		
Employee Benefit Expenses	107,372,426	79,622,967
Finance Cost	917	6,886
Depreciation expense	1,377,561	1,772,951
Operating & Other Expenses	86,291,963	43,579,924
II. Total Expenditure	195,042,867	124,982,728
III. Surplus/(deficit) (I-II)	3,480,071	4,254,860
IV. Tax Expense	-	-
Balance carried to Reserves (III-IV)	<u>3,480,071</u>	<u>4,254,860</u>

Our Impact



740
Community health workers upskilled

694
Health professionals' capacities built



+350
Publications

40
in high impact journals



Policy Achievements



- Set up distinctive biobank linked disease registry



- First time mapping of the chronic kidney disease of unexplained aetiology in coastal districts of Andhra Pradesh

- Established National dialysis registry framework



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



Social innovations

- Facilitated Inclusion of combination pills in WHO essential medicines list



- Improving the management of chronic diseases through guideline based care at primary health center.



- Improving the quality of dialysis in Andhra Pradesh

- Training health staff to manage women with gestational diabetes through lifestyle modification.

- Provided expert guidance to WHO's digital health guidelines



- Reducing stigma and increasing access to mental health services in communities.



Our Reach



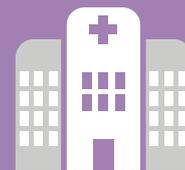
Target Population
~300,000



Villages
1000



Districts
45



Hospitals
20