



London School of Hygiene & Tropical Medicine

Keppel Street, London WC1E 7HT
Switchboard: +44 (0)20 7636 8636
ExternalRelations@lshtm.ac.uk
www.lshtm.ac.uk

**For further information on our work in India
please contact Dr Sanjay Kinra on:**

London +44 (0)20 7927 2088
New Delhi +91 (0)11 2651 3082
Hyderabad +91 (0)40 4900 6000
Email sanjay.kinra@lshtm.ac.uk

Improving health worldwide

Working together for change



Over the past decade, India has emerged as a global economic power, as well as the world's most populous democracy. Yet alongside this impressive development, the country faces critical health challenges both old and new.

Millions of people, particularly in poorer states, are suffering from treatable infectious diseases and various forms of malnutrition. Child and maternal mortality are still high, and with increasing urbanisation and an ageing population, we have seen the emergence of a new epidemic of non-communicable diseases including cancers, diabetes, heart disease and mental illness.

The scale of the challenge is immense, but the solutions are in our hands, if we have the imagination and determination to implement them. Working together, government agencies, researchers, health workers, activists, entrepreneurs and philanthropists can develop and deliver effective public health programmes.

Our School has been working with partners in India for many decades, and we understand that solutions can only emerge from working together, locally and globally. There are numerous wonderful examples of innovative projects that are transforming lives, but rather than reinvent the wheel at every turn, it is vital that we evaluate, learn and apply these lessons more widely to build effective health systems that provide universal access to diagnosis, treatment and care for all.

This is why we are working with the Public Health Foundation of India and numerous other partners including government agencies, universities, industry, NGOs and community groups, inspired by a common vision to improve health for all.

We hope that by reading about some of these projects, you will be inspired to support our work and to join us.

Baron Peter Piot

Director and Professor of Global Health
London School of Hygiene & Tropical Medicine

Contents

- 01 Building capacity for public health
- 02 Tackling serious diseases: a new partnership for research
- 04 Putting health on the map: project and partnership highlights
- 07 Malaria in pregnancy
- 08 Non-communicable diseases: the emerging epidemic
- 09 New approaches to mental health
- 10 Support our work in India

Building capacity for public health



Professor K. Srinath Reddy
Founding President,
Public Health
Foundation of India

Despite substantial economic progress in recent years, India still faces serious health challenges, and has long suffered from a lack of human resource capacity in the public health system.

Launched in 2006 by the Prime Minister of India, the Public Health Foundation of India (PHFI) is a public-private initiative that is building institutional capacity in training, research and policy development in public health. One of our core aims is to establish up to eight schools of Public Health across India, and we have already been successful in setting up the first four of these, with the support of governments, NGOs, universities and individual supporters.

This would not have been possible without the PHFI-UK Consortium, a partnership between PHFI and sixteen UK institutions including the London School of Hygiene & Tropical Medicine. Our partnership with the School is born of a common vision, and we have been able to foster strong, enduring and productive academic links, which have greatly improved the research and teaching skills of our PHFI faculty.

We look forward to continuing to develop this partnership to help build a nationwide network for public health.

Our developing partnerships with the Public Health Foundation of India

The London School of Hygiene & Tropical Medicine is actively involved in supporting the development of the Public Health Foundation of India through a Wellcome Trust grant which offers funding to a large number of PHFI faculty members to undertake masters and doctoral studies in the UK, and to conduct research projects in collaboration with UK faculty.

The programme is co-ordinated by the London School on behalf of sixteen leading UK institutions, working with the new Schools of Public Health in Delhi, Gandhinagar, Bhubaneswar and Hyderabad. Areas of research and training range from maternal and child health to the treatment of infectious disease to health policy and financing.

School professors David Heymann and Simon Croft are now working with PHFI to set up a Centre of Excellence in Infectious Diseases in Delhi, in partnership with the Royal Veterinary College and the Health Protection Agency.

Tackling serious diseases: a new partnership for research

The Bloomsbury Institute for Pathogen Research is a new joint venture of the London School of Hygiene & Tropical Medicine and University College London (UCL), dedicated to understanding every aspect of pathogens, from their genetic makeup to how they spread among human populations in India, Africa, and other parts of the world.

The institute was established in 2011 to find new diagnostic tools, treatments and vaccines for the world's "big three killers" (HIV, TB and malaria) as well as neglected but often deadly diseases, such as sleeping sickness, dengue fever and leishmaniasis, for which new treatments are urgently needed. It is also conducting research on hospital-acquired infections, a deadly and growing problem around the world.

The work of the institute has outgrown existing laboratory space. A dedicated facility is being planned that will bring together 200 researchers from both parent institutions under one roof.



Polly Roy
MSc PhD FMedSci

Professor Polly Roy has unlocked the secrets of bluetongue (pictured), a virus which devastates sheep and cattle around the world. This includes India, where the southern states are particularly badly hit.

Her discoveries have also laid the foundation for new vaccines against serious human diseases, including influenza, human papilloma virus and SARS. She recently pioneered a technique which may one day lead to safe vaccines against viruses ranging from rotavirus to HIV.

In 2012, Indian Prime Minister Manmohan Singh awarded the General President's Gold Medal, one of India's most prestigious academic prizes, to Professor Roy for her contributions to science.

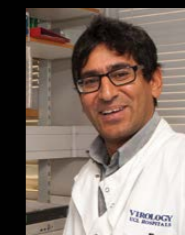


We expect the institute to be a world leader in infectious disease and pathogen research at every level, from the molecule to clinical interventions to policy affecting entire nations. The work conducted there will ultimately save countless lives and lead to a healthier population around the globe.



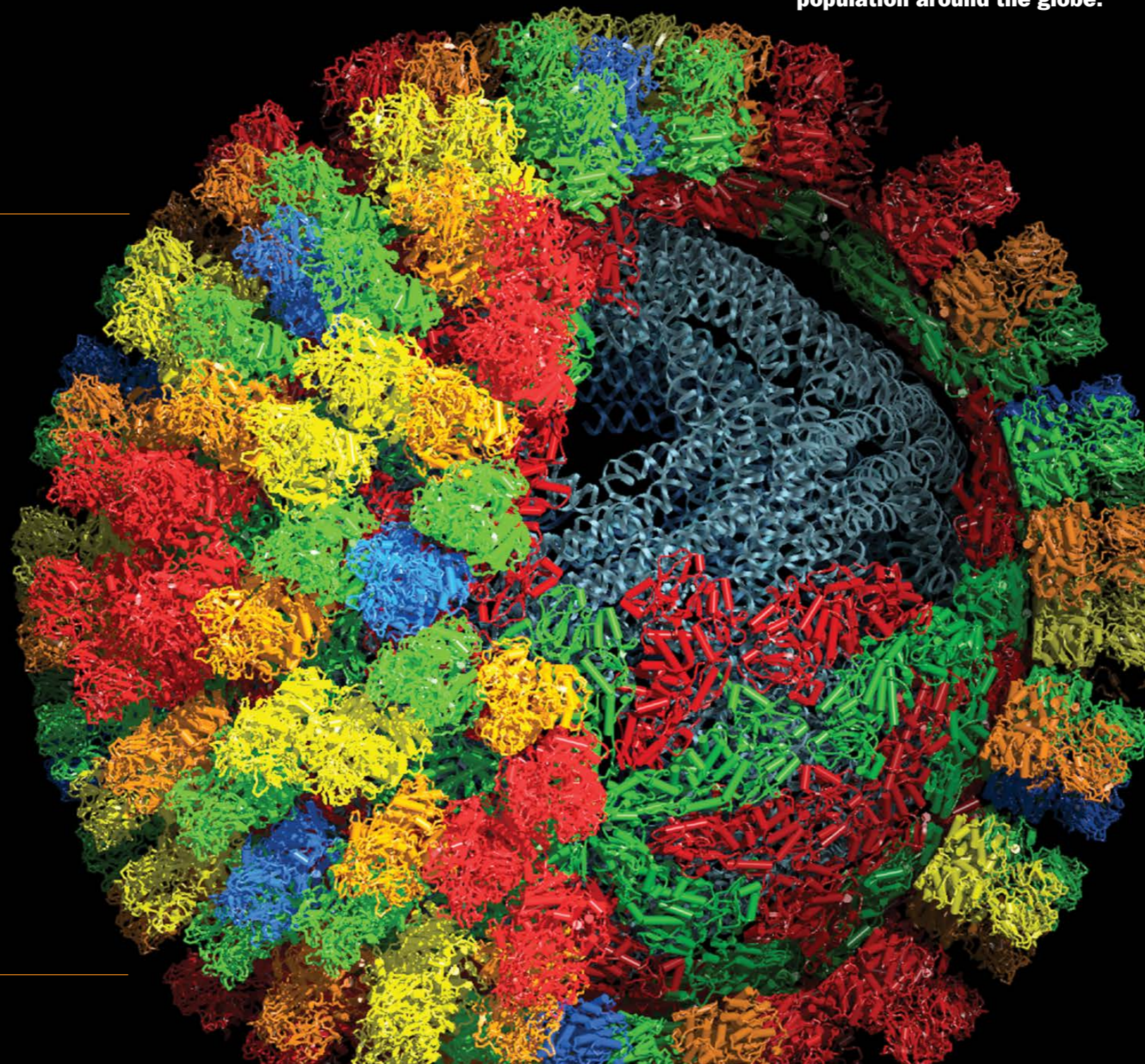
Institute Joint Director Simon Croft, BSc PGCE PhD, is Professor of Parasitology and head of the Faculty of Infectious and Tropical Diseases at the London School of Hygiene & Tropical Medicine.

He developed his expertise in antimicrobial chemotherapy while working with the Wellcome Research Laboratories, Beckenham, UK in the 1980s. Following his return to academia, Professor Croft focused his research on the identification and evaluation of novel drugs and formulations for the treatment of leishmaniasis, malaria, human African trypanosomiasis (sleeping sickness) and American trypanosomiasis (Chagas disease). From 2004 to 2007 he was the first research and development director of the Drugs for Neglected Diseases Initiative in Geneva, Switzerland. His current research interests include drug-immune response interactions and pharmacokinetic/pharmacodynamic relationships.



Institute Joint director Deenan Pillay, BSc, PhD, MBBS, is Professor of Virology at University College London, and Head of the Department of Infection.

He is also a Consultant Medical Virologist at University College Hospital. He is past Director of the UCLH/UCL Biomedical Research Centre, and of the national Health Protection Agency HIV and Antiviral Reference Laboratory. His major research interests are in HIV transmission and biology, particularly the emergence of HIV drug resistance. He is Head of one of only 5 WHO Specialist Laboratories in HIV Drug Resistance and is a leading adviser to the WHO HIV Treatment Optimisation Guidelines on drug resistance.



Putting health on the map: project and partnership highlights

1 IDEAS for maternal and newborn health

Working with local partners Better Birth, Manthan, Sure Start, Sambodhi Research & Communications and PHFI, **Informed Decisions for Actions (IDEAS)** is funded by the Bill & Melinda Gates Foundation to improve the health and survival of mothers and babies in Uttar Pradesh, Ethiopia and Nigeria. IDEAS uses measurement, learning and evaluation to discover what works, why and how in maternal and newborn health programmes, generating evidence to inform policy and practice.



4 Task sharing for mental health



School researchers led by Vikram Patel, working with Sangath and other partners in Goa, have found that lay health workers, with appropriate training and supervision, can effectively treat anxiety and depression in primary care settings. They are now extending this model to other disorders, such as schizophrenia, autism and alcohol use disorders.

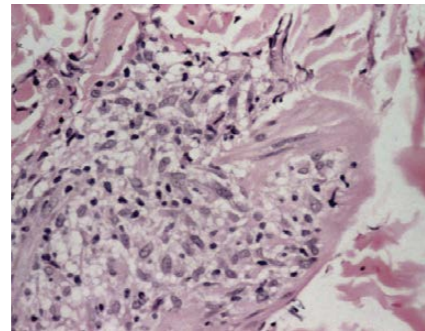
2 Tackling chronic disease

Coordinated from New Delhi by Shah Ebrahim, the **South Asia Network for Chronic Disease** provides laboratories, databases, training and other resources for researchers working to reduce the burden of chronic diseases throughout the region (see page 8 for details of projects and partners).

Researchers were recently awarded a large Wellcome Affordable Technology for India grant to develop an innovative low-cost mobile phone application to manage diabetes, hypertension, depression and harmful alcohol use.



3 Research to improve treatment of leprosy

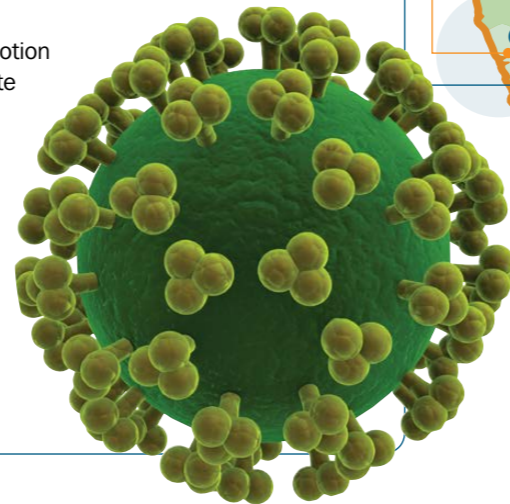


Diana Lockwood has worked for over 20 years in partnership with Lepira India, the Bombay Leprosy project and the Leprosy Mission, to research and improve the treatment of leprosy nerve damage and reactions. The team is currently studying factors and alleviation of neuropathic pain.

5 Effective HIV/AIDS prevention and treatment



School researchers are working with partners Karnataka Health Promotion Trust and St. John's Research Institute to monitor and evaluate the impact and cost-effectiveness of the Avahan India AIDS initiative, launched in 2003 by the Bill & Melinda Gates Foundation. School researchers are also working closely with the National AIDS Research Institute in Pune to find the most effective treatment for people with HIV in resource-poor areas of India, part of the international Evidence for Action on HIV Treatment and Care Systems collaboration.



6 INDEYE links diet, age and cataracts



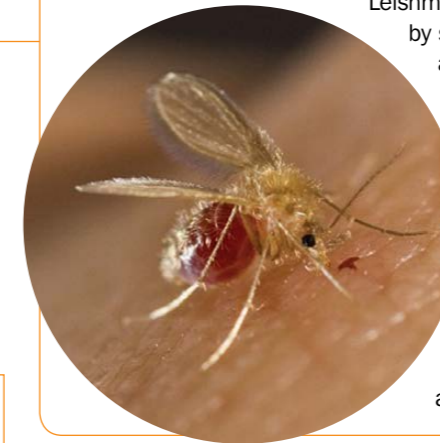
India accounts for around 20% of the global burden of blindness, with cataracts being the principal cause. School researchers have been working with Aravind Eye Care, Tamil Nadu and the All-India Institute of Medical Sciences, New Delhi on the **India age-related eye disease study (INDEYE)**, a major collaborative study funded by the Wellcome Trust, which shows how diet, especially vitamin C deficiency, and smoking are linked to age-related cataract formation. This ongoing work suggests how improving diet and cooking practices in rural areas may effectively prevent blindness.

8 Yoga and health



School researchers have found that yoga effectively reduces anxiety and depression in patients, and are now working with partners including the Centre for Chronic Disease Control in Delhi, on clinical trials to evaluate the effects of yoga on cardiovascular health in India and the UK.

10 Towards a DNA vaccine for leishmaniasis



Leishmaniasis is caused by a parasite transmitted by sandflies. It is endemic in India, which accounts for around 80% of the world's fatal cases. Simon Croft and colleagues at the School have been studying the *Leishmania* parasite for over 30 years. They are currently working with the Indian Council of Medical Research at the Rajendra Memorial Research Institute, Patna and the Indian Institute of Chemical Biology in Kolkata on the **LeishDNAVAX** project, funded by the European Community to develop an effective DNA vaccine.

7 Improving infant nutrition & health

Providing food supplements to undernourished pregnant women and young children may reduce the risk of cardiovascular disease in later life. Sanjay Kinra and Shah Ebrahim are collaborating with the National Institute of Nutrition on the **Andhra Pradesh Children and Parents Study**. Working in 29 villages, the study is revealing genetic and environmental factors related to chronic diseases. Building on this success, researchers hope to expand the trials to 30,000 people.



11 Focus on saving sight



Patients' sight can be saved by early diagnosis and treatment, and School researchers are working with partners including the LV Prasad Eye Institute and the Child Sight Foundation to develop clinical systems that enable doctors with limited resources to diagnose and treat a range of infections. The collaborative **South Asia Centre for Vision and Disability Research in Hyderabad**, led by GVS Murthy, is now a focus for the School's work in eye health across the region.

9 Health systems responding to change



School researchers Lucy Gilson and Kara Hanson are working with the Indian Institute of Technology in Chennai on the Department for International Development funded **Resilient and Responsive Health Systems (RESYST)** research programme evaluating health policy and systems, human resources and health care financing.

12 How sanitation reduces diarrhoea and worm infections

School researchers Thomas Clasen and Sophie Boisson are working with WaterAid India, the Xavier Institute of Management in Bhubaneswar, the Asian Institute of Public Health and Kalinga Institute of Industrial Technology on a cluster randomised trial among 100 villages in Orissa, funded by the the Bill & Melinda Gates Foundation, 3ie and the SHARE programme, to assess the impact of rural sanitation on diarrhoea and infection levels of parasitic roundworm and hookworm.



Malaria in pregnancy

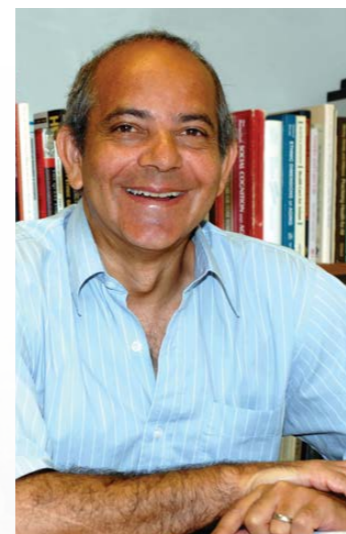
Malaria affects an estimated 1.6 million people in India, and pregnant women are particularly vulnerable.

Daniel Chandramohan, Jayne Webster, Irene Kuepfer and Sir Brian Greenwood from the School are working with Indian colleagues Neena Valecha, Anupkumar Anvikar and Neelima Mishra from the [National Institute for Malaria Research](#) based in Delhi, leading a major trial of effective and safe interventions to prevent malaria in pregnancy, funded by the Bill & Melinda Gates Foundation. The study started in April 2012 and over 8,000 women are taking part.



Anopheles stephensi (above) is the main vector of malaria in India. Ronald Ross made his Nobel Prize winning discovery that malaria is transmitted by mosquitoes while working at a hospital in Kolkata, and the Ross Institute subsequently became part of the London School of Hygiene & Tropical Medicine.

Non-communicable diseases: the emerging epidemic



Diseases such as cancers, diabetes, cardiovascular disease and mental illness are reaching epidemic levels worldwide, and have become a major cause of death across India.

In 2012, the School established the **Centre for Global Non-Communicable Diseases** as a multi-disciplinary collaborative network. In India, the centre builds on the work of Shah Ebrahim (pictured left), Sanjay Kinra and colleagues over many years with a range of partners, including the Public Health Foundation of India, Centre for Chronic Disease Control, and the South Asia Network for Chronic Disease. Supported by a Wellcome Trust Strategic award for research and capacity building, this has led to a new integrated system for the prevention and care of chronic diseases. The School is also active in health services research and the provision of universal access to care.

Migration, obesity and diabetes

What are the factors behind India's growing obesity and diabetes epidemic? The Indian Migration Study compares the health of migrant urban factory workers with their siblings in rural areas, revealing how migrant workers are at risk, and revealing patterns of diabetes and other lifestyle-related diseases.

Our partners include the All India Institute of Medical Sciences, King George's Medical College and Institute of Clinical Epidemiology, Lucknow, Government Medical College, Nagpur, Krishna Institute of Medical Sciences, Hyderabad, Dr BR Ambedkar Medical College, Bangalore, the Centre for Chronic Disease Control, New Delhi and the Public Health Foundation of India.



New approaches to mental health

Mental disorders, ranging from alcoholism through depression to dementia, are rapidly increasing globally, yet receive less than 1% of health funding. In India, suicide is now one of the main causes of death among young men and women.

Vikram Patel, Professor of International Mental Health and Wellcome Trust Senior Research Fellow, is a founder of **Sangath**, a pioneering health NGO in Goa. He is leading research, capacity development and policy on these critical issues, and helping to develop the government of India's District Mental Health Programme and Mental Health Policy. He also leads the Public Health Foundation of India's Centre for Mental Health.

He works on a wide range of partnership projects aimed at improving mental health care in the region including the Wellcome Trust funded PREMIUM programme, the National Institute for Mental Health funded South Asian hub for advocacy, research and education on mental health (SHARE), and the UK funded Programme for Improving Mental Health Care (PRIME) in five countries in Africa and South Asia.



Support our work in India

The London School of Hygiene & Tropical Medicine's work with numerous partners in India is only possible thanks to the generous support of funders who share our commitment to improving health in this fast-growing country. These include the Wellcome Trust, the Bill & Melinda Gates Foundation, the UK Department for International Development, and the US National Institutes of Health, all of which have been instrumental in launching urgent projects.

But these projects need additional funding to ensure research discoveries are put to practical use and fledgling programmes grow and become self-sustaining.

Gifts from individuals and institutions make all the difference in making sure good ideas become good policy and practice. We hope you will join us in ensuring a healthy future for India.

For more information about supporting our work, please contact:

William Friar
Head of Development
London School of Hygiene & Tropical Medicine
Keppel Street,
London WC1E 7HT

Tel. +44 (0)20 7927 2630
william.friar@lshtm.ac.uk



Group activities help young people build nurturing relationships

Sangath is a non-governmental non-profit organisation based in Goa, which focuses on child development, adolescent and youth health, and mental health. Co-founded by Vikram Patel, Professor of International Mental Health at the London School of Hygiene & Tropical Medicine, Sangath is one of many partners the School works with across India.