Improving health worldwide: INDIA

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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.
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.

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.

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.

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 UCL/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 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, Maruthi, Surestart, Hartmut Research & Communications, and FHT, Wharfedale Benefits the Alliance (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 focuses measurement, learning and evaluation to discover what works, why and how.

2. Tackling chronic disease
   Cross-functional teams, led by Dr Shemesh, the South Asia Network for Chronic Disease, provide laboratories, databases, training and other resources for researchers working to reduce the burden of chronic diseases throughout the region (see pages 8 for examples of groups and partners). Researchers were recently awarded a large Welcome Affordable Technologies 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 Lidstone has worked for over 20 years in partnership with Leprosy India, the Bombay Leprosy project and the Leprosy Mission. She has researched and improved the diagnosis, treatment and management of damage and reactions. The team is currently studying factors and determinants of neuropathic pain.

4. Task sharing for mental health
   School researchers led by Ebrahim Durrani for Task Sharing for Mental Health, are also working closely with the National AIDS Research Institute, Patna and the Indian Institute of Technology, New Delhi on the Department for International Development funded RESYST (Resilient and Responsive Health Systems) project.

5. Effective HIV/AIDS prevention and treatment
   School researchers are working with partners Kamalpuri Health Promotion Society, Goa and the J. N. Medical Research Institute to monitor and evaluate the impact and cost-effectiveness of the Indian AIDS Initiatives, launched in 2004 by the Bill & Melinda Gates Foundation. School researchers are also working closely with the National AIDS Research Institute 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. Improving infant nutrition & health
   Providing food supplements to undernourished pregnant women can reduce the risk of cardiovascular disease in later life. School researchers Amal Shafi and Sathiyas Jeyaseelan are collaborating with the National Institute of Nutrition on the Andhra Pradesh Children and Parents Study. Working in 29 villages, the study is measuring genetic and environmental factors that may influence development of heart disease. Building on the success, researchers hope to expand the trials to 30,000 people.

7. Yoga and health
   School researchers have found that regular yoga effectively reduces anxiety and depression in patients, and are now working with partners including the Yoga Wellness Trust, which shows how diet, especially in individuals with cardiovascular disease, and smoking are linked to age-related cardiac function. This impact is significant how improving diet and cooking practices in rural areas may effectively prevent diabetes.

8. 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 total cases. Simon Croft and colleagues at the School have been studying the Leishmanin parasite for over 30 years. They are currently working with the Indian Council of Medical Research at the BJ Medical Research Institute, Pune and the Indian Institute of Tropical Diseases, Kolkata, Coordinated from New Delhi by Shah Ebrahim, the School researcher responsible for the India AIDS initiative, launched in 1995, a major initiative of the Wellcome Trust, which has also funded the LeishDNaVaX project, funded by the European Community to develop an effective DNA vaccine.

9. Health systems responding to change
   School researchers Lucy Lawson and Rana Horrion are working with the Indian Institute of Technology in Chennai on the Department for International Development funded Resilient and Responsive Health Systems (RESYST) research. School researchers are working with partners and systems, human resources and health care financing.

10. How sanitation reduces diarrhoea and worm infections
    School researchers Thomas Clasen and Sophie Bajwa are working with workers in India, the Filer Institute and the Indian Institute of Public Health in Hyderabad in the Asian Institute of Public Health and Kaling Institute of Industrial Technology on a student randomised controlled trial among 150 villages in Orissa, funded by the Bill & Melinda Gates Foundation, 3ie and the PHFI. The trial among 100 villages in Orissa, funded by the Bill & Melinda Gates Foundation, 3ie and the PHFI, aims to assess the impact of rural sanitation on diarrhoea and infection levels of parasitic infections, and handwashing.

11. Focus on saving sight
    Patients’ sight can be saved by early diagnosis and treatment, and School researchers are collaborating with partners the Indian Institute of Ophthalmology in Patna and the Eye Institute and School researchers are working with partners the South Asia Centre for Vision and Ophthalmic Research in Hyderabad, led by SVD Murti, is also focused on the School’s work in eye health across the region.
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.

Malaria in pregnancy

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.

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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:

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