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HYGIENE
& TROPICAL
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Improving health worldwide

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Improving health worldwide: Latin America

Forewords from our partners



“In 2012, we signed a memorandum of understanding to build upon long-standing links between our institutions. The partnership has given a great boost to cooperation in various pioneering programmes, promoting bilateral student exchange and fostering high impact research collaboration.”

Professor Aluisio Segurado
University of São Paulo, Brazil



“The re-emergence of Chagas disease in the challenging environment of the Amazon region, encompassing several countries, has made the study of its causative agent *Trypanosoma cruzi* particularly important. Our collaboration with the London School of Hygiene & Tropical Medicine has been vital to understanding the disease. Brazilian PhD students have received training in the latest technology and have been integrated into the international scientific community, and we have successfully established in Rio de Janeiro a cryobank containing 700 isolates of *T. cruzi* from several biomes and habitats.”

Professor Ana Maria Jansen
Head, Laboratório de Biologia de Tripanosomatídeos, Instituto Oswaldo Cruz, Brazil



“After my PhD training at the School in the early 1980s, I have continued to collaborate closely with colleagues there. With Professor Patrick Vaughan, we launched the 1982 Pelotas Birth Cohort Study, which has now been running for over 30 years and has contributed to the understanding of the developmental determinants of health and disease in a middle-income setting. With Professor Peter Smith, we carried out case control studies in the 1980s that first established the importance of exclusive breastfeeding in preventing infant mortality and influenced global policy in this area. I have retained strong links with the School over time as an Honorary Professor, and Heath Clark Lecturer. I currently work with Professor Betty Kirkwood on child health research as part of the Countdown to 2015 initiative.”

Professor Cesar Victora
Federal University of Pelotas, Brazil



“In Paraguay, we have had an invaluable partnership with the London School of Hygiene & Tropical Medicine over the past two decades, working on both Chagas disease and leishmaniasis. We have successfully integrated the School’s postgraduate students into our research programme in the Chaco region, as well as training Paraguayan professionals through internships and doctoral programmes in London. This relationship has helped to improve the scientific quality of our projects and publications, and generate new knowledge, which we are currently applying to combat both diseases.”

Dr Antonieta Rojas de Arias
Centro para el Desarrollo de la Investigación Científica, Paraguay



“Universal and equitable health care has been an important objective of Brazil’s Unified Health System. This principle, embedded in policy, is driving the development of health and epidemiology research and training programmes all over the country. Our long-standing cooperation with the London School of Hygiene & Tropical Medicine has borne fruit in many collaborative research and training projects, and with the exchange of students and researchers. We are now working together to recruit a ‘virtual cohort’ of 80 million Brazilian people to study the impact of different social programmes on health and other outcomes.”

Professor Mauricio Barreto
Instituto de Saude Coletiva at the Federal University of Bahia, Brazil

Introduction: progress and challenges

Latin America has been making great advances in research and public health in recent years. Many countries in the region now have health systems which are free at the point of care, despite variations in quality and equity in access, between and within countries. Governments in the region are leading the world both in terms of constitutional commitment to health, and interventions to provide equitable access to health care and address structural drivers of diseases.

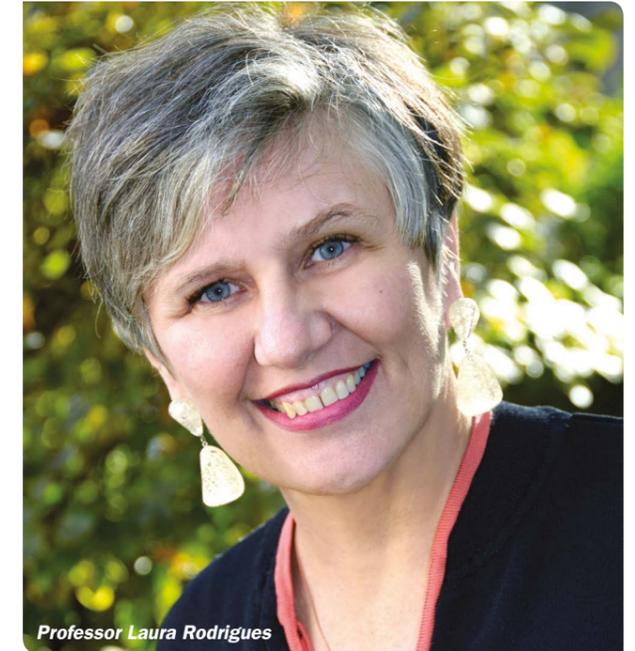
While there has been marked improvement in health outcomes, the region still faces challenges. The burden of chronic conditions such as cardio-vascular disease, obesity, diabetes and cancer, as well as mental health issues, continues to increase. At the same time, infectious diseases including AIDS, dengue and tuberculosis, and in rural and tropical areas, malaria, leishmaniasis and Chagas disease, remain a challenge.

There is a strong and growing research tradition across Latin America. The national share of publications in peer-reviewed journals is increasing, notably from Brazil and Argentina. The School has been working in partnership with institutions across the region for several decades, and these collaborations are growing stronger. There are now over 570 London School of Hygiene & Tropical Medicine alumni registered in 30 Latin American countries, the largest chapters of which include 165 in Brazil and 80 in Mexico. In Brazil, the government-funded *Science without Borders* initiative has fostered flourishing academic partnerships at all levels.

Today, there are many active joint research projects in a wide range of fields, and an active Latin American network in the School, with over 50 staff and students involved. We have highlighted a selection of this work in this report. I hope you will find it informative, and be inspired to join us in our common purpose, conducting rigorous research in order to improve health in Latin America – and worldwide!

Laura Rodrigues

Professor of Infectious Disease Epidemiology and Head of the School’s Latin America collaboration initiative. Visit the School’s Latin America and Caribbean network <http://lacnetwork.lshtm.ac.uk/>



Professor Laura Rodrigues

Contents:

Photographs courtesy of Rebecca Kanter, Research Fellow and coordinator of the School’s Latin America and Caribbean network
Cover photograph of the waterfront of Recife, Brazil, by André Seale, Alamy

Non-communicable diseases: environmental influences

Non-communicable diseases, including cardiovascular disease, diabetes, cancers, chronic respiratory diseases and neurological diseases, collectively represent the biggest cause of death and disability globally. In Latin America the School is working with partners to understand the environmental factors associated with these diseases, and is evaluating a range of strategies and interventions to control them.

Urbanisation, migration and health

Urbanisation and rural-to-urban migration are thought to be harmful as individuals adopt unhealthy lifestyles and behaviours. But relatively little is known about the magnitude of the effect of migration on cardiovascular risk factors such as obesity, hypertension and diabetes.

Jaime Miranda, Liam Smeeth and colleagues are currently working on two projects: the PERU MIGRANT study looking into the effect of rural-to-urban migration on cardiovascular risk factors, and the CRONICAS cohort study to examine geographical variations in the progression of non-communicable diseases in Peru. These studies are long-term collaborations between the School, the CRONICAS Centre of Excellence at the Universidad Peruana



Cayetano Heredia in Lima and the Johns Hopkins Bloomberg School of Public Health, funded by the Wellcome Trust, the US National Institutes of Health, and Peruvian sources. Initial findings reveal that the effect of urbanisation

on cardiovascular risk factors is much more complex than previously assumed, varying markedly between settings and stages of the migratory process.

How healthy are our cities?



Urban environments, and the way they are governed, have an impact on the health-related behaviours of their populations. Cities also have a demand for resources beyond current limits of sustainability. However, there is little empirical evidence about the degree to which the characteristics of cities are associated with variations in health-related exposures, behaviours and outcomes. Paul Wilkinson and Andy Haines have established the Sustainable Healthy Urban Environments project, funded by

the Wellcome Trust, which will create an open-access research platform of data from a sample of cities around the world, including Latin America. This project, whose collaborators include Mauricio Barreto from the Federal University of Bahia, Brazil, will explore the inter-relationship between characteristics of cities, their use of energy and other resources, and key health indicators. It will also examine the potential impact on health of more sustainable options for transport and infrastructure.

Occupational hazards and kidney failure

Over the past decade, there has been a marked increase in the prevalence of chronic kidney disease in Pacific Central America, including Nicaragua, El-Salvador, Costa Rica, Guatemala and Southern Mexico. This condition, termed Mesoamerican nephropathy, is reaching epidemic proportions such that up to 40% of men have the disease in some agricultural communities, although its cause remains unknown. Neil Pearce, Dorothea Nitsch and Liam Smeeth are working with Ben Caplin from UCL

and colleagues from Imperial College, Karolinska Institute and UNANA-Loeon, with funding from the Colt Foundation on a three-year project in Chinandega, Nicaragua, to identify the occupational and environmental factors associated with decline in kidney function. The findings will provide a basis for the introduction of regulatory frameworks to reduce risk, inform preventative public health measures, and provide some of the initial steps toward controlling this disease.



Non-communicable diseases: evaluation of control strategies

Early detection of breast cancer

Breast cancer is the most common cancer among women worldwide, and its incidence is rising across the region. In Brazil, Isabel dos Santos Silva is working with Estela Aquino from the Instituto de Saúde Coletiva, Universidade Federal da Bahia, Gulnar Azevedo e Silva from the Instituto de Medicina Social, Rio de Janeiro, and Maria Teresa Bustamante Teixeira from the Universidade Federal de Juiz de Fora, and their colleagues, to conduct the first national evaluation of the quality and impact of the Brazilian Unified National Health System's programme for early detection of breast cancer. Preliminary analysis of more than three million mammographic examinations performed in 2010 shows that the coverage of the screening programme is low at a national level, but with striking regional variations.

The researchers are now examining ethnic differences in mammographic density, which is one of the strongest known breast cancer risk factors. These data will contribute to the International Pooling Project of Mammographic Density, a large international study being co-ordinated jointly with the International Agency for Research on Cancer, and funded by the US National Cancer Institute.



Courtesy of Mammographic Density Project

Nutrition, obesity and physical activity

Obesity is a major factor in a range of chronic conditions and is increasing globally. Ricardo Uauy, Liz Allen, Alan Dangour and Diana Elbourne have been building a research evidence base of nutrition interventions in vulnerable populations in Latin America. From 2004 to 2008, with funding from the Wellcome Trust, they conducted a cluster randomised controlled trial of nutrition and/or physical activity among low and middle income older people in urban Santiago, Chile. With additional funding from the Chilean National Research Fund, they are now studying a cohort of children born in 2002 in a low-income suburb of Santiago, which will be followed up throughout adulthood to assess life-course approaches to obesity prevention.

Cancer survival

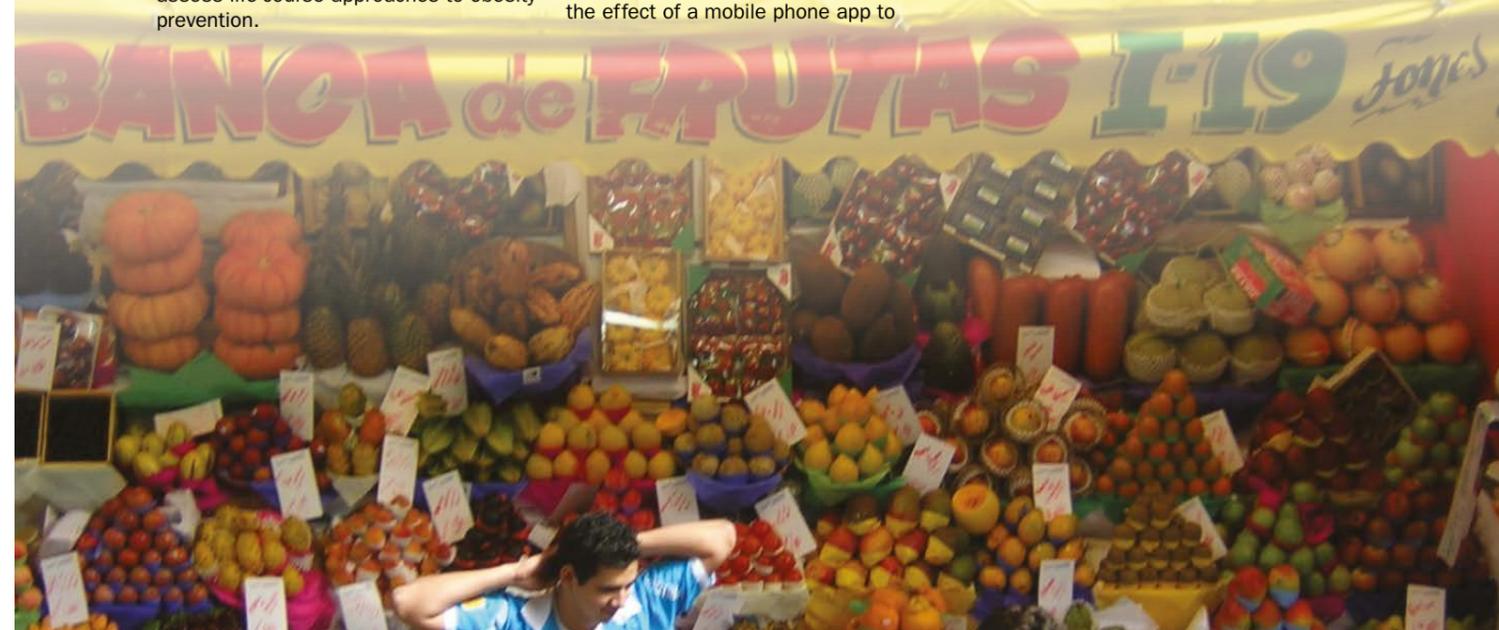
CONCORD is a programme of global surveillance of cancer survival, by Michel Coleman, Claudia Allemani and colleagues at the Cancer Survival Group at the School. CONCORD is designed to identify inequalities in diagnosis, treatment and outcome between and within populations. It currently includes data on 28 million cancer patients, provided by 279 cancer registries in 67 countries, including eight in Central and South America.

Mental health

Ricardo Araya has long been investigating mental health in many different Latin American countries. One of his projects, 'LATIN MH', is evaluating the effect of a mobile phone app to

help depressed people who also have hypertension and/or diabetes. This is a collaboration with the University of São Paulo in Brazil, Universidad Cayetano Heredia in Peru, and Northwestern University, with support from the US National Institutes of Health.

The team is also evaluating the effectiveness of a new treatment for depression in elderly people, a psychosocial intervention based on problem solving, which is delivered by trained and supervised nurse assistants working in primary care clinics. This four-year study is funded jointly by the Medical Research Council and Fundação de Amparo a Pesquisa do Estado de São Paulo. A third project is a trial evaluating the efficacy of a psychological management programme for depressed pregnant women in São Paulo.

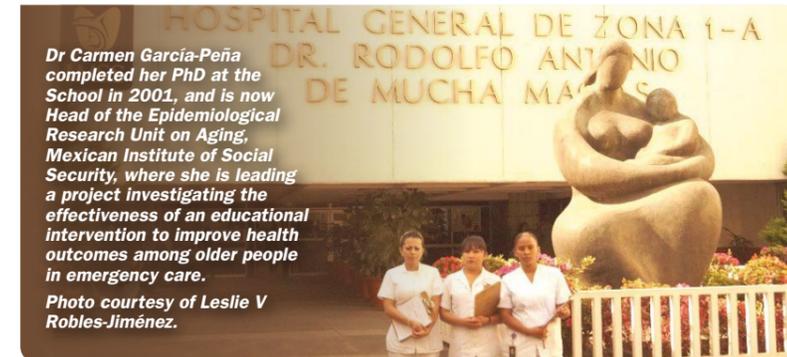


Health services, systems and policy research

Over the past two decades, health systems across Latin America have been transformed, with far more equitable coverage and investment in primary health care. However, variations remain, between public and private, urban and rural, with varied implementation of health policies at different levels. The School has been collaborating closely with partners, conducting pioneering research on health economics and health policy, and supporting reforms intended to achieve universal coverage by monitoring and evaluating processes and outcomes.

Primary and hospital care in Mexico

Following health care reform in 2003, there has been a significant increase in health care budgets in Mexico, but it is not clear if the resources are used efficiently to provide good quality services. John Cairns and David Lugo Palacios are analysing the effectiveness of primary care services and the efficiency of hospitals in the Mexican health care system. They are studying access, quality, and effectiveness of primary care services, and using econometric and mathematical programming methods to conduct an efficiency analysis of general hospitals. They are working with partners in the Mexican Ministry of Health, the University of York and Harvard University, funded by the Mexican National Council for Science and Technology.



Dr Carmen García-Peña completed her PhD at the School in 2001, and is now Head of the Epidemiological Research Unit on Aging, Mexican Institute of Social Security, where she is leading a project investigating the effectiveness of an educational intervention to improve health outcomes among older people in emergency care.

Photo courtesy of Leslie V Robles-Jiménez.

Maternal health services reducing infant mortality

Globally, nine million women, babies and children die every year from conditions that are easily preventable and treatable. Oona Campbell and Laura Rodrigues are working with Marcia Furquim de Almeida, Maria Novaes and colleagues from Universidade de São Paulo to research the impact of health services provision and access on birth outcomes. They are exploring the role of caesarean sections in the private and state health sectors in the reduction of the stillbirth rate and increase in the prematurity rate. They are now developing a project to investigate the structural, social, health services and biological determinants of foetal death.

A cohort of 80 million people

Mauricio Barreto of the Universidade Federal da Bahia and Fundação Oswaldo Cruz, and an Honorary Professor at the School, is working with colleagues including Laura Rodrigues and Liam Smeeth to develop an unprecedented project: a 'virtual' cohort based on 80 million individual records from the Brazilian Social Security Database (Cadastro Unico). Records will be linked with databases on health, work and education at a dedicated data centre with rigorous procedures and governance to assure confidentiality. As well as conducting original research, the team will produce anonymised datasets to be used by scientists and policy makers interested in investigating the impacts of social programmes on health, for better understanding and development of social policies.



Courtesy of Carmen García-Peña, Mexican Institute of Social Security.

Water and sanitation in Brazil

Funded as a visiting professor by the government of Brazil's *Science without Borders* programme, Sandy Cairncross is currently working on various water and sanitation research projects, based mainly at the Federal University of Minas Gerais. This joint research is expected to have a significant impact on the quality of life of millions of people from low-income areas who currently have limited access to clean water and sanitation. As well as helping Brazilian scientists publish in international journals, he is also planning studies of the health impact of water, especially harvesting rainwater in the semi-arid Northeast region of the country, researching issues such as privatisation in the Brazilian water industry, and contributing to Brazil's national sanitation plan.

Health in vulnerable communities

Disability and inclusion in Peru

Karl Blanchet and Hannah Kuper are leading a cross-sectional study in the north of Peru to evaluate the level of inclusion and exclusion of people with disabilities in national social protection programmes and policies. Funded by German Cooperation, the project started in 2014 in collaboration with the United Health Chronic Disease Initiative - part of the Universidad Peruana Cayetano Heredia in Lima, Peru. It is anticipated the results will help influence national policy on access for people with disabilities.



Photo courtesy Philippe Mayaud

Biodiversity, indigenous health and equity

The forests of South America and their peoples are currently under major threat from deforestation, bio-piracy, resource extraction and climate change. Carolyn Stephens, now at the National University of Tucumán, Argentina, is leading a consortium to create an Amazonia-Yungas Observatory of Biodiversity, Indigenous Health and Equity, developing evidence and advocacy in the region and influencing policy. The project spans six Latin American countries including Brazil, Bolivia, Peru and Argentina. It has many institutional partners and is funded by the UK Department for International Development and the Economic and Social Research Council's Ecosystems for Poverty Alleviation programme.

Addressing health inequalities

School researchers are working with partners in low and middle income countries in Africa and Latin America to improve the ability to study the effects of residential and work environments on human health. Jo Borghi and Paul Mee have been working with Alberto Pellegrini, Marco Akerman, Javier Rodríguez and Elis Borde at Fundação Oswaldo Cruz (Fiocruz), Brazil, on a four year collaborative programme funded by the European Commission to strengthen and link research capacities for health and its social determinants. The team is now working with Fiocruz to develop a researcher exchange programme on health financing in 2015.

Understanding pre-eclampsia in pregnancy

Pre-eclampsia affects around one in twenty pregnancies, and is associated with various adverse effects on mothers and babies, including life-threatening seizures.

Juan Pablo-Casas from the School is working with Norma Serrano at Fundación Cardiovascular de Colombia to establish one of the largest biobanks in the world in order to investigate the causes of this disorder, and help to develop new preventive strategies. The study includes 3600 cases and 4400 controls, including 2800 samples from infants. This study has access to genome-wide arrays, as well as data on a wide range of blood markers of interest for pre-eclampsia. This study has been funded by the Wellcome Trust and the European Union through the 7th framework programme to facilitate the establishment of a consortium of international studies in genetics of pre-eclampsia.

Women's health, domestic violence and child abuse

Charlotte Watts and Ligia Kiss are collaborating with Lilia Blima and others on two projects in Brazil on women's health and domestic violence. The WHO Multi-country Study on Women's Health and Domestic Violence Against Women project measured the prevalence of intimate partner violence and its association with women's physical, mental, sexual and reproductive health in the states of São Paulo and Pernambuco. A follow-up project will use datasets from 15 countries participating in the WHO multi-country study and national-level secondary data to estimate the extent of child sexual abuse and violation of children's human rights.



Health on the map: a cartographic index of selected projects in Latin America



Note: The lines and points on the map indicate in which countries (and within Brazil, which states) these projects are based. They are not meant to be geographically accurate within each country. Headings and numbers in blue circles indicate page references within this publication. The School is involved in other projects in the region, and this publication represents only a selection. For an updated map of global projects and partnerships visit <http://www.lshtm.ac.uk/aboutus/introducing/map>

For more information on our partnerships in Latin America, visit the School's Latin America and Caribbean Network <http://lacnetwork.lshtm.ac.uk/>

Interventions to tackle infectious diseases

With partners across the region, School researchers are working to understand and control infectious diseases which are a major burden, especially in low-income communities in the tropical zone. These include malaria, tuberculosis, leishmaniasis, Chagas disease and dengue, as well as HIV and other sexually-transmitted infections. This work is vital in helping countries plan their intervention strategies and target treatment to areas of greatest need.



Point-of-care tests for sexually transmitted diseases

David Mabey and Rosanna Peeling are working with Patty García, former Chief of the Peruvian National Institute of Health and Adele Benzaken, at the Alfredo da Mata Foundation in Manaus, Brazil to assess the feasibility, impact and, cost-effectiveness of rolling out point-of-care diagnostic tests for a range of sexually transmitted diseases in individuals from vulnerable populations in Lima, Peru and the Amazonas Region of Brazil. Funded by the Bill & Melinda Gates Foundation, the project has successfully established point-of-care tests for syphilis, greatly increasing the coverage of prenatal screening in both countries, and enabling remote indigenous populations to be screened, in many cases for the first time.

Cost effectiveness of point-of care testing for HIV

Brazil is expanding point-of-care rapid tests to detect HIV in an effort to increase early identification, improve outcomes and reduce transmission. Andreia Costa Santos is comparing cost effectiveness of this test under four different conditions in Recife, Brazil. These are: screening with a rapid test implemented in community health facilities only, in referral clinics only, in both health facilities and clinics, and no screening at all. Funded by the Brazilian Ministry of Health, the project is a collaboration with the Universidade de Pernambuco and Universidade Federal de Pernambuco.

Tuberculosis diagnosis on HIV infected patients

Tuberculosis is responsible for substantial mortality in persons living with HIV, but the diagnosis is not easy in this group. Laura Rodrigues is collaborating with Fatima Militao of Fiocruz Pernambuco on a randomised controlled trial of diagnosis of tuberculosis in a HIV treatment cohort, comparing different strategies. She is also working with Mauricio Barreto from Universidade Federal da Bahia to follow up a cluster randomised trial of the efficacy of BCG revaccination against tuberculosis and leprosy.



Courtesy of Schwartz Benzaken

TANDEM: interactions of tuberculosis and diabetes

David Moore and Cesar Ugarte-Gil are part of an international consortium led by Hazel Dockrell funded under the European Union Framework 7 programme to investigate the interaction of tuberculosis and diabetes. They are researching the mechanisms by which diabetes increases the risk of tuberculosis, and exploring ways in which this can be mitigated. They hope to determine whether tuberculosis may be responsible for impaired glucose tolerance. Their clinical sites include care health facilities in Lima, Peru, with laboratory work taking place at Universidad Peruana Cayetano Heredia. Ulla Griffiths and Yoko Laurence are investigating the costs of the interventions, and Jackie Cliff and Clare Eckold will carry out bioprofiling on some of the clinical samples.

Tuberculosis prevention and control

Poverty and social injustice are major factors in the spread of tuberculosis, and its control requires a combination of medical and social protection strategies. Delia Boccia was awarded a Wellcome Trust Fellowship to assess how conditional cash transfer interventions contribute to tuberculosis control in Brazil, which has one of the largest such programmes in the world. The study, a collaboration with the Brazilian tuberculosis control programme, is based on secondary data analysis, including a cohort study and mathematical modelling.

Delia Boccia and James Lewis are also providing epidemiological support for an evaluation of the impact of social interventions for the prevention and control of tuberculosis in a slum area of Lima, a partnership with Imperial College London, Johns Hopkins University, the World Bank and Prisma, a Peruvian non-governmental organisation. Preliminary results suggest that a combination of socioeconomic and psychosocial activities can successfully improve tuberculosis control measures.



Understanding the genomics and molecular epidemiology of Chagas disease

Chagas disease is caused by *Trypanosoma cruzi* and is one of the most widespread parasitic infections in Latin America. Treatment failures with benznidazole, the front line drug, are frequently observed. With colleagues in Medellín, Colombia and Rio de Janeiro, Brazil, John Kelly has shown that benznidazole-resistant *T. cruzi* often have mutations which inactivate a key enzyme, rendering the drug less effective against the parasite. The work has been funded by a number of Brazilian and Colombian agencies and the Wellcome Trust.

Michael Miles and colleagues are working on the molecular epidemiology, strain-specific diagnosis and control of Chagas disease. This involves collaborations in Brazil, Bolivia, Peru, Venezuela, Colombia, Ecuador, Argentina and Paraguay, funded primarily by the European Commission and the Wellcome Trust. This research has greatly contributed to understanding the complexity of *T. cruzi*, and to the development of new diagnostics, control strategies, and drug discovery.

Malaria in the Amazon region

Malaria is still a major cause of mortality and morbidity in tropical Latin America. Chris Drakeley and Nuno Sepulveda have been collaborating in a study of malaria parasite prevalence and infection rate with Professor Maristela Cunha, Universidade Federal do Pará, Belem, Brazil. They used serology data to derive robust measures of disease exposure and demonstrated that this approach can be applied in the Brazilian Amazon region where *Plasmodium vivax* is the predominant parasite species. This study demonstrated that serology data provides a reliable tool for monitoring the disease dynamics of both the main human malaria parasite species.

Dengue control

Neal Alexander is involved in several projects on dengue virus transmission, and its reduction via mosquito control. These include: 1) a trial in Cali, Colombia, to improve roadside storm drains, which are important breeding sites for *Aedes aegypti*, the mosquito which transmits dengue; 2) a study of the incidence of dengue virus infection, maternal immunity and antibody kinetics in children in the first year of life, in Recife, Brazil, 3) a project in Iquitos, Peru, to assess whether insecticide-treated curtains prevent transmission of dengue, and 4) a trial of water-related interventions in Colombian schools.



Photo courtesy Philippe Mayaud

Leprosy transmission studies

The prevalence of leprosy is decreasing worldwide, but clusters of cases still occur in some countries, including Brazil, showing leprosy transmission occurs at community level. Funded by the Brazilian government, Taane Clarke and Laura Rodrigues are working with Ligia Kerr from Universidade Federal do Ceara to investigate leprosy transmission using epidemiological and molecular methods.

Education and capacity strengthening

A number of funders have launched initiatives to support collaborations in research and teaching between UK and Latin American countries. These include the Newton Fund, The British Council Innovation Initiative, and Brazil's *Science without Borders* programme to facilitate mobility of scientists. These are enabling the School and its partners in Latin America to develop existing collaborations and create new joint projects.

The School was recently awarded four *Professores Visitantes Especiais* (Special Visiting Professors), which bring senior academics to Brazil for one to three months a year, linked to PhD and research fellowships. Through this programme, Laura Rodrigues is collaborating with Mauricio Barreto on asthma epidemiology, Sanjay Kinra on nutrition and obesity, with Universidade Federal da Bahia; Sandy Cairncross on health and sanitation, with Universidade Federal de Minas Gerais, and Richard Stabler on pathogen genetics and computational biology with Universidade de São Paulo. Many of these joint research projects include short courses as part of the collaboration, ranging from workshops on paper writing to analysis of genetic data.

In addition to many PhD students from Brazil, the School has welcomed eight

Master's students to do an intercalated MSc through the *Science without Borders* undergraduate exchange programme, and ten postdoctoral researchers working on subjects ranging from maternal mortality to the health of indigenous populations.

Some MSc student projects in Latin America

Lauren Browne studied faecal contamination from infant bottles in Guatemala. The project was funded by the SHARE Consortium for sanitation and hygiene and conducted in collaboration with Guatemala's CeSSIAM Center for Sensory Impairment, Aging & Metabolism.

Kesaobaka Modukanele studied factors associated with impaired aerobic

capacity among persons living with HIV in Recife, Brazil, based on a long standing HIV clinical cohort funded by the Brazilian government in Recife, Pernambuco, led by Ricardo Ximenes, to further our knowledge on the increasing burden of heart disease in persons living with HIV.

Historically, Brazil is the country which received the largest influx of slaves from Africa, resulting in a highly diverse population. The Brazilian government has funded EPIGEN, a genome-wide study of three cohorts in Brazil, led by Professor Maria Fernanda Lima-Costa of Fiocruz Minas Gerais. As part of this project, Genevieve Wills explored how education and income modify the association between self-defined colour and ethnicity, and the proportion of genetic markers of African ancestry.

Woven textile art from Santiago Atitlán, Guatemala, representing the traditional culture of the Tz'utujil Mayan indigenous people. Photo courtesy of Rebecca Kanter, Visiting Research Fellow with the Leverhulme Centre for Integrative Research on Agriculture and Health and Coordinator of the School's Latin American & Caribbean network.

PhD Student Projects – a selection

David Lugo, Mexico

Analysis of the effectiveness of primary care services and the efficiency of hospitals in the Mexican Health Care System



"In an effort to shed light on the measurement of the quality provided by the Mexican health care system, my PhD research analyses the *avoidable*

hospitalisations indicator, and discusses its validity for assessing quality and effectiveness of primary care services in Mexico. In addition, I use econometric methods and a mathematical model to estimate the efficiency of Mexican hospitals, with the aim of contributing to the design of public health policies in low and middle income countries."

Daiane B Machado, Brazil

What could decrease the high violence rates in Brazil?



"More than 90% of all deaths by violence in the world happen in low and middle-income countries. My PhD research aims to identify the socioeconomic problems linked

to violent mortality in Brazil, and to evaluate the impact of the Brazilian cash transfer programme on death rates. I hope my research will provide information to facilitate the government taking informed decisions to develop and implement prevention programmes."

Hector E. Castro, Colombia

Assessing the feasibility of conducting and using Health Technology Assessment



"Health Technology Assessment examines the consequences of the application of health technologies. Over the past decades, different

countries have established specialised

organisations aimed at better informing health care policies and clinical practice. Colombia established its Health Technology Assessment Institute in 2012, and I am currently the chief executive. The aim of my study is to assess the feasibility of conducting and using Health Technology Assessment to inform decision-making in Colombia in the case of severe haemophilia A."

Joilda Nery, Brazil

Conditional cash transfer and primary health care on tuberculosis and leprosy in Brazil



"I am a PhD student in Public Health on a split study programme with the School and the Collective Health Institute - UFBA in Salvador, Brazil.

My research explores the effects of the Brazilian conditional cash transfer programme "Bolsa Família" and primary health care programme "Saúde da Família" on two poverty related diseases: tuberculosis and leprosy. Both diseases impose a high burden on the health of the population and health services in Brazil. We hope to better understand the relationship between distributive social policies and health conditions of the population in low, middle and high income countries."

Pippa Grenfell, Peru

Violence against sex workers in Peru



"Sex workers face multiple health risks, not least violence, which has serious physical and emotional health consequences, including increasing

the risk of HIV. Supervised by Cicely Marston, I am leading "El Dia a Dia", a project investigating how socio-structural factors shape vulnerability to violence, and capacity to manage risk, among male, female and transgender sex workers in Peru. The project is funded by a fellowship from the Medical Research Council and conducted in collaboration with the Universidad Peruana Cayetano Heredia in Lima."

Alejandro Rodriguez, Ecuador

Effects of urbanisation on asthma prevalence: a cohort study



"This study explores the influence of urbanisation on asthma prevalence through the measurement of contextual, household and

individual variables in a birth cohort in a region of Ecuador in which the rural-urban transition is occurring rapidly. The study will evaluate how temporal changes in the home environment and lifestyles affect the occurrence of asthma."

MSc student profile

Otavio T. Ranzani, Brazil

Towards a better understanding of pulmonary tuberculosis outcomes in São Paulo State, Brazil: a feasible and practical clinical prediction model



"Tuberculosis is one of the most common infectious diseases globally. One of the main problems with this disease is that the treatment is long

and it demands daily care from the patients. Therefore, many patients give up on the treatment and this causes the relapse of the disease, and could lead to resistance to the drugs and its spreading. My project uses data from the Tuberculosis Programme in São Paulo State, which has the highest burden of tuberculosis in Brazil. Together with Professor Laura Rodrigues, we are identifying patients at high risk of poor outcomes, to inform the most appropriate treatment strategy for these patients."

Forging strong partnerships for the future

At the London School of Hygiene & Tropical Medicine, we have a firm foundation to build on, with strong alumni links, joint research projects and several professors from Latin America, including Ricardo Uauy, Ricardo Araya, Juan Pablo-Casas and Laura Rodrigues.

Over the past two years, we have conducted several academic exchanges, which were successful in identifying mutual research interests and new partnerships. This year the School signed memoranda of understanding with some of the most prestigious institutions in Brazil, including the University of São Paulo, Universidade Federal da Bahia, Fundação Oswaldo Cruz (Fiocruz), Universidade Federal de Pernambuco and Universidade de Pernambuco.

We also received a number of world famous scientists for sabbaticals, including Dirceu Greco, former director of the Department of sexually transmitted diseases, AIDS and viral hepatitis in Brazil, and Ricardo Ximenes from Universidade de Pernambuco.

In recent years, we have also received outstanding researchers from Latin America on the School's Heath Clark Lecturer programme. Heath Clark Lecturers work at the School for three months, sharing their knowledge and fostering collaboration. We were fortunate to have both Mauricio Barreto and Cesar Victora, both of whom are now active as Honorary Professors, forging productive links and joint projects.

We are delighted to welcome as our latest Heath Clark lecturer Professor Patricia J. García, the Dean of the School of Public Health at Cayetano Heredia University in Lima, Peru. Professor García (pictured below) is former Chief of the Peruvian National Institute of Health, president of the Latin American Association Against STIs, and a member of the Commission for the Education of Health Professionals of the New Century. She also serves on various World Health Organization advisory groups. We are looking forward to a sustained, exciting and creative expansion of joint research and teaching with Latin America.



Professor Patricia J. García,
Heath Clark Lecturer 2014-15

Support our work

We are working closely with partners in Latin America to address contemporary and future critical health challenges.

This is only possible thanks to the generous support of funders and philanthropic donors who share our commitment to improving health worldwide.

For more information on how you can join us in this vital work, please contact:

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Participants in a situational analysis
of sexual health planning workshop,
courtesy of Phillipe Mayaud