



Annual Report 2013

London School of Hygiene & Tropical Medicine
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Improving health worldwide

“

The urgent challenges we now face in health can only be met by intelligent, co-ordinated responses, informed by applied research that builds the evidence base for effective health practice focused on public need.”



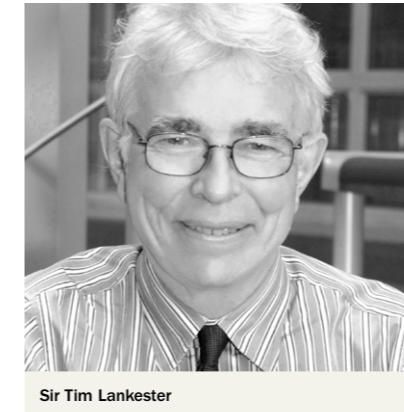
Professor Dame Sally Davies
Chief Medical Officer, the UK Government's principal medical adviser and Chief Scientific Adviser for the Department of Health

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Our continent is developing rapidly. We are making significant progress in controlling infectious diseases, and meeting old and new challenges by investing in our health, research and science infrastructure, with the support of funders and partners globally.”



Dr Tedros Ghebreyesus
Foreign Minister and former Minister of Health, Ethiopia; Alumnus and Honorary Fellow of the School



Sir Tim Lankester

Foreword

Although more of the world's seven billion people are living longer and healthier lives than ever, we face many urgent challenges. The inexorable tide of non-communicable diseases, the emergence of antibiotic-resistance, the threat of new pandemics, and the health impacts of conflict and climate change, are all 'wicked problems' that impose severe burdens on health services, systems and societies, locally and globally.

The School's mission is to help address these challenges, through our research, education and innovation. To achieve this, we work collaboratively with hundreds of partners all over the world, ranging from governments and international agencies to local clinics and community groups.

This report provides a brief overview of the School's recent work, and a glimpse of the future. It has been a year of healthy growth across all areas of activity, and many achievements by individuals and the School as a whole. For example, our postgraduate programmes – both London-based and distance learning – were commended by the UK's Quality Assurance Agency for Higher Education, and in October the School was named by the compilers of a global league table as the world's leading research-focused graduate school – which reflects the growing recognition our work is receiving.

I hope you will take a few minutes to read this review, and that you find it enjoyable and inspiring.

Sir Tim Lankester, Chair of Council

With the National Institute for Health Research, Policy Research Units, and other partnerships, we are developing a research infrastructure that taps into world-class academic resources, and the London School of Hygiene & Tropical Medicine is a key partner in these initiatives.

Through its collaborative work with the National Health Service, Public Health England, National Institute for Health and Care Excellence, local government and NGOs, the School is making many vital contributions to public health, from laboratory research in infectious diseases to advising on implementation of interventions, and health service and policy evaluations.

The London School of Hygiene & Tropical Medicine is a key partner in this work, and is helping national and local governments, universities and hospitals strengthen their research and capacity, and exchange knowledge and expertise.

I am honoured to be associated with this world-leading institution, and I know from personal experience how dedicated the School's staff, students and alumni are – conducting research and taking practical action that saves lives and improves health worldwide.

Our vision is to be a world-leading school of public and global health, working closely with partners in the UK and worldwide to address contemporary and future critical health challenges.

Our mission is to improve health and health equity in the UK and worldwide; working in partnership to achieve excellence in public and global health research, education and translation of knowledge into policy and practice.

World no. 1 research-focused graduate school
In 2013, the School was named the world's top research-focused graduate school in the Times Higher Education world rankings.



In 2009, the School became the first academic institution in the world to be awarded the Gates Award for Global Health by the Global Health Council

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- Maintaining the Momentum: Professor Plot and panellists at a seminar held at the School in June to launch the World Health Organization report on AIDS in Europe, co-authored by Tim Rhodes and colleagues
- The GOAL Trial is examining the effectiveness of the Generation Skillz programme for reducing risk behaviour among 15–18 year old boys and girls in Cape Town and Port Elizabeth
- Research at the School has generated over 2,200 items of media coverage in 2013, double that in the previous year
- The Olympics and regeneration in East London project is investigating the health legacy of the 2012 Games among local people
- PEEK in practice, working with Maasai communities in Kenya
- The bicentenary of John Snow, founder of modern epidemiology, celebrated at the School
- Manga-style comic created by Ian Roberts to demonstrate the benefits of tranexamic acid in emergency medicine
- Malaria intervention trials in Tororo, Uganda, courtesy Helen Allwood, Malaria Capacity Development Consortium
- 'SASA' is a five-year project to stop violence against women and reduce HIV risk in Uganda
- In March, despite snow, we hosted our largest Graduation Day ever
- The Keppel Street Building and gardens in Spring
- Peter Plot and HRH The Duke of Edinburgh, the School's Patron, at the launch of the Director's Circle at Buckingham Palace

Making an impact: now and for the long term

Peter Piot, Director

As a postgraduate and research institution we are not included in most university league tables. However, this year the School was named the world's 'leading research-focused graduate school' by Thomson Reuters and Times Higher Education. As well as achieving the best overall score, coming top of a table ahead of elite global institutions, we were ranked particularly highly for indicators including international outlook, research and citations.

Impact is long-term and notoriously hard to measure. This year, the new Research Excellence Framework has required us to evaluate and document the wider societal benefits of our work. Although the process has been time-consuming, it is a good discipline for academics to assess and communicate the many benefits of our work, as it is only by so doing that we can win wider public understanding and support, as well as sustained funding.

In October this year, I attended a centennial anniversary celebration for the UK Medical Research Council at the Royal Society, at which School researchers Austin Bradford Hill, Jerry Morris and Brian Greenwood were among distinguished MRC-supported scientists of the past 100 years. This highlighted how we have contributed to the excellence of British science, and thanks to the quality and enterprise of our staff, research at the School continues to flourish and grow.

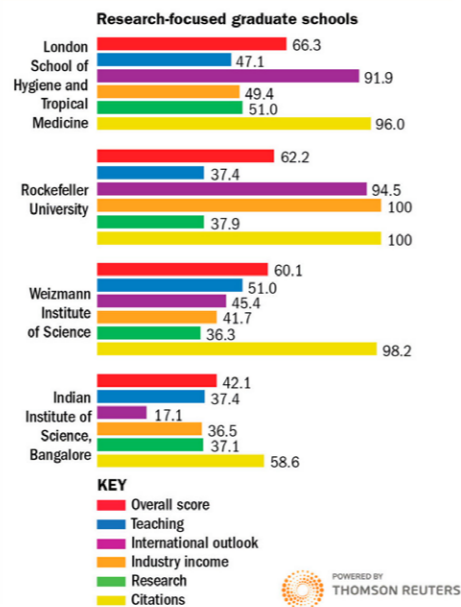


Professor Baron Peter Piot, Director

Income from research grants increased over 10% this year to £79 million, as set out in on page 23. Of this total, UK, EU and US government departments and agencies contributed nearly half of this total, with another 45% coming from charitable sources, including the Wellcome Trust and the Bill & Melinda Gates Foundation.

This year, we received an excellent report on the quality of our education programmes from the UK Quality Assurance Agency, and in the autumn achieved a significant increase in student enrolments, with numbers of London-based students 14% up on last year, reversing a dip in 2012.

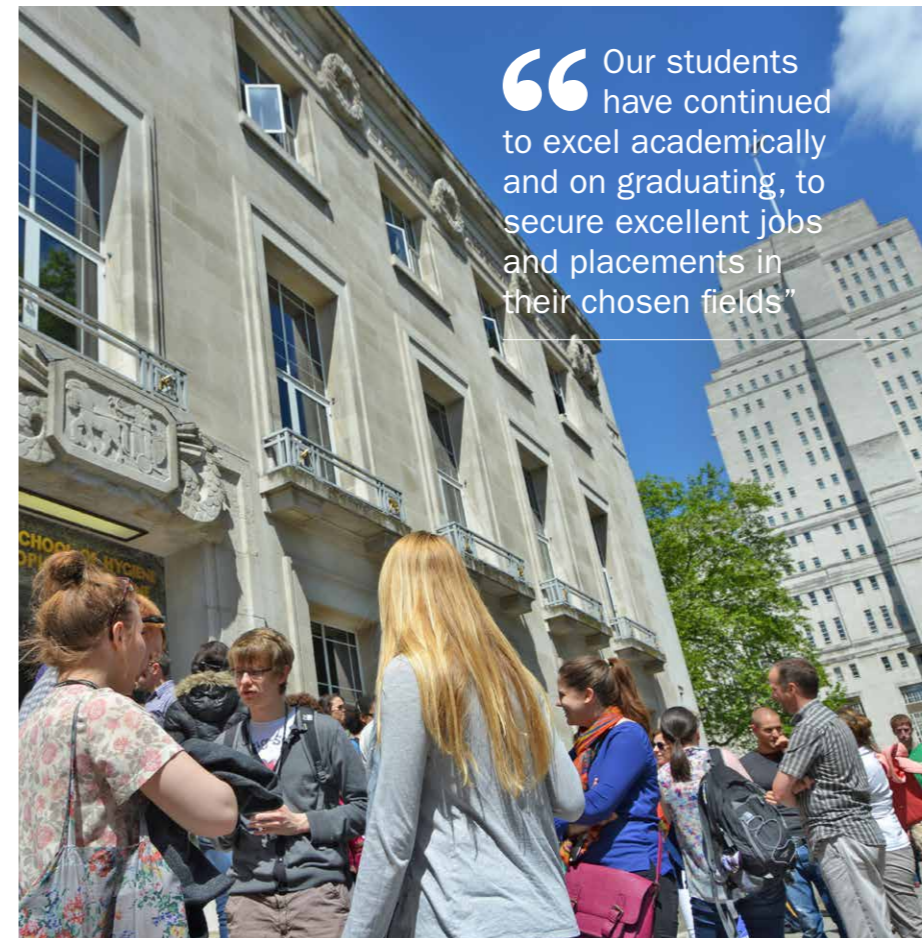
“This year, the School was named the world's leading research-focused graduate school by Thomson Reuters and Times Higher Education”



Maintaining the Momentum: Professor Piot and panellists at a seminar held at the School in June to launch the World Health Organization report on AIDS in Europe, co-authored by Tim Rhodes and colleagues

While our ability to attract funding and the best staff and students is vital, these outcomes cannot be ends in themselves. Our success is rightly measured by the outcomes of our research, teaching, knowledge transfer and capacity-building activities, and the positive impacts of these on society and people's lives.

Evidence of such outcomes is manifold: around two thousand papers written or co-authored by staff and research students over the year, with significant findings ranging from new discoveries in pathogen molecular biology, to vaccine development, water quality and child health, cancer survival, HIV and tuberculosis interactions, transport and health, health services reform, medical tourism and sexual attitudes. As well as being widely cited in high-impact journals, many of these findings have achieved global media coverage.



Our students have continued to excel academically and on graduating, to secure excellent jobs and placements in their chosen fields. We strengthened our many partnerships worldwide and established new links, joint appointments and courses, notably in China, South East Asia, India and throughout Africa.



Professor Piot taking part in BBC world service panel as part of the inaugural Africa Science Festival in Kampala

In London, we joined UCLPartners, contributing to the successful bid for a new Academic Health Sciences Centre, and continued to work with University College London on the development of the Bloomsbury Research Institute as a world-leading centre for infectious diseases. Our knowledge transfer and innovation activity resulted in the development of new diagnostic tools and the launch of our commercialisation vehicle, Chariot Innovations Limited.

In October, the Oxford Martin Commission for Future Generations, of which I am a member, launched its report entitled Now for the Long Term. This calls for governments and institutions to abandon short-termism, address deep persisting inequalities, and shift priorities towards longer-term challenges that will shape our futures – hopefully a commitment which will also be a main theme of the post-2015 agenda for sustainable development. Translating such long-term vision into daily practice is very challenging, but vital if we are to avert the deep and complex crises we now face.

As a society we underestimate the scale of challenges such as the impacts of climate and demographic change, migration and

Honours and awards 2013

- **Anne Mills** elected Fellow of the Royal Society.
- **Polly Roy** and **Brendan Wren** receive Wellcome Trust senior investigator awards, and **Alex Mold** wins junior investigator award.
- **Neil Pearce**, **Andrew Prentice** and **Anthony Scott** elected Fellows of the Academy of Medical Sciences.
- **Andy Hall** received a knighthood in the Queen's birthday honours' list.
- **Clare Gilbert** wins Pisart Vision Award in recognition of her work on prevention of childhood blindness.
- **Nick Black** awarded a Career Achievement Prize in recognition of his contribution to advancing the use of patient reported outcome measures and along with **Ben Goldacre**, named in the inaugural Clinical Leaders list by *Health Service Journal*.
- **Peter Piot** awarded the Hideyo Noguchi Africa Prize for Medical Research by Japan's Prime Minister Shinzo Abe (right).



globalisation, the threat of antibiotics and emerging epidemics, over-consumption and the tsunami of chronic diseases. All health systems are now struggling: they are facing new demographic, disease and technological challenges which leave them overburdened and riddled with structural inefficiencies and perverse incentives. We have to reform, innovate and work far more 'upstream', scaling up prevention and public health policy solutions.

Above all, we must resist the fatalistic attitude that 'nothing can be done' about the big challenges. We need evidence-informed optimism to persistently ask better questions and find better answers. This effort requires political science and economics as well as basic science, patient care and epidemiology, speaking truth to power, encouraging and enabling our leaders to think and act for the long term.

P. Piot
Professor Peter Piot

Improving health worldwide: sub-Saharan Africa

Thanks to painstaking medical research over the past few decades, millions of lives have been saved and health improved across Africa, but millions more people continue to suffer and die from preventable and treatable conditions: not only malaria, AIDS and tuberculosis, but undernutrition, diarrhoea, the complications of childbirth and, increasingly, hypertension, diabetes, cancer and cardiovascular diseases. We are also confronted by the emerging threats of new infections and pandemics. The School is engaged in collaborative research and teaching with many partners across the region. These links have been further enhanced by our participation in a growing number of international research consortia, which strengthen the capacity of African institutions to carry out world-class research.



Trachoma mapping and treatment

Blinding trachoma affects more than 21 million people globally, with up to 180 million at risk in the world's poorest countries. The Global Trachoma Mapping Project is a consortium of ministries of health, NGOs and academic partners worldwide, funded by UK Department for International Development. School researcher Anthony Solomon, chief scientist for the project, is training teams to use smart phones to collect data on water, sanitation and hygiene, and examining people for clinical evidence of trachoma in countries including Guinea Bissau, Cameroon and Nigeria. Researchers from the School's International Centre for Eye Health are also working with hospitals across Africa as part of the VISION 2020 Links Programme, a global initiative to eliminate avoidable blindness worldwide.

Protecting children through Seasonal Malaria Chemoprevention

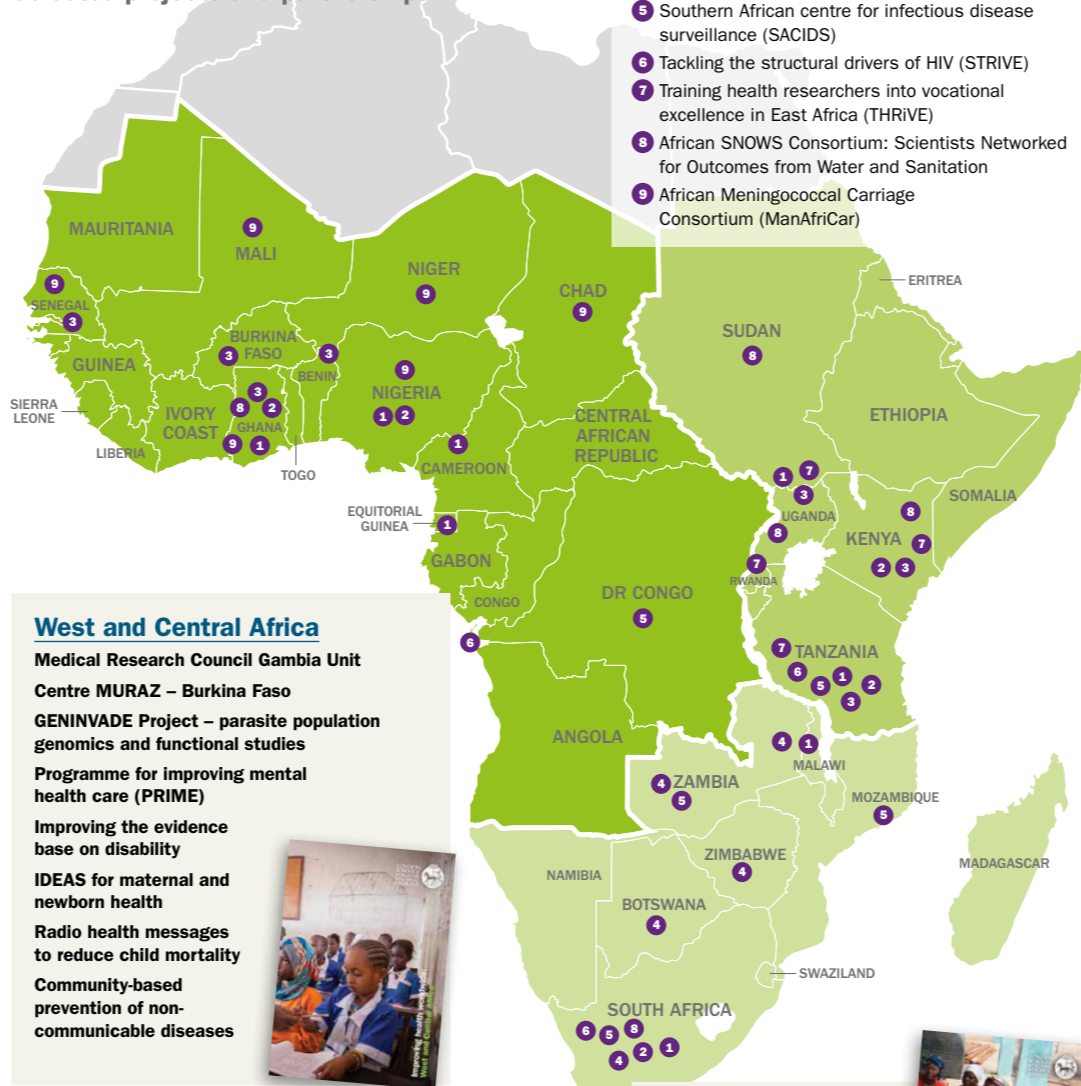
Work by School researchers and partners in Senegal, Mali, Burkina Faso, Gambia and Ghana over the past decade has led to the introduction of a new prevention strategy known as Seasonal Malaria Chemoprevention. Children without symptoms of malaria receive a dose of an anti-malarial drug combination once a month during the high malaria transmission season. In 2012/13, this was incorporated in World Health Organization guidelines, and the programme extended to Chad, Niger and Nigeria.

Breakthrough on meningococcal meningitis vaccine

Results published in September 2013 showed that vaccination of almost 2 million people in Chad led to a dramatic reduction in the incidence of all cases of meningitis by 94% and in carriage prevalence of the epidemic strain, serogroup A meningitis, by 98%, while an epidemic persisted in unvaccinated parts of the country. The African Meningococcal Carriage Consortium (MenAfriCar), led by Brian Greenwood and funded by the Wellcome Trust and Bill & Melinda Gates Foundation, is investigating the patterns of meningitis and trialling the introduction of the new MenAfriVac vaccine in Chad, Senegal, Mali, Ghana, Niger and Nigeria.



Selected projects and partnerships



Capacity strengthening consortia

- 1 Artemisinin Combination Therapy (ACT) Consortium
- 2 Consortium for health policy & systems analysis in Africa (CHEPSAA)
- 3 Malaria capacity development consortium (MCD)
- 4 South African consortia research for excellence (SACORE)
- 5 Southern African centre for infectious disease surveillance (SACIDS)
- 6 Tackling the structural drivers of HIV (STRIVE)
- 7 Training health researchers into vocational excellence in East Africa (THRIVE)
- 8 African SNOWS Consortium: Scientists Networked for Outcomes from Water and Sanitation
- 9 African Meningococcal Carriage Consortium (ManAfriCar)

West and Central Africa

- Medical Research Council Gambia Unit
- Centre MURAZ – Burkina Faso
- GENINVADE Project – parasite population genomics and functional studies
- Programme for improving mental health care (PRIME)
- Improving the evidence base on disability
- IDEAS for maternal and newborn health
- Radio health messages to reduce child mortality
- Community-based prevention of non-communicable diseases



Malawi Epidemiology and Intervention Research Unit

The Karonga Prevention Study was established in Malawi in 1979, and has since expanded to include tuberculosis, HIV, demography, and most recently, cardiovascular disease and diabetes, as the epidemic of non-communicable diseases spreads across Africa. Today, a uniquely detailed database links work over more than three decades on around 300,000 people. A new site recently opened in Lilongwe, and the combined programme has been brought together as the Malawi Epidemiology and Intervention Research Unit (MEIRU), with Professor Moffat Nyirenda appointed director in July 2013.

Southern Africa

- Youth-friendly health services – HIV prevention clinics
- Zambia AIDS related tuberculosis project (ZAMBART)
- Sport and HIV prevention
- Human papillomavirus in Africa research partnership (HARP)
- Zimbabwe study for enhancing testing and improving treatment of HIV in children (ZENITH)
- CONCORD Programme – surveillance of cancer survival
- Nutritional support for Africans starting antiretroviral therapy (NUSTART)
- VISION 2020 Links Programme – eye health



These pages show just a few of more than 50 projects and partnerships across Africa. For more details, please read our 2013 regional publications. These are available on our website, as well as a searchable map of our work in over 100 countries worldwide www.lshtm.ac.uk/aboutus/introducing/map

East Africa

- National Institute for Medical Research / Mwanza Intervention Trials Unit
- Human papillomavirus vaccine trials – sub-Saharan Africa
- Program for resistance, immunology, surveillance and monitoring (PRISM)
- Good School Toolkit to prevent violence against children
- Treating child sickle cell disease
- Improving newborn survival in southern Tanzania (INSIST)
- Treatment of HIV-positive patients with visceral leishmaniasis
- Ciclosporin in leprosy reactions clinical trial



This new test-and-treat approach encourages and supports the entire community to test for HIV, and offers immediate treatment with anti-HIV drugs to everyone who is HIV-positive. This enables HIV-positive individuals to be diagnosed at a much earlier stage, which should protect the health of HIV-infected patients at the same time as steeply reducing the number of new infections.

Safety of malaria drugs

Artemisinin-based combination therapy is the first line recommended treatment for malaria. Although it is highly effective, there are many issues around access, safety, targeting and drug quality. The ACT Consortium, with its secretariat based at the School, is a global research collaboration that addresses these issues through 25 studies in 10 countries.

ALPHA network: population-based HIV data

A vast amount of data is available on various aspects of health in Africa, but it can often be difficult to compare studies. The network for Analysis of Longitudinal Population-based HIV data in Africa (ALPHA) is working to improve the usefulness of data generated in community-based cohort studies on HIV in sub-Saharan Africa by combining data sets into a common format. The network is co-ordinated by Basia Zaba and Jim Todd at the School, advised by WHO, UNAIDS and partners in Kenya, Malawi, South Africa, Tanzania, Uganda and Zimbabwe. In 2013, they published results which found an estimated 24% of pregnancy-related deaths in sub-Saharan Africa are attributable to HIV, and that HIV positive pregnant and post-partum women are eight times more likely to die than their HIV negative counterparts.



The GOAL Trial is examining the effectiveness of the Generation Skillz programme for reducing risk behaviour among 15–18 year old boys and girls in Cape Town and Port Elizabeth

Improving health systems, services and policy

In recent years, School researchers have been conducting pioneering research on health economics and health policy change. The Consortium for Health Policy and Systems Analysis in Africa, led by Lucy Gilson, joint professor with the University of Cape Town, is a partnership of seven universities in Africa and four in Europe. Kara Hanson, Lucy Gilson and colleagues are also working in seven countries across Africa and Asia in the Resilient and Responsive Health Systems research programme to improve governance, human resources and financing.

Courtesy Teun Bousema

Courtesy Rodriguez Barry

Excellence and impact

Since 2012 we have held an annual School symposium to bring all staff together, including those based overseas. In 2013 the theme was 'Achieving impact'; we showcased good practice within the School and discussed how to address specific difficulties around achieving impact. One of the sessions, 'From innovation to implementation: the example of vaccines', featured speakers engaged in the whole pipeline of vaccine research, from antigen discovery and development of a novel approach, to the synthesis of glycoconjugate vaccines, through to evaluation of vaccine effectiveness, policy and advocacy.

Our impact is primarily on improved health outcomes achieved through research that has led to the development and evaluation of new interventions, and has influenced health policy at regional, national and global levels. In recent years, our research has led to changes in policy worldwide, for example in the control of HIV, TB and other opportunistic infections in southern Africa, to new malaria control strategies in countries in West Africa, and to changes in syphilis control strategies in Brazil, China, Peru, Tanzania, Uganda and Zambia.



Professor Anne Mills, Vice-Director

“Our impact is primarily on improved health outcomes achieved through research that has led to the development and evaluation of new interventions, and has influenced health policy at regional, national and global levels”

The public, including patients, benefit both directly from our research via better interventions, stronger health systems, and evidence-based information and indirectly through the influence of our research. In the UK, the users of our research, and those who benefit from it, include several government departments, local authorities, the Food Standards Agency, Public Health England, and the National Health Service, trusts and charities (see page 8).

Interdisciplinary collaboration is key to facilitating the translation of our research results into policy and practice. Our School Centres cut across disciplines, departments and faculties. For example the Malaria Centre fosters a close working relationship between parasitologists, geneticists, immunologists and population biologists, epidemiologists, entomologists, economists and social scientists, enabling us to maximise the impact of our research on malaria control and prevention.

Over the past five years, we have established several new interdisciplinary centres based on this successful model. School Centres are strongly multi-disciplinary, drawing on a diverse range of expertise across faculties to address global health challenges.

Evidence into policy case study: Txt2stop rolled out as national smoking cessation programme



Cari Free awarded Royal College of General Practitioners and Novartis Research Paper of the Year

Smokers are twice as likely to succeed in quitting when they receive encouraging text messages. The **txt2stop study**, a major randomised controlled trial undertaken by Dr Caroline Free at the School, examined the long-term effects of specially-designed mobile text messages on 5,800 volunteer participants. Published in *The Lancet*, the study was named Research Paper of the Year by the Royal College of General Practitioners and Novartis, and won the Medical Research Council and Bupa Foundation Healthy Lives Prize.

Dr Free worked with the Department of Health to roll out the programme as a service to smokers across England, and since the launch of the service in 2012, more than 50,000 people have received smoking cessation support. 42% of participants reported quitting after 4 weeks – results which have been widely covered in professional and global media, and led to the development of smoking cessation support programmes by text message in Sweden, USA, India and Italy, and the World Health Organization.



LSHTM Research Online, our open access repository offering free public access to our research outputs, has grown to over 3,700 papers and 1,500 full-text abstracts, and we are now developing an online data repository to facilitate the reuse and reanalysis of data and the validation of research findings both internally and externally.

School Centres

Bloomsbury Centre for Genetic Epidemiology & Statistics

Advances the understanding of the genetic mechanisms underlying health and disease through the development and application of computational tools and quantitative methods and models.

Centre for Evaluation

Improves the design and conduct of public health evaluations through the development, application and dissemination of rigorous methods, and facilitates the use of robust evidence to inform policy and practice decisions.

Centre for Global Mental Health

Fosters research, capacity building and advocacy in prevention, treatment and care, with the ultimate objective of reducing the global burden of mental, neurological and substance use disorders.

Centre for Global Non-Communicable Diseases

Strengthens and promotes research, training and international networking in non-communicable disease research and health policy.

Centre for History in Public Health

Promotes and undertakes high quality research in order to contribute to the development of the historical discipline and to historical understanding in the field of public health policy.

MARCH Centre for Maternal, Adolescent, Reproductive & Child Health

Improves health for adolescents, women, newborns and children through better numbers and evidence, leadership development, and active policy engagement.

Centre for the Mathematical Modelling of Infectious Diseases

Uses models to understand and predict the spread of infectious diseases and to test and guide interventions.

Centre for Statistical Methodology

Enhances methodological cross-fertilisation among public health researchers.

Centre for Tuberculosis (TB Centre)

Provides a focus for the School's long-established global research expertise in tuberculosis epidemiology, immunology, diagnosis and treatment.

European Centre on Health of Societies in Transition ECOHOST

Research into diverse aspects of health and health care arising from social, political and economic transformation.

International Centre for Evidence on Disability

Improves health and well-being among people with disabilities through excellence in research, teaching and knowledge translation.

International Diagnostics Centre

Facilitates the development, evaluation and implementation of accessible, quality assured in-vitro diagnostics for global health through information sharing and advocacy.

Malaria Centre

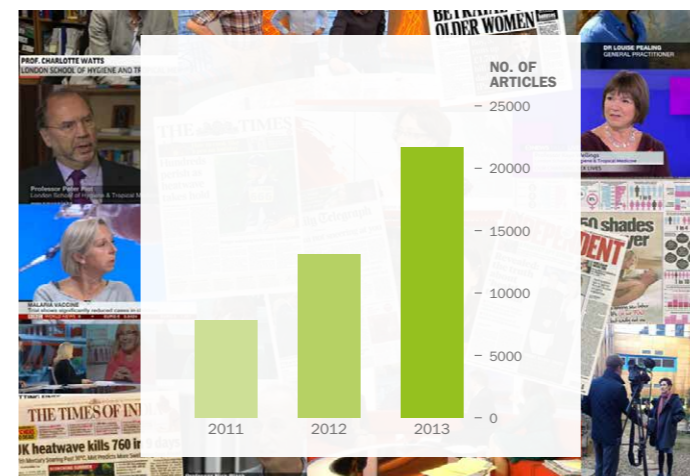
Provides evidence for policy and practice in the prevention, diagnosis and treatment of malaria around the world.

Vaccine Centre

Research from antigen discovery to the evaluation of vaccine effectiveness, policy and advocacy.

The School is also having a major impact in terms of contribution to the public debate on a range of issues, with a dramatic increase in media coverage in recent years, including many front-page articles in national and global media. We also increased our presence in online and social media with our active press **Twitter feed** gaining over 4,750 followers, and **Facebook** more than doubling to 4,400. Many School researchers are also highly networked on social media, with Martin McKee and Ben Goldacre named among the most influential health commentators of 2013.

Media coverage 2011-13



Top 10 media stories and highlights in 2013

- Bed sharing and cot death risk for young babies
- Estimated premature deaths attributable to UK summer heatwave
- John Snow bicentenary symposium and exhibition
- Malaria infected mosquitoes attracted to human odour
- Malaria Vaccine: latest findings from the RTS,S phase III clinical trial
- Medical tourism and the National Health Service
- National Survey of Sexual Attitudes and Lifestyles results
- Portable eye examination kit may revolutionise prevention of blindness in low-income countries
- UK Flusurvey results from 2012/13 and launch with British Science Association in 2013/14
- World Health Organization and the School report on global prevalence of violence against women

Improving health worldwide: United Kingdom

At a time of great change and challenge in the National Health Service and public health systems in the UK, we are engaged in a wide range of research programmes and projects which are making vital contributions to health outcomes, practice and policy. Partnership is key to this work, and in recent years we have developed productive and valuable collaborative links with partners in government, the NHS, Public Health England, local authorities, Royal Colleges, universities, health policy think-tanks, charities and funders including the Wellcome Trust and Cancer Research UK.

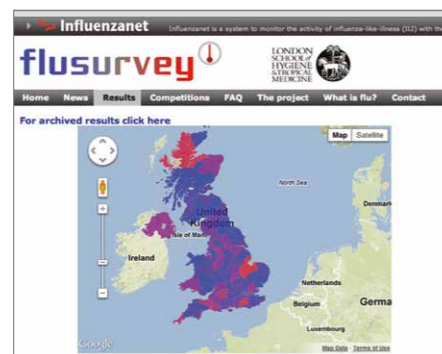
We are now home to three Department of Health Policy Research Units, partner in a fourth, and in 2012 became a partner in the National Institute for Health Research School for Public Health Research.

Many other relevant research programmes and projects are conducted across the School. We published brief summaries of around 30 of the most recent in March as part of our [Improving health worldwide series](#).

Improving the effectiveness of pilot programmes

Pilot and demonstration programmes are vital to inform the early stages of policy development. The [Policy Innovation Research Unit](#), led by Nicholas Mays, Mark Petticrew and Bob Erens at the School, brings together health and social care research expertise to support and improve evidence-informed policy-making in social care and public health policy at national level. The Unit is

currently evaluating a range of policy pilot programmes including: patient choice of general practice, cold weather alerts for patients with chronic lung disease and direct payments in social care.



UK Flusurvey, now in its fifth year, has been taken up by the British Science Association for its 2013/14 schools participation project

Olympics and regeneration in East London

What is the long-term legacy for health of the London 2012 Games and associated urban regeneration? A major five-year project is underway to explore whether and how social factors for health and well-being among local residents have improved as a result of new facilities, job opportunities, transport infrastructure, green spaces and other improvements to promote healthy living. Funded by the National Institute for Health Research, the Olympics and regeneration in East London (ORIEL) project began in 2011, with researchers collecting baseline data from around 3,000 children aged 11–12 and their parents, followed up early in 2013. The study focuses on health, well-being, physical activity, socioeconomic factors and residents' perceptions of the impact of local changes, compared with data from nearby control areas outside the Olympic zone. The participants will be followed up again early in 2014 and will form a cohort for a longitudinal study of how socio-economic and health impacts are sustained over time.



“There is good evidence that patients, particularly those with long term conditions, benefit from involvement in their own care”

Policy Research in Commissioning and Healthcare Systems

The new Policy Research Unit in Commissioning and the Healthcare System, a partnership between the School and the Universities of Manchester and Kent, works with the Department of Health to inform the development of policy on commissioning, and how it can improve services and access, increase effectiveness and respond better to patient needs. The Unit also supports the Department of Health on policy development around Personal Health Budgets, and explores the relationship between primary care expenditure and outcomes, and competition and co-operation as strategies in local health systems.

Reducing preventable hospital deaths

There are almost 12,000 preventable deaths in hospitals in England every year due to problems with care, however this is less than a third of the number previously thought. In a study published recently, Helen Hogan and Nick Black found the majority of poor care associated with preventable deaths was the result of poor monitoring of the patient's condition, wrong diagnosis or errors in medication or fluid replacement.

Engagement and voice in commissioning

There is good evidence that patients, particularly those with long term conditions, benefit from involvement in their own care. The Engagement and Voice in Commissioning project is funded by the National Institute of Health Research to investigate how patients and the public are involved in local commissioning of services, and how health organisations, including Clinical Commissioning Groups, engage with service users and enable their voices to be heard. From 2010 to 2013, researchers worked with over 90 patient groups, commissioners, health care professionals and individual patients in three sites across England, focusing on diabetes, neurological conditions, and rheumatoid arthritis.

Evidence for decision making in local government

With the abolition of Primary Care Trusts, local authorities are now responsible for public health, with guidance from NICE, and this change will potentially have major impacts across England. As partners in the [NIHR-funded School for Public Health Research](#), we are working with policy-makers and practitioners in local government to develop new evaluative research to support action on social determinants of health across a range of policy sectors including regeneration, housing, transport, crime and alcohol licensing.

Diversity of providers in the NHS

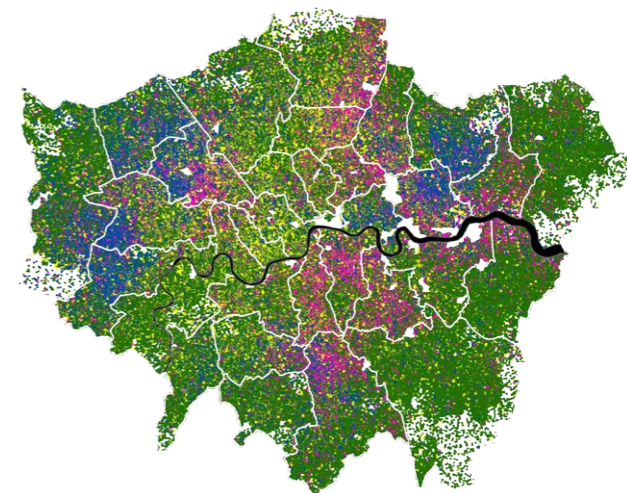
One of the key aspects of the Health and Social Care Act 2013 is the policy of broadening the types of provider of healthcare to patients to include organisations which are not part of the National Health Service itself; and to encourage those organisations which remain in the National Health Service to increase their autonomy by becoming National Health Service foundation trusts. Pauline Allen, working with colleagues at Bristol and Leeds Universities, is undertaking a series of studies funded by the National Institute for Health Research to examine the extent, nature and effects of increasing the diversity of providers.

“In recent decades, research at the School has had a major influence on government health policy in areas including smoking, air pollution and health inequalities”

Lord Crisp, former Chief Executive of the NHS and Permanent Secretary at the UK Department of Health

Air pollution and heart attacks

Comparing air pollution data with the records of over 150,000 acute coronary patients in England and Wales, Cathryn Tonne and Paul Wilkinson found that death rates after leaving hospital were higher among patients who lived in areas with increased exposure to particulate matter emissions from road traffic and industry. Published in the *European Heart Journal* in February 2013, the results show that patients living in London had the highest exposure to air pollution levels, and that patients from poorer backgrounds were more at risk of early death.



United colours of London: map developed by geoinformation systems specialists in the School's Transport and Health Group to show the impact of changing demographics and ethnicity on public health.

- White – British
- White – Non-British
- Black or Black British
- Asian or Asian British

Healthy transport

The School's [Transport and Health Group](#) has recently worked on several high-profile studies for the World Health Organization, the UK Department for Health and Transport for London on road safety and accident prevention and urban cycle commuting. Results from these and the recent *On The Buses* study of the links between free bus travel, health and well-being of older people and young people received widespread coverage throughout 2013.



Factors affecting lung cancer survival

Lung cancer survival rates in the UK are lower than in six comparator countries, according to a new international study carried out by the [Cancer Research UK Survival Group](#) at the School. While Sweden had the highest rate of one-year survival from the most common form of the disease (non-small cell lung cancer) at 46%, the UK ranked lowest at just 30%.

Dietary salt and cardiovascular disease

The number of people in England adding salt to food at the table fell by more than a quarter in five years, according to work by Alan Dangour and colleagues published in January 2013 in the *British Journal of Nutrition*. The researchers found that since the salt awareness campaign began in 2003, the proportion of people reporting that they add salt at the table dropped from 32% to 23% in the following five years.



Knowledge translation and innovation

The overarching aims of our knowledge translation and innovation activities are to stimulate take-up of research findings and tools, maximise the impact and benefit of the School's research through actively expanding areas of application, exploiting our expertise and innovation, and setting up responsible partnerships with industry.

We have major strengths in the genome sciences, drug resistance, disease transmission and pathogenic mechanisms, which enable us to exploit biomedical and technology advances and translate that knowledge into new drugs, vaccines, diagnostic reagents and disease control strategies. These innovations are widely disseminated through our global networks, and partner institutions in disease endemic countries are key collaborators in this research.

We are continuing to work with private companies. For example, the Merck for Mothers Evaluation team, based at the School, is assessing the impact of the \$500 million 10-year Merck for Mothers Initiative, which focuses on product innovation and



Ann Fazakerley, Director of External Relations and Knowledge Transfer

“Our International Diagnostics Centre works with companies and regulatory authorities worldwide to reduce barriers to market entry for new diagnostic tests”



Long-life insecticide treated bed nets are one of the most important insect vector control products

advocacy. It supports maternal health projects in six countries spanning Africa, Asia and the USA with the aim of identifying sustainable solutions based on evidence from the evaluation.

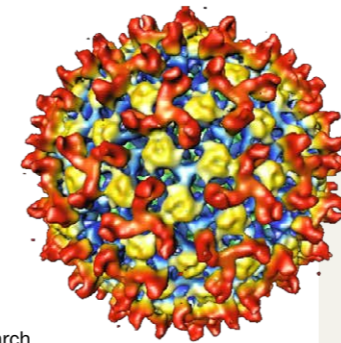
This year, we also launched Chariot Innovations Limited, a wholly-owned subsidiary of the School, to focus on commercially-viable knowledge translation activities. The School's Arthropod Control Product Test Centre (Arctec) is now a world-leading independent test centre for consultancy and the evaluation and development of arthropod pest control technologies. It provides laboratory and field evaluation of repellent sprays, pumps, lotions, impregnated textiles and insecticide-treated products.



Dr Samuel Assefa recently joined the Department of Pathogen Molecular Biology as Research Fellow in Population Genomics

Led by Professor Brendan Wren, researchers are using genome sequencing technologies to identify pathways and exploit bacterial glycosylation systems for glycoengineering and novel vaccine design. The research group exploits a range of post genome research strategies to gain a comprehensive understanding of how bacterial pathogens function, how they evolve and how they interact with their respective hosts. More details of this work are on page 17.

Diagnostics are under-valued in global health, yet important advances have been made, especially in point-of-care diagnostic tests for malaria, HIV, syphilis and other infectious diseases. These can greatly improve the quality of clinical care, and have a major role to play in improving surveillance and targeting for elimination. Our International Diagnostics Centre works with companies and regulatory authorities worldwide to reduce barriers to market entry for new diagnostic tests.



Diagnostics research conducted by School staff in the past five years has already led to important changes in public health policy and practice in many countries. With collaborators in more than 100 countries in Africa, Asia and South America, we have access to a unique range of clinical material for the evaluation of new diagnostics, and are particularly well placed to study the impact and cost-effectiveness of new diagnostic tests in a wide variety of settings.



Professors Polly Roy (above) and Brendan Wren were both awarded Wellcome Trust senior investigator awards in 2013

Developing a safe Bluetongue virus vaccine

Bluetongue is a viral disease of livestock spread by midges. Since 1998, outbreaks in Europe have killed more than 2 million animals. Polly Roy's research has led to bluetongue becoming one of the best understood viruses at the structural and molecular levels. This has paved the way for improved diagnostics and vaccines, and generic applications for viral vaccine design. Boehringer Ingelheim now produces a bluetongue vaccine based on Professor Roy's research, which will enable the creation of several other promising new vaccines exploiting virus-like particles as a method to produce safe vaccines against human and animal viral pathogens.

Using smartphone technology for eye health

School researcher Andrew Bastawrous is conducting the Nakuru Eye Disease Cohort Study – a follow-up of 5,000 participants in the Rift Valley of Kenya to assess the incidence of the major eye diseases for the first time in an African setting. Alongside this study, Andrew is developing a Portable Eye Examination Kit, known as Peek, which uses adapted smartphone technology to identify, diagnose and map blindness and visual impairment. This has attracted widespread media coverage and is now being developed as a key technological innovation in eye health diagnosis.

Bloomsbury Research Institute



Infectious and parasitic diseases account for nearly 20% of all deaths worldwide. Although great strides have been made to control the 'big three' – HIV, malaria and tuberculosis – they still claim more than four million lives every year, mainly in low-income countries. The emergence and spread of new and drug-resistant diseases is a major and growing global challenge. In the UK, thousands die from hospital-acquired infections, and treatment and prevention of antibiotic-resistant strains of pathogens costs the National Health Service over £1 billion annually.

The Bloomsbury Research Institute is a joint venture between the London School of Hygiene & Tropical Medicine and University College London. Its mission is

to discover and develop new tools for the control and treatment of infection, through improved understanding of pathogens and the dynamics of infectious disease in global populations.

Over the next few years, we aim to bring the Institute together under one roof in state-of-the-art facilities. This will create a centre of excellence for research and enhance engagement with industry and international networks. It offers an innovative model for research and training that integrates advances in basic science with those in population sciences and computational biology, to bring new understanding to disease treatment, prevention and control.



Peek in practice, working with Maasai communities in Kenya

2013: the year in review

Selected highlights and events

January

London Centre for Neglected Tropical Diseases launched, a partnership with Imperial College London and the Natural History Museum to tackle diseases including blinding trachoma, schistosomiasis, soil-transmitted helminths and leishmaniasis, which affect more than one billion of the world's poorest people.

Mobile phone technology, including text messaging, shown to help people adhere to antiretroviral therapies and quit smoking, in a systematic review led by Caroline Free.



Memorandum of Understanding signed with Sichuan University, China.

February



The School received a highly positive review from the UK's Quality Assurance Agency for Higher Education, which highlighted examples of good practice including the School's approach to staff development, and how research excellence and our diverse student body support educational programmes.



Programming for Nutrition Outcomes, a free, open-access distance learning module, developed with the Department for International Development to meet training needs in countries facing a high burden of undernutrition; over 15,000 people from 161 countries have already accessed the module.

Major international study by the Cancer Research UK Survival Group at the School finds lung cancer survival rates in the UK are lower than in six comparator countries.

March



The bicentenary of John Snow, founder of modern epidemiology, celebrated at the School with a symposium series and public exhibition of historical treasures and new artwork inspired by his pioneering work and legacy.

Research by David Conway and colleagues shows that malaria vector *Anopheles gambiae* mosquitoes in Africa, are more genetically complex than previously thought due to interbreeding.

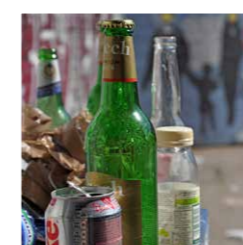
A gift from Janssen Pharmaceutica NV to the Centre for Global Mental Health established a fund for new scholarships to support Master's students. A further nine scholarships were announced in November.



The Lancet Series on Europe launched at the School: researchers led by Martin McKee identified many disparities in access to services and health outcomes.

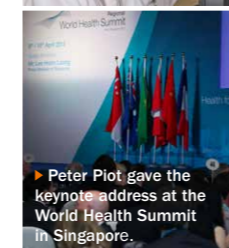
April

Jim McCambridge and colleagues found that the alcohol industry distorted evidence on alcohol control measures in order to influence Scottish public health policy in their favour.



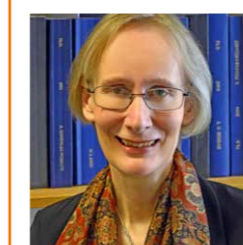
Agreement signed with the Kenya Medical Research Institute to collaborate on training, research and capacity building.

A new MSc module on Pathogen Genomics launched, organised and taught jointly with the Wellcome Trust Sanger Institute.



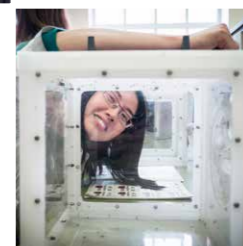
Peter Piot gave the keynote address at the World Health Summit in Singapore.

May



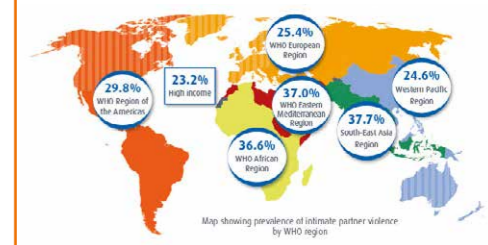
Anne Mills elected a Fellow of the Royal Society.

School researchers discovered mosquitoes infected with malaria parasites are significantly more attracted to human odour than uninfected mosquitoes, with important implications for vector control; the team who made the discovery also featured in the Wellcome Collection's *Who's the Pest?* public engagement project.



Research led by Bob Carpenter found that the risk of cot death among breastfed babies increased with bed sharing, even when the parents did not smoke and the mother had not consumed alcohol or drugs, prompting the UK government to urgently examine its guidelines on co-sleeping.

June



A study led by Charlotte Watts with the World Health Organization and South African Medical Research Council found that as many as one in three women are victims of gender violence. The report has influenced policy and received over 1,500 pieces of media coverage worldwide.

Andy Hall knighted for Services to Public Health in the Queen's Birthday Honours list. Sir Andy studied MSc Epidemiology at the School in 1982 and went on to work here for 22 years.



The government of Ethiopia signed a Memorandum of Understanding with the School, making a commitment to work closely together to strengthen public health research and training capacity.

July



MARCH Centre for Maternal, Adolescent, Reproductive and Child Health seminar and parliamentary briefing for the *Towards Happier Birth Days* programme launched to improve the health of babies, girls and women worldwide.

Ben Armstrong calculated around 650 premature deaths could be attributed to the heatwave in England in July 2013. Nick Black commissioned by the UK Department of Health to lead a study into avoidable hospital deaths.

A study led by Kate Walker found that publication of death rates for individual surgeons in England may fail to identify poor performance in specialties where low numbers of key operations lead to unreliable results.



August



Peek, the mobile app and clip-on hardware developed by Andrew Bastawros that transforms a smartphone into a tool capable of carrying out eye tests and diagnosing problems with vision, was tested in Kenya and profiled in a BBC exclusive.

Our Young Scientists Programme continued to develop throughout the year, with 33 students aged 14-18 from ten schools across London undertaking two-week independent research projects supported by academics at the School.



September

PopART, a major study in South Africa and Zambia to test a new approach to the prevention and control of HIV and AIDS in Africa was launched led by Richard Hayes.



The China Medical Board awarded scholarships to Chinese students for postgraduate studies at the School. We welcomed the first students on this scheme.

An evaluation of the effectiveness of meningitis serogroup A vaccine, MenAfriVac, found there had been no cases of meningitis following a mass vaccination campaign in Chad led by Brian Greenwood.



October



The School topped the table of the world's leading research-focused graduate schools published by Thomson Reuters and Times Higher Education.

A new Master's course in One Health, delivered jointly with the Royal Veterinary College launched to study disease at the interface between humans, animals and the environment.

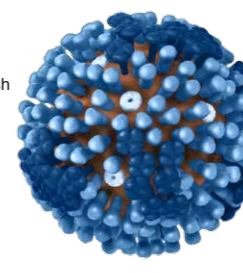


The School signed Memoranda of Understanding with FHI 360, Universidade de Sao Paulo, Brazil and Fundação Oswaldo Cruz - Centro de Pesquisas Aggeu Magalhães, Universidade de Pernambuco.



November

UK Flusurvey 2013/14 launched, with a new partnership with the British Science Association to focus on flu in children, with schools nationwide now contributing data to this vital survey.



Findings from the third National Survey of Sexual Attitudes and Lifestyles, led by Kaye Wellings at the School and Dame Anne Johnson at UCL, revealed how British sexual attitudes and behaviour have changed in recent decades.



To mark the 25th anniversary of the Department of Health Services Research and Policy at the School, a symposium was held to explore how our work has helped meet the challenges faced by health services and systems in the UK and abroad, and how our research has supported and guided changes and reforms.

Aurora leadership development initiative for women in academia launched at the School.

December



Students secured £80,000 in pledges in the first three weeks of our Alumni Fund Campaign 2013/14, putting it on course to exceed last year's successful campaign raising funds for people, projects and partnerships.

The BCG vaccine has been found to be more effective against pulmonary tuberculosis than previously thought, according to a new systematic review led by Punam Mangtani.

Memoranda of Understanding signed with the University of Hong Kong, (below) and the National Institute for Parasitic Diseases in China.



Faculty review: Epidemiology and Population Health

KEY INFORMATION

Dean of Faculty: Professor John Edmunds

Staff total: 370 **Academic:** 275 **Professional support:** 95

DEPARTMENTS

Department of Infectious Disease Epidemiology

Head: Professor Carine Ronsmans

Department of Population Health

Head: Dr Phil Edwards

Department of Medical Statistics

Head: Professor James Carpenter

Department of Non-communicable Disease Epidemiology

Head: Professor Liam Smeeth

Research Degrees Directors: Professor Suzanne Filteau and Professor Simon Cousens

Taught Course Director: Craig Higgins

NUMBER OF DOCTORAL STUDENTS 2012/13

Student total: 122 **UK/EU:** 63 **Overseas:** 59

Top 5 grants awarded 2012/13

1. International Initiative for Impact Evaluation (3ie) – *Population Effects of Antiretroviral Therapy to Reduce HIV Transmission (PopART)* Richard Hayes **£8.9 million**
2. Wellcome Trust – *Wellcome Trust Strategic Award for tuberculosis, HIV and non-communicable diseases in Malawi* Shabbar Jaffar and Moffat Nyirenda **£5.6 million**
3. Medical Research Council – *Epidemiological and statistical research on health problems of developing countries: MRC Tropical Epidemiology Group* Richard Hayes **£3.9 million**
4. Department of Health – *HALT-IT (Haemorrhage Alleviation with Tranexamic acid-Intestinal System)* Ian Roberts **£3.4 million**
5. Wellcome Trust – *Population impact of conjugate vaccine on pneumococcal transmission and disease in Kenya* Anthony Scott **£2.0 million**



Professor John Edmunds

Our faculty's purpose is to inform biological understanding of diseases and to provide evidence for decision-making in global public health through innovative and rigorous research and excellence in teaching. This year, the faculty has continued to maintain and develop its position at the forefront of both applied and methodological research; making key contributions to understanding the causes of disease, and evaluating new ways to improve health.

Randomised controlled trials are the gold standard method for determining the effectiveness of an intervention, and our Clinical Trials Unit continues to lead ground-breaking research into the treatment of trauma and injuries. Each year, over 100,000 women die from bleeding after childbirth, mostly in low and middle income countries. Previous work led by the Unit has shown that tranexamic acid (TXA) reduces surgical bleeding and death in trauma patients.

The team, headed by Professor Ian Roberts, is running a new trial to test the hypothesis that tranexamic acid can also reduce death from post-partum haemorrhage. As of November 2013, the WOMAN trial has recruited nearly 10,000 women with severe post-partum bleeding in 20 countries, including large cohorts from Sub-Saharan Africa, and is now the biggest randomised controlled trial of a treatment for post-partum bleeding ever conducted. If tranexamic acid is shown to be effective in reducing maternal mortality, this will have a major impact on clinical care worldwide.

Not all clinical trials give an unambiguously positive finding. The incidence of tuberculosis in South African gold miners is the highest in the world, being driven by HIV, silica dust and crowded conditions. The Thibela TB study was a large-scale cluster randomised trial led by Gavin Churchyard of the Aurum Institute, an honorary professor in the faculty, with Katherine Fielding, Alison Grant and other colleagues from the School. The study aimed to interrupt TB transmission by mass screening and treatment with isoniazid preventive therapy. Entire workforces were randomly assigned to receive either this therapy, or standard TB control. The results, to be published early in 2014, showed that those mines that adopted the intervention had similar incidences and prevalences to those that did not. At the individual level it appeared that the intervention did reduce TB, but this effect was soon lost as individuals stopped taking it.

Intervention trials are not always possible, so careful observational studies are often required to evaluate the impact of changes to health care provision. One of the most important such change in recent years is the rolling out of antiretroviral therapy for HIV positive patients in Africa. Basia Zaba and colleagues have analysed data from longitudinal population based studies of HIV/AIDS in Africa to assess the impact of antiretroviral therapy on deaths around the time of pregnancy. In a paper published in the *Lancet*, they showed that in their survey of over 138,000 women, HIV increased the risk of death in pregnant or post-partum women by around eight times. The difference is even greater in non-pregnant women, due to the healthy pregnancy effect – very sick women



Group activities help young people build nurturing relationships at Sangath, a charity based in Goa, co-founded by Vikram Patel, Professor of International Mental Health at the School

“Our Cancer Survival Group currently involves over 270 cancer registries in 66 countries with data for around 30 million cancer patients”

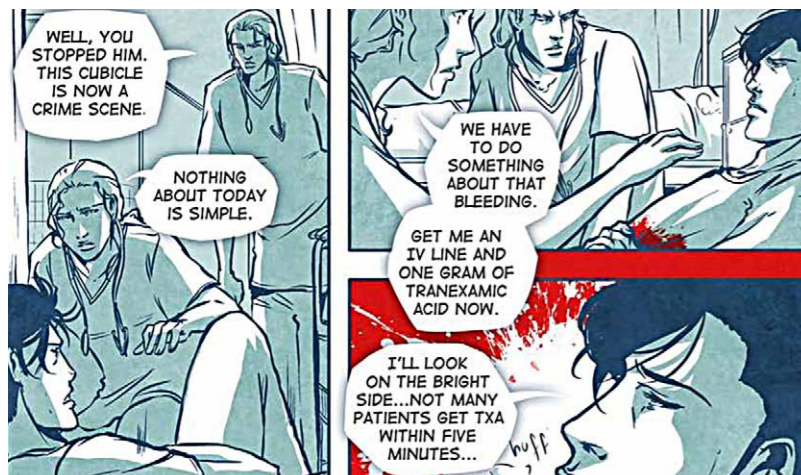
do not become pregnant. Antiretroviral therapy has dramatically improved survivorship among HIV-infected, non-pregnant women, though mortality remains significantly higher than for uninfected women. In HIV-infected pregnant and post-partum women, the fall in mortality with antiretroviral therapy introduction has been smaller.

Another key international research programme with clear policy implications is CONCORD-2, run by our Cancer Research UK Cancer Survival Group. This enormous collaboration, designed to establish worldwide surveillance of cancer survival for the first time, currently involves over 270 cancer registries in 66 countries, with data for around 30 million cancer patients. The aim is to achieve robust global comparisons of survival trends since 1995 for 10 cancers in adults and leukaemia in children. Even in high-income countries, there are wide differences in cancer survival, which could be due to factors such as delay in diagnosis, unequal access to high-quality treatment and the organisation of health services. These differences can be even larger when comparing across low and middle-income countries. CONCORD will be the most comprehensive analysis of cancer survival to date. It will provide national and international

policy-makers with clear information on the comparative effectiveness of health systems in managing cancer patients, and on what factors, such as stage at diagnosis, ethnicity and access to care, may underlie the differences in survival within and between countries.

New statistical and mathematical advances allow for better and more efficient use of collected data. One example of this is provided by the work of Marc Baguelin and colleagues here and at Public Health England. They developed a novel statistical framework to fit a model of flu transmission to multiple longitudinal data sources from the UK. The model demonstrated the importance of children in spreading flu, and was used to guide national immunisation policy. Starting in the autumn of 2013, children will now be offered an annual flu vaccination in schools and nurseries.

Missing data affect both randomised controlled trials and observational studies, and a key tool for analysing the resulting partially observed data is *multiple imputation*. Bob Carpenter and Mike Kenward, who have been active in this area for a number of years, published a research monograph *Multiple Imputation and Its Application* with Wiley. Here they describe advances that overcome issues with multilevel data and non-linear relationships. Among many applications, this methodology was used in the analysis of a study which showed bed-sharing is a risk factor for sudden unexplained infant death (also known as cot death), even in parents who do not have other risk factors. This article featured in numerous media interviews, and has been downloaded over 17,000 times since it appeared in May.



Manga-style comic created by Ian Roberts to demonstrate the benefits of tranexamic acid in emergency medicine



Thibela tuberculosis project trialled interventions among HIV-affected gold miners in South Africa

Faculty review: Infectious and Tropical Diseases

KEY INFORMATION

Dean of Faculty: Professor Simon Croft
Staff total: 360 **Academic:** 255 **Professional support:** 105

DEPARTMENTS

- Department of Clinical Research**
Head: Professor Philippe Mayaud
- Department of Disease Control**
Head: Professor Mark Rowland
- Department of Immunology and Infection**
Head: Dr Colin Sutherland
- Department of Pathogen Molecular Biology**
Head: Professor John Kelly
- Research Degrees Director:** Dr David Baker
- Taught Course Director:** Dr Graham Clark

NUMBER OF DOCTORAL STUDENTS 2012/13

Student total: 149 **UK/EU:** 68 **Overseas:** 81

Top 5 grants awarded 2012/13

1. Commission of the European Community – TANDEM Hazel Dockrell **£5.0 million**
2. Medical Research Council – Seasonal malaria chemoprevention in African children Brian Greenwood **£4.0 million**
3. UNAIDS via World Health Organization – Global Network to Improve Access and Quality of HIV Monitoring Technologies Rosanna Peeling **£3.0 million**
4. Medical Research Council – Clostridium difficile, intestinal microbiota and host response in hospitalised patients Brendan Wren **£2.4 million**
5. Commission of the European Community – GENINVADE David Conway **£2.4 million**



Professor Simon Croft

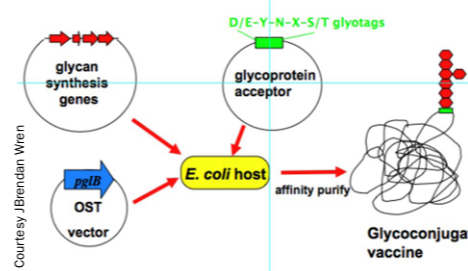
Research on pathogens, infectious diseases and interventions for disease control involves challenges and opportunities to integrate new “omic” biology and informatics into drug, vaccine and diagnostic research and development. It is also focused on evaluation and implementation into elimination and eradication programmes. To meet these challenges and opportunities, we have made new joint appointments with the Sanger Institute and the Crick Institute and also the development of the Bloomsbury Research Institute (see page 11).

The faculty has led the development of a number of School Centres (page 7), for example the International Centre for Evidence in Disability, TB Centre, International Diagnostics Centre, and is a key partner in the Centre for Evaluation. Our teaching partnerships have also grown with the East African Diploma of Tropical Medicine and Hygiene, based in Moshi Tanzania and Kampala Uganda, now well established (with 20 students from Africa and 40 international in 2013), and this year we have launched a new MSc in One Health with the Royal Veterinary College, and a new MSc module on Pathogen Genomics, organised and taught jointly with members of the Wellcome Trust Sanger Institute.

The Wellcome Trust Bloomsbury Centre for Global Health Research 2013 meeting included 32 Clinical Fellows, who presented the results of their research in 14 countries in Africa and Asia and celebrated the renewal of the Centre, with Wellcome Trust funding, for a further five years.

Whole genome sequencing technologies continue to drive research on pathogenesis, epidemiology, virulence, and drug and vaccine development. Now supported by a high-throughput DNA Sequencing Facility equipped with an Illumina MiSeq machine, this research has offered many new insights into drug-resistance in tuberculosis, malaria transmission and bacterial pathogenesis. New in-vivo imaging technologies, research on glycan coupling technology for bacterial pathogens and virus-like particles from bluetongue virus are enabling productive collaborations to be established with the private sector, both with pharmaceutical companies and the biotech sector, on vaccine, diagnostics and drug development.

Protein Glycan Coupling Technology - a one step process to produce novel recombinant glycoconjugate vaccines



Our interactions with industry are also growing in vector control research, with continued expansion of Africa-based projects on new product development and evaluation, working with the Innovative Vector Control Consortium and the Pan African Malaria Vector Research Consortium. A spin-out company, Arthropod Control Product Test Centre (Arctec) is working with more than 60 industrial clients on the development and evaluation of insect control technologies. Another initiative in vector



Anopheles infected with malaria



Malaria intervention trials in Tororo, Uganda, courtesy Helen Allwood, Malaria Capacity Development Consortium

“Whole genome sequencing technologies continue to drive research on pathogenesis, epidemiology, virulence, and drug and vaccine development”

studies, funded through a Biotechnology and Biological Sciences Research Council Responsive Mode grant, has shown for the first time that malaria infected mosquitoes respond more to human odour than uninfected mosquitoes.

Research on hygiene and sanitation, also in collaboration with industry partners, has demonstrated the success of a new approach to changing behaviour. The ‘SuperAma’ animated video campaign and evaluation uses emotional cues such as disgust and nurture to encourage mothers to wash their hands with soap. With St John’s Research Institute Bangalore, this approach significantly increased rates of handwashing with soap in trials. Hygiene researchers also played a lead role in another School study, across faculties, which showed, through the first systematic review and meta-analysis, the importance of water, sanitation and hygiene on childhood nutrition and growth.

Clinical interventions and patient care are being supported through our research innovations. Researchers in our International Centre for Eye Health have shown that the Portable Eye Examination Kit (Peek), a smartphone-based tool, can enable comprehensive eye examinations to aid the delivery and co-ordination of eye care in remote locations. Our continued input, through the Artemisinin Combination Therapy (ACT) Consortium into malaria control, has shown the crucial role of rapid diagnostic tests in targeting drugs to those who need them, both through public health services and in the private sector, in Ghana and Uganda.

We are also conducting pioneering work on neglected tropical diseases, mainly parasitic in origin. Our work continues on the Global Atlas of Helminth Infection, disease mapping for helminth control, and efforts to eliminate trachoma, the most common infectious cause of blindness with 21 million cases worldwide, have been boosted by the launch of the Global Trachoma Mapping Project. School researchers are working in a consortium with SightSavers and the International Trachoma Initiative, Ministries of Health, and other NGOs and academic partners to complete baseline mapping worldwide by 2015.

The Story of Supermom
 When you choose handwashing with soap, you choose progress.

Sanitation in Bangalore with SuperAma intervention

Faculty review: Public Health and Policy

KEY INFORMATION

Dean of Faculty: Professor Richard Smith
Staff total: 286 **Academic:** 255 **Professional support:** 31

DEPARTMENTS

Department of Global Health and Development

Head: Professor Kara Hanson

Department of Health Services Research and Policy

Head: Professor Jan van der Meulen

Department of Social and Environmental Health Research

Head: Professor Kaye Wellings

Research Degrees Director: Judy Green, Nicki Thorogood (Deputy)

Taught Course Director: Hannah Babad

NUMBER OF DOCTORAL STUDENTS 2012/13

Student total: 135 **UK/EU:** 72 **Overseas:** 63

Top 5 grants awarded 2012/13

1. Department for International Development Asia – *Regional Anti-Trafficking Programme* Cathy Zimmerman **£1.5 million**
2. National Institute of Health Research – *Using Patient Reported Outcome Measures to Assess Quality of Life in Dementia* Sarah Smith **£995,000**
3. Family Health International USAID – *Multi-drug resistant Tuberculosis in Myanmar* Richard Coker **\$750,000**
4. National Institute of Health Research – *The impact of home energy efficiency interventions and winter fuel payments on winter and cold-related mortality* Paul Wilkinson **£0.6 million**
5. Rush Foundation – *Rethinking and creating fiscal space for HIV through co-investments* Charlotte Watts **£0.6 million**



Our new Tavistock Place buildings are home to the Faculty of Public Health and Policy



Professor Richard Smith

The mission of the faculty is to improve health globally through research, teaching and engagement in areas of health systems and services, health policy, and the individual, social and environmental determinants of health. We undertake cutting-edge research and contribute directly to policy in areas of current and future importance to public health.

This year has seen a major public focus on gender violence: our Gender, Violence and Health Centre, within the Department of Global Health and Development, led work for the Global Burden of Disease in assessing the global prevalence and health impacts of violence against women and of child sexual abuse. The findings, launched with the World Health Organization and Medical Research Council South Africa with publications in *Science* and *The Lancet*, showed that 30% of partnered women globally have experienced violence from a partner. More broadly, the Centre's evidence on effective interventions helped inform the growing prevention agenda, with staff input into a range of high-level consultations. This expertise also led to the successful launch of a new short course on Researching gender based violence: methods and meaning.

It is now beyond doubt that environmental change profoundly impacts health and well-being. Our Environmental Epidemiology Group, based within the Department of Social and Environmental Health Research, works at the forefront of this area, influencing national policy. Together with colleagues in the Policy Innovation Research Unit in our Department of Health Services Research and Policy, the group

was commissioned by the Department of Health to evaluate the Cold Weather Plan for England, introduced in 2011. Early findings have led Public Health England to review the temperature thresholds used to trigger cold weather alerts to the NHS, social services and other agencies.

The National Institute for Health and Care Excellence contracted the Environmental Epidemiology Group to assess evidence on the effectiveness of interventions to alleviate adverse health effects from cold housing and cold weather. The group also won a prestigious European Research Council grant to investigate the relationship between particulate air pollution and risk factors for heart disease in India.

“Integrated services, provided by trusted and competent providers, can be a step in the right direction to ensuring access to more health services for all”

President Joyce Banda speaking at the launch of the School's Integra partnership project report at the UK Houses of Parliament, March 2013



Integra launch at the UK House of Lords with Susannah Mayhew and President Joyce Banda of Malawi



'SASA' is a five-year project to stop violence against women and reduce HIV risk in Uganda. It is led by Raising Voices and the Centre for Domestic Violence prevention

At the macro level of climate change, a new EU Framework funded project IMPRESSIONS (Impacts and Risks from High-End Scenarios: Strategies for Innovative Solutions) will focus on broader scenarios relating to climate change, and a partnership funded by the Medical Research Council and Natural Environment Research Council with Exeter University will create a platform linking climate and other environmental data with health and well-being data.

Sexual and reproductive health is another area in which we are taking a lead. In March, researchers from the Anthropology, Politics and Policy Group within the Department of Global Health and Development launched the findings of the Integra Initiative, the largest ever evaluation of different models of HIV and social and reproductive health integration. The study found that integration of HIV and reproductive health services in Kenya, Malawi and Swaziland can lead to better health outcomes and service experience, decreased stigma and cost savings.

This autumn saw the culmination of work by staff within the Department of Social and Environmental Health Research on the third 10-year UK National Survey of Sexual Attitudes and Lifestyles (NATSAL). Over 15,000 adults aged 16–74 years participated in interviews on sexual behaviour, fertility, contraceptive use and sex-related diseases. Funded by the Medical Research Council and the Wellcome Trust, with support from the Economic & Social Research Council and the Department of Health this is one of the largest ever studies of sexual behaviour undertaken in a single country. The results, published in a special issue of *The Lancet* reveal how sexual behaviour and attitudes in Britain have changed in recent decades.

Our faculty also continued to be a leading source of advice to the UK NHS. Staff from the Department of Health Services Research and Policy, in partnership with Royal Colleges representing surgeons, obstetricians and gynaecologists, advised a number of surgical specialties on how best to report clinical outcomes for individual clinicians and contributed to the national debate on achieving greater transparency on the performance of health care providers. Staff also advised on the introduction of value-based pricing within the National Health Service to inform how National Institute for Health and Care Excellence will decide which treatments are funded by the National Health Service and at what price.

In October, Nick Black, Professor of Health Services Research, was awarded a global Career Achievement Prize by the International Society for Quality in Healthcare, in recognition of his work on the use of patient reported outcome measures (PROMs). Research with collaborators at the University of York, funded by the National Institute of Health Research looking at the implications for the National Health Service of inward and outward medical tourism, was published. The largest empirical study of medical tourism to date, the findings received widespread coverage in professional and national media.

In November, the School held a symposium to celebrate 25 years of Health Services Research, and assess future challenges. Looking ahead, in an exciting new joint venture coordinated through UCLPartners, faculty staff will play a leading role within the National Institute of Health Research Collaboration for Leadership in Applied Health Research and Care, to carry out applied health research within a population of six million people living in north and east London and the surrounding areas.

Photo by Annie Holmes, courtesy STRIVE / Raising Voices

Education: teaching and learning

To meet increased demand and changing priorities in public and global health, our programmes have continued to evolve and expand this year. Providing joint courses with partner institutions in the UK and globally is a key strategic goal, and in 2013 we launched a new MSc in One Health with the Royal Veterinary College, and a new short course in vaccinology with the Saw Swee Hock School of Public Health at the National University of Singapore. In April, we developed a new student recruitment strategy, focusing on engagement with prospective students and applicants, and we secured significant new funding for studentships.



Professor Sharon Huttly, Dean of Studies

Following a comprehensive audit by the UK Quality Assurance Agency for Higher Education, we received the report in January 2013. This confirmed that the School 'meets UK expectations' in all the judgement areas – academic standards, quality and enhancement of student learning opportunities, and public information about the education offered. The report identified a number of examples of good practice, including our approach to staff development, the mechanisms for world-class research activity to inform and enhance student learning and student peer support networks.

“The report identified a number of examples of good practice, including our approach to staff development, the mechanisms for world-class research activity to inform and enhance student learning, and facilitate student peer support networks”

The Student Representative Council participated fully in the review and, as always, worked with staff throughout the year to help improve the student experience. In addition to organising activities around student social, welfare, charity and sports activities, the Council contributed to developing enhanced support in areas such as careers guidance.

To mark the centenary of the Medical Research Council, the School was awarded funds to create a competitive award for a 6-month postdoctoral fellowship. The fellowship was won by Dr Sarah Nogaro, building on her PhD research working with Dr John Raynes to investigate the development of clinical immunity to malaria.



Research poster showcase event

In December, the Higher Education Funding Council for England announced new funding to support an innovative 'pre-doctoral' programme in social science for mature students at the School and three other University of London partners. This will be developed and delivered by the Economic and Social Science Research Council funded Bloomsbury Doctoral Training Centre.

With major changes to the funding environment in UK higher education, we are planning ahead to meet the needs of future generations of postgraduate students. This includes working with sector bodies to address funding and other challenges. In 2013/14, we are undertaking a major internal review of our education programme to ensure it remains globally competitive and relevant for students' future careers.



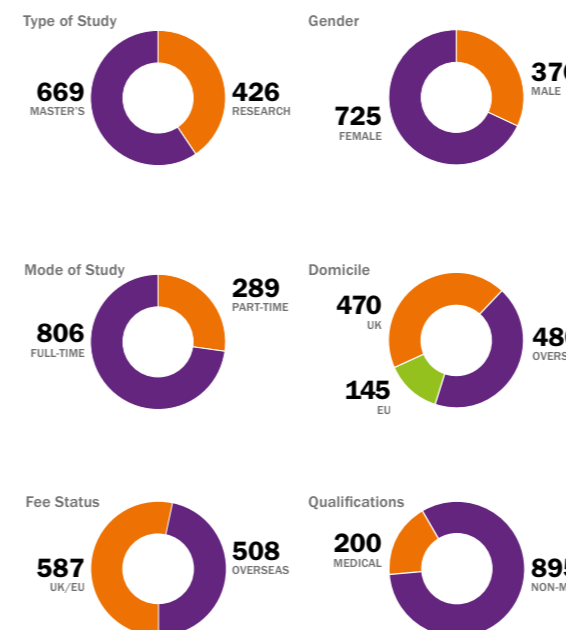
Courtesy Rob Irving

In March, despite snow, we hosted our largest Graduation Day ever

Facts and figures

TOTAL STUDENTS ENROLLED 2013/14	3925
London-based Master's and research degrees (all)	1095
Distance learning Master's students	2830

TOTAL LONDON-BASED STUDENTS 2013/14	1095
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LONDON-BASED MASTER'S DEGREE STUDENTS	546			669		
	2012/13			2013/14		
COURSE	UK/EU	OVERSEAS	TOTAL	UK/EU	OVERSEAS	TOTAL
Control of Infectious Diseases	23	18	41	23	21	44
Demography & Health	8	4	12	9	4	13
Epidemiology	29	13	42	28	23	51
Global Mental Health ¹	13	7	20	6	19	25
Health Policy, Planning & Financing ²	26	23	49	34	37	71
Immunology of Infectious Diseases	16	2	18	15	4	19
Medical Entomology for Disease Control	6	1	7	3	2	5
Medical Microbiology	17	4	21	10	5	15
Medical Parasitology	17	2	19	7	3	10
Medical Statistics	32	7	39	32	12	44
Molecular Biology of Infectious Diseases	5	2	7	6	1	7
Nutrition for Global Health	10	5	15	12	9	21
One Health (Infectious Diseases) ³	–	–	–	8	0	8
Public Health	83	56	139	114	77	191
Public Health for Eye Care	1	7	8	1	17	18
Public Health in Developing Countries	18	23	41	10	29	39
Reproductive & Sexual Health Research	10	9	19	16	15	31
Tropical Medicine & International Health	17	17	34	24	20	44
Veterinary Epidemiology ³	13	2	15	9	4	13
TOTAL	344	202	546	367	302	669

¹ with Institute of Psychiatry, King's College London ² with London School of Economics ³ with Royal Veterinary College

DISTANCE-LEARNING STUDENTS	2830	
COURSE	2012/13	2013/14
Clinical Trials	314	284
Epidemiology	560	597
Global Health Policy	149	215
Infectious Diseases	382	367
Public Health (all streams together)	1166	1126
Individual modules	234	241
Total	2805	2830

DOCTORAL DEGREE STUDENTS	406			426		
	2012/13			2013/14		
FACULTY	UK/EU	OVERSEAS	TOTAL	UK/EU	OVERSEAS	TOTAL
Epidemiology and Population Health	63	59	122	68	57	125
Infectious and Tropical Diseases	68	81	149	69	80	149
Public Health and Policy	72	63	135	83	69	152
Total	203	203	406	220	206	426

CONTINUOUS PROFESSIONAL DEVELOPMENT PROGRAMME: SHORT COURSES RUN IN 2012/13	TOTAL PARTICIPANTS 992	
Adolescent Health in Low & Middle Income Countries	East African Diploma in Tropical Medicine & Hygiene	Pathogen Genomics & Genomic Epidemiology of Infectious Disease
Advanced Course in Epidemiological Analysis	Epidemiological Evaluation of Vaccines	Practical Pharmacoeconomics
Advanced Stata: Programming and other Techniques to Make Your Life Easier	Factor Analysis & Structural Equation Modelling	Public Health Planning for Hearing Impairment
Cancer Survival: Principles, Methods and Applications	High Throughput Sequencing in Disease Studies	Researching Gender-based Violence: Methods and Meaning
Causal Inference in Epidemiology: Recent Methodological Developments	Infectious Disease Modelling	Statistical Analysis with Missing Data Using Multiple Imputation and Inverse Probability Weighting
Certificate in Pharmacoepidemiology & Pharmacovigilance	Intensive Course in Epidemiology and Medical Statistics	Systematic Reviews and Meta-Analyses of Health Research
Clinical Trials	Introduction to Genetic Epidemiology in the GWAS Era	Tropical Ophthalmology
Diploma in Tropical Medicine & Hygiene	Laboratory Diagnosis of Parasites	Understanding an Eye Health System in Order to Achieve VISION 2020
Diploma in Tropical Nursing	Methods for Addressing Selection Bias in Health Economic Evaluation	
	MSc Modules	

People and resources



Richard Benson, Secretary and Director of Resources and Planning (left) and Andrew Young, Chief Operating Officer (right)



We aim to recruit, manage, develop and retain excellent staff based in the UK and elsewhere to deliver the School's mission. We have also made great progress in improving the School's management and administration.

The School embraces and values the diversity of its staff and student population and seeks to promote equality as an essential element in contribution to the improvement of health worldwide. Our Talent and Educational Development Programme provides a range of training workshops, seminars, online courses and other personal and professional development opportunities for staff across the School.

Our Values

The School seeks to foster and sustain a creative and supportive working environment based upon an ethos of respect and rigorous scientific enquiry.

We are committed to:

- Excellence and creativity
- Maximising synergies between research, education and knowledge translation and innovation
- Sharing expertise to strengthen capacity globally
- Partnerships based on mutual respect and openness
- Equity and diversity
- Financial and environmental sustainability

“The School's success is founded on its committed staff, its collaborators and the synergies that result from these interactions”

We are developing the programme to meet individual training and our Postgraduate Certificate in Learning and Teaching (PGCILT) is accredited by the Higher Education Academy. We support learning and transferable skills development for early career researchers.

The School is an equal opportunities employer, and part of the Athena SWAN award scheme to promote women in Science. In 2013, two faculties secured Bronze departmental awards, in addition to the Bronze Award for the School last year. We are currently working towards achieving Silver awards across the School in 2014.

In October 2013, we appointed four members of staff to the Aurora programme, the leadership development initiative for women, run by the Leadership Foundation for Higher

Education. Aurora aims to enable a wider range of women in academic and professional roles to become future leaders, developing their skills and advancing their institutions.

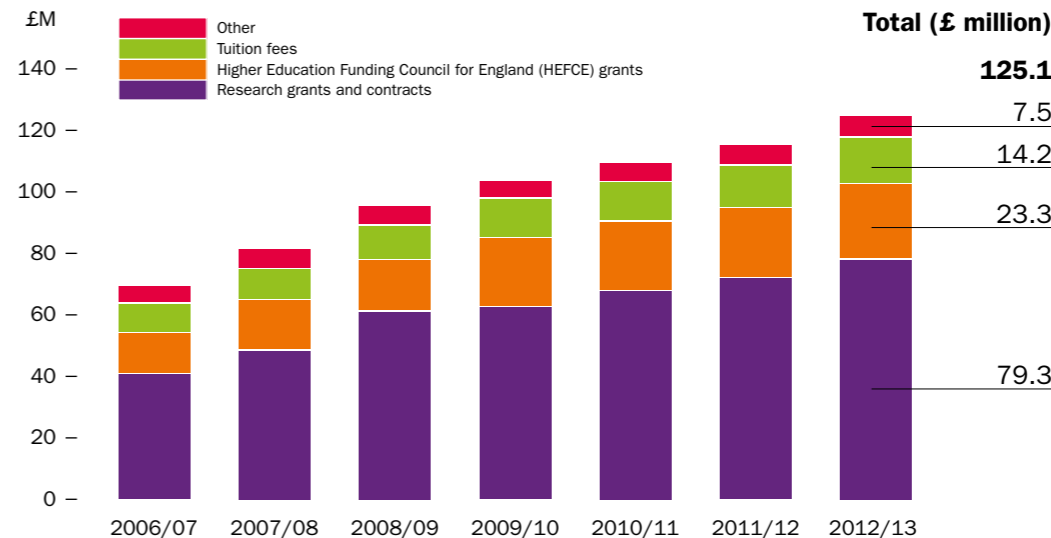
In November, the School was one of the first Higher Education Institutions to be accredited as Living Wage Employers by the Living Wage Foundation. To be accredited, an employer must ensure all directly-employed staff and contractors receive the Living Wage, which is calculated according to the basic cost of living (currently £8.80 in London). This award recognises our commitment to fair pay.

This year, the School joined the Stonewall Diversity Champion programme, Britain's good practice employers' forum on sexual orientation. We will be working with Stonewall and other employers on the programme to ensure that we are a workplace of good practice.

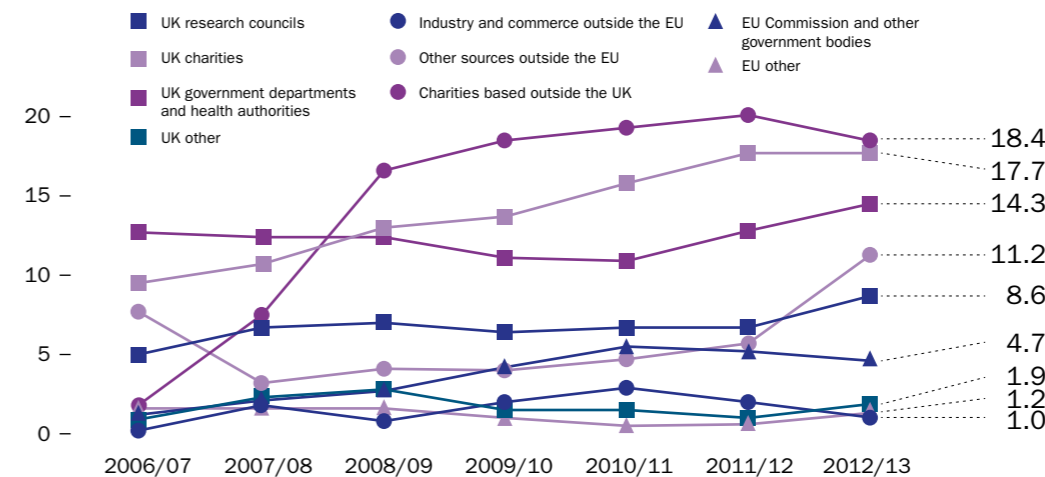
The School is a certified user of the Two Ticks Disability Symbol Scheme, and is committed to employing people with disabilities.



Income from all sources 2006/07 to 2012/13



Research income: grants and contracts



Our strategy 2012-17

The purpose of the Strategy is to provide a framework to guide decisions focused on School-wide priorities over the next five years. The strategy enables the School to:

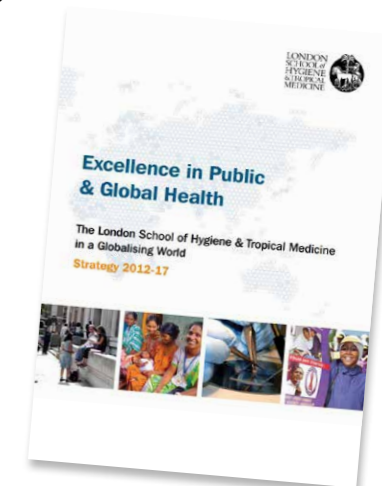
- Identify key areas of development and investment, appointments, research directions and collaborations, education programmes and capital projects
- Frame communication with key stakeholders and audiences

- Prioritise development of facilities and support services to optimise efficiency and effectiveness
- Ensure the School's reputation continues to grow globally, helping us to fulfil our vision and mission

The Strategy document can be downloaded from www.lshtm.ac.uk/aboutus/introducing/mission

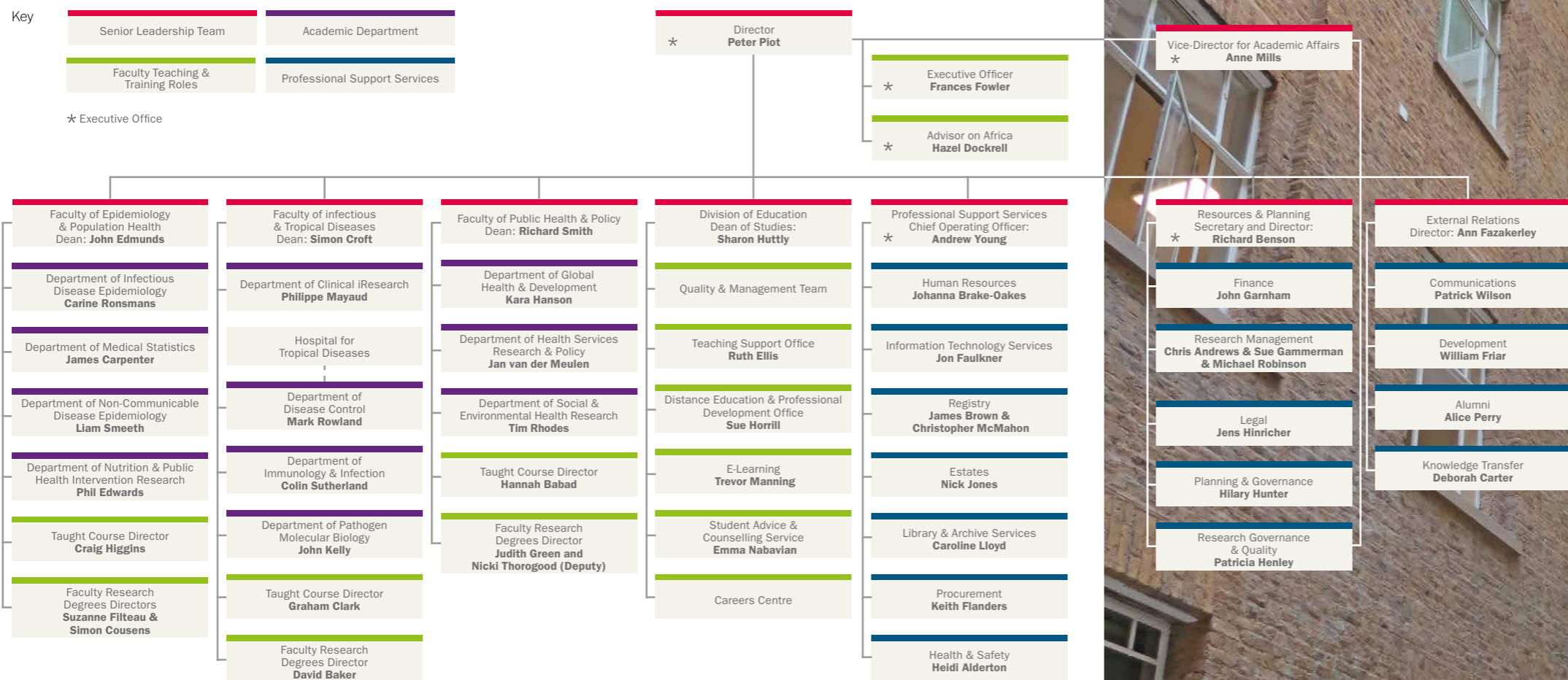
Research income has increased over recent years and represents 63% of our total income, amongst the highest proportion of any UK Higher Education Institution. School staff have been successful in generating research grant income, with an above average success rate for UK research council funding. In addition, the School has a broad portfolio of funders, including large charitable organisations such as the Wellcome Trust and the Bill and Melinda Gates Foundation, the UK Research Council and government departments, the USA's National Institute for Health, the European Union, industry, small charities and individual donors.

The School's research encompasses a spectrum from fundamental laboratory research in infectious diseases and studies of disease causation, through development and assessment of novel interventions and services, to advising on implementation in real life settings of interventions, service and system reforms, and evaluation that informs policy and practice.



Management and governance

Organisational structure from December 2013



Patron
HRH Prince Philip
Duke of Edinburgh KG KT

Honorary Fellows

An Honorary Fellowship is the School's most prestigious honour and is conferred on those people who have rendered exceptional service to the School or have attained exceptional distinction in any of the subjects taught in the School.

- Valerie Beral
- David Bradley
- André Capron
- Jimmy Carter
- Baroness Chalker Of Wallasey
- Manuel Dayrit
- John Robert Evans
- Sir Richard Feachem
- William Foegel
- Tedros Adhanom Ghebreyesus
- Tore Godal
- John Godfrey
- Coluthur Gopalan
- Sir Brian Greenwood
- Demissie Habte
- Donald Henderson
- Ralph Lainson
- Robert Logan
- Adetokunbo Lucas
- Dame Sally Macintyre
- Halfdan Mahler
- Tony McMichael
- David Nabarro
- Sadako Ogata
- Sir Eldryd Parry
- Sir Richard Peto
- K Srinath Reddy
- Amartya Sen
- John Hilary Smith
- Alfred Sommer
- Robin Weiss
- Peter Williams

Council (At 1 December 2013)

Chair: Sir Tim Lankester KCB MA (Camb) MA (Yale)
Deputy Chair: Dr Diana Walford
CBE MA BSc MSc MD FRCP FRCPATH FFPH FRS

Ex-Officio Members

Mr Dino Motti, Chair, Student Representative Council
Dr David Jolliffe CB FRCP (Chairman of Court)
Professor Baron Peter Piot CMG MD PhD FRCP FMedSci (Director)

Appointed by the Secretary of State for Health

Dr Simon Tanner BM MSc MRCP FFPH (to 31.03.13)

Appointed by the Secretary of State for International Development

Dr Andrée Carter PhD FISoSci MCIWEM

Appointed by the University of London
Professor Nicholas Barber BPharm PhD MRPharmS FRSM (to 31.08.13)

Independent Appointees

Mr Kash Chandarana BSc ACA
Ms Ann Grant BA, MSc
Sir Tim Lankester KCB MA (Camb) MA (Yale)
Mr John O'Donnell
Mr Jan Pethick (Honorary Treasurer and Chairman of Planning & Finance Committee)
Mr Sushil Premchand BA, FCA
Mr Jonathan Roper MA (Cantab)
Professor John Stephenson BSc PhD CBiol FSB
Dr Diana Walford CBE MA BSc MSc MD FRCP FRCPATH FFPH

Academic Staff Members

Ms Lynda Clarke BSc MSc
Dr Kara Hanson BA MPhil ScD
Professor John Kelly BSc PhD
Professor Eleanor Riley BSc BVSc PhD
Professor David Ross MA BM BCh MSc PhD DLSHTM
Professor Paul Wilkinson BSc BM BCh MRCP (UK) MSc

Professional Support Staff Members

Mr Dan Arthur BSc

Secretary & Director of Resources & Planning

Mr Richard Benson BA

