46th Topics in Infection

Friday 18 June 2021

Online

This meeting is hosted by the
Royal Society of Tropical Medicine and Hygiene,
with support from Public Health England and Barts Health NHS Trust
CPD points awarded: 5

Session 1

Chair: Gee Yen Shin, Consultant Virologist, University College London Hospitals

10:15 **Welcome**
Gail Davey, President, Royal Society of Tropical Medicine and Hygiene

10:30 **Progress on the Carter Reforms**
Joanne Martin, Professor of Pathology, Queen Mary University of London and National Specialty Advisor for Pathology NHS England and Improvement

11:00 **Recent advances in vaccines for blood-stage malaria**
Simon Draper, Professor of Vaccinology and Translational Medicine, University of Oxford

11:30 **Advances in diagnostic parasitology**
Debbie Nolder, Molecular Lead BMS, PHE Malaria Reference Laboratory & Diagnostic Parasitology Laboratory

12:00 **BREAK**

Session 2

Chair: Rohini Manuel, Consultant Medical Microbiologist, National Infection Service, Public Health England and Epsom & St Helier NHS Trust

13:00 **Overview of the UK Health Security Agency**
Jenny Harries, Chief Executive, UK Health Security Agency

13:30 **Gram-negative infections: what next?**
Colin Brown, Consultant in Infectious Diseases and Medical Microbiology, National Infection Service, Public Health England

14:00 **An update on HTLV**
Graham Taylor, Professor of Human Retrovirology, Imperial College London

14:30 **BREAK**

Session 3

Chair: Dilys Morgan, Consultant in Global Public Health, previously Head of Emerging Infections and Zoonoses, Public Health England

15:00 **Integrated studies on the emergence of zoonoses in urban settings**
Eric Fèvre, Professor of Veterinary Infectious Diseases at the University of Liverpool

15:30 **One Health strategies for surveillance along the fault lines of emerging infectious disease**
Christine Kreuder Johnson, Professor of Epidemiology and Ecosystem Health and Director of the EpiCenter for Disease Dynamics at the One Health Institute, University of California, Davis

16:00 **Thrombotic complications of AZ COVID vaccine**
Marie Scully, Consultant Haematologist, University College London Hospitals

16:30 **Summing up and close**
Tamar Ghosh, Chief Executive, Royal Society of Tropical Medicine and Hygiene

Biographies

Dr Colin Brown, Consultant in Infectious Diseases and Medical Microbiology, National Infection Service, Public Health England

Colin Brown is an Infectious Disease & Medical Microbiology consultant working at Public Health England on a portfolio of antimicrobial resistance (AMR), healthcare-associated infections (HCAI) and global health. His time is currently split between treating patients with clinical infections (including high consequence infectious diseases) at the Royal Free Hospital in London, working on domestic infection policy on healthcare-associated infection and antimicrobial resistance activities as Deputy Director of the HCAI/AMR Division e.g. overseeing PHE collaborative work on Carbapenemase-producing Enterobacterales (CPE), and on global health security supporting several African countries improve their infectious disease diagnostic capabilities including for AMR.

Professor Simon Draper, Professor of Vaccinology and Translational Medicine, University of Oxford

Simon Draper is Professor of Vaccinology and Translational Medicine at the University of Oxford. He was based at the Jenner Institute, Nuffield Department of Medicine from 2005 until Feb 2021 when he moved his laboratory to the Department of Biochemistry. The group's clinical team are based at the University's Centre for Clinical Vaccinology and Tropical Medicine (CCVTM) on the Churchill Hospital site.

The Draper Lab study vaccine-induced immunity, with a particular focus on antibody immunology and human malaria infection. A critical strength of the group is a strong dual focus on preclinical vaccine development in parallel with early-phase clinical vaccine testing and experimental medicine studies. In particular, the group's research interests span: strategies for improved vaccine antigen identification; development of improved vaccine delivery strategies; assessment of quantitative antibody correlates of protective immunity; and assessment of human vaccine-induced antibody responses to guide structure-based immunogen design and to better understand protective mechanisms of immunity.

To-date the group has undertaken 16 proof-of-concept Phase I/II clinical trials assessing novel vaccine delivery platforms and immunisation regimens; developing controlled human malaria infection (CHMI) models for Plasmodium falciparum and P. vivax; and testing novel blood-stage malaria vaccine antigens (PfRH5 for P. falciparum and PvDBP_RII for P. vivax) including the first assessment of PfRH5-based vaccines in the field via collaboration with the Ifakara Health Institute in Bagamoyo, Tanzania. The group has a strong track record of partnering with biotech and pharma, and participation in numerous collaborative programmes with academic and industrial partners, seeking to develop improved vaccines or antibody-based therapeutics.

Professor Eric Fèvre, Professor of Veterinary Infectious Diseases at the University of Liverpool

Eric Fèvre is Professor of Veterinary Infectious Diseases at the Institute of Infection and Global Health (IGH), University of Liverpool and is jointly based at the International Livestock Research Institute, Nairobi, Kenya.

Prof Fèvre manages a range of field-orientated projects researching disease transmission and control at the interface between animals and human beings. His research team, the Zoonotic and Emerging Diseases group (www.zoonotic-diseases.org; Twitter: @ZoonoticDisease) is a grouping of epidemiologists, ecologists, biologists, veterinarians and medical practitioners interested in the biology and control of (re-)emerging diseases. The group conducts field studies to acquire a wider understanding of pathogen epidemiology to inform policy on optimal and cost-effective methods of disease control.

He obtained his BSc in Biology/Geography from the University of Bristol (UK), his MSc in Applied Parasitology and Medical Entomology at the Liverpool School of Tropical Medicine (LSTM) and his PhD in Epidemiology from the University of Edinburgh's Centre for Tropical Veterinary Medicine. He worked for several years on the epidemiology of zoonotic trypanosomiasis in East Africa, before expanding his work to cover a wider range of zoonotic diseases in endemic areas. He held a Wellcome Trust Research Fellowship from 2009-2012. The UK Research Councils, UK DFID, the European Union and the CGIAR Research Program on Agriculture for Nutrition and Health are currently the primary funders of the work in his team.

Prof Fèvre is the Chair the World Health Organization Working Group on zoonotic Neglected Tropical Diseases (zNTDs), is a member of the WHO Expert Committee on Human African Trypanosomiasis and was a member of the WHO Initiative to Estimate the Global Burden of Foodborne Disease (FERG). He is also a member of the Lancet Commission on One Health. In Kenya, he is a member of the National Zoonoses Technical Working Group, the National AMR Technical Working Group and several disease specific task forces.

Dr Jenny Harries OBE, Chief Executive, UK Health Security Agency

Dr Jenny Harries has previously served on the Joint Committee for Vaccination and Immunisation (JCVI) and brings a wealth of public health knowledge and expertise gained from working in the NHS and local government at local, regional and national levels. She played central roles in the UK's response to COVID, Ebola, Zika, monkeypox, MERS and the Novichok attacks.

Career highlights:

- Deputy Chief Medical Officer for England
- Regional Director for the South of England at Public Health England (PHE) and PHE's Deputy Medical Director
- Joint Director of Public Health, for Norfolk County Council and NHS Norfolk and Waveney
- Joint Director of Public Health, NHS Swindon and Swindon Borough Council
- Local Director of Public Health, Monmouthshire Local Health Board and Public Health Consultant Lead for the South East Wales Regional Commissioning Unit
- member of the Joint Committee on Vaccination and Immunisation since 2007
- member of the Expert Advisory Group on the NHS Constitution
- worked in policy, evaluation and clinical roles in Pakistan, Albania, India and New Zealand

Professor Christine Kreuder Johnson, Professor of Epidemiology and Ecosystem Health and Director of the EpiCenter for Disease Dynamics at the One Health Institute, University of California, Davis

Christine K. Johnson is Professor of Epidemiology and Ecosystem Health and Director of the EpiCenter for Disease Dynamics at the One Health Institute, University of California, Davis. She has a PhD in Epidemiology from the University of California, Davis (2003) and VMD degree in Veterinary Medicine from the University of Pennsylvania (1994). Her work is committed to transdisciplinary research to characterize impacts of environmental change on animal and human health, inform preparedness for emerging threats, and guide public policy at the intersection of emerging disease and environmental health.

Professor Johnson's research has pioneered new approaches to characterization of emerging threats and disease dynamics at the animal-human interface in rapidly changing landscapes that constitute "fault lines" for disease emergence, disease spillover and subsequent spread. Her activities also serve pressing research needs at the boundaries of science and policy, such as investigations into impacts of land use and climate change on disease spillover risk, the role of biodiversity in virus host plasticity and emergence risk, and the movement of pathogens in coastal systems. She leads the "EpiCenter for Emerging Infectious Disease Intelligence", one of NIAID's Centers for Emerging Infectious Disease (CREID) to investigate the environment and climate-related drivers for spillover and spread of emerging ebolaviruses, coronaviruses, and arboviruses.

Efforts to pursue challenging research relating environmental change to disease threats, and support science-based decision making and public policy were recognized by receipt of the Distinguished Scholarly Public Service Award in 2017. As faculty, she has developed new curriculum for health professionals and graduate students in One Health, ecosystem health, and epidemiology, and have a well-rounded graduate training program for PhD students and post-doctoral scholars.

Professor Joanne Martin, Professor of Pathology, Queen Mary University of London and National Specialty Advisor for Pathology NHS England and Improvement

Professor Martin qualified Cambridge University and London Hospital Medical College, has a University of London PhD and Masters in Leadership. She has over 130 published papers including Nature group and Science journals and is Professor of Pathology at Queen Mary University London. She has very broad experience in healthcare management including responsibility for research and for the training and

education of over 17,500 staff. She served on the Board of Barts Health NHS Trust. She is an award winning eCPD app designer and co-founder of Biomoti, a drug delivery development company. Her clinical specialist expertise is in the pathology of gastrointestinal motility disorders.

National Clinical Director of Pathology for NHS England April 2013-16, Jo was President of the Royal College of Pathologists from November 2017-2020, and is now National Specialty Advisor for Pathology for NHS England and Improvement.

Dr Debbie Nolder, Molecular Lead BMS, PHE Malaria Reference Laboratory & Diagnostic Parasitology Laboratory.

Dr Debbie Nolder is an HCPC-registered biomedical scientist in the PHE Malaria Reference Laboratory & LSHTM Diagnostic Parasitology Laboratory at the London School of Hygiene & Tropical Medicine and has been working in parasite diagnostics since 1989. Debbie joined LSHTM in 1995 as a PhD student after obtaining her MSc in clinical parasitology (LSHTM / Royal Free Hospital School of Medicine) whilst employed at the PHLS Central Public Health Laboratory, Colindale (now PHE Centre for Infections), as a Clinical Scientist working on the development of immunoassays and molecular diagnostic tests for protozoa associated with HIV infection. Debbie has experience in monoclonal antibody production, mammalian cell culture and the in vitro cultivation of a broad range of protozoa plus extensive experience in molecular- and immunological-based research and diagnostic techniques.

Following a PhD investigating the molecular epidemiology of Leishmania populations belonging to the South American subgenus, Viannia, Debbie joined the PHE Malaria Reference Laboratory & LSHTM Diagnostic Parasitology Laboratory as molecular lead BMS. Debbie has a specialist interest in development, validation and implementation of molecular diagnostic, typing and drug resistance assays for Plasmodium spp., Trypanosoma cruzi (Chagas disease), Acanthamoeba spp. (Acanthamoeba keratitis, AK) and Leishmania spp. infections.

Debbie is co-organiser of the Advance Diagnostic Parasitology MSc module, lectures and runs practical sessions on a number of other MSc modules and short-courses and is a reviewer on parasite diagnostics for a number of journals.

Professor Marie Scully, Consultant Haematologist, University College London Hospitals

Professor Marie Scully is a consultant haematologist at UCLH and Professor of haemostasis and thrombosis at UCL. My particular interests include platelet mediated disorders, specifically, ITP, TTP and aHUS and acquired bleeding and thrombotic conditions. Primary publications include TTP, in particular treatment and clinical subtypes, in conjunction with an understanding of the pathogenesis of the underlying disease. I am clinical lead for the national TTP service, UK TTP forum and patron for the TTP Network. I supervise postgraduate doctorates and am involved in undergraduate and postgraduate teaching and regularly reviews for haematology and related medical journals.