

# The UK Public Health Rapid Support Team: A Novel Programme Integrating Outbreak Response, Operational Research, and Capacity Building

Hilary Bower, Benedict Gannon, Thom Banks, Emma Blake, Jason Busuttill, Katie Carmichael, Bianca D'Souza, Neil Greenberg, Martin Hibberd, Peter Horby, Emilio Hornsey, Amelia Ionescu, Susan Ismaeel, Anwen Jones, Victoria King, Matt Knight, Anna Kuehne, Helen Maguire, Fanny Procureur, Olivier Le Polain, Hana Rohan, Mark Rush, Alex Salam, Maria Saavedra-Campos, Sonal Shah, Susie Singleton, Eric Vincent, Thomas Waite, Laith Yakob, Brian McCloskey, Jimmy Whitworth, Daniel G. Bausch

## UK-PHRST MANDATE

The 2013-16 epidemic of Ebola virus disease underscored the shortcomings of the international community to both respond to outbreaks and conduct critical research in complex humanitarian crises. To address these concerns, the UK Government has formed the UK Public Health Rapid Support Team (UK-PHRST). The UK-PHRST is a collaboration between Public Health England and the London School of Hygiene & Tropical Medicine with the University of Oxford and Kings College London as academic partners. The UK-PHRST has a novel triple mandate to work in low- and middle-income countries (LMICs) to:

- Respond to outbreaks
- Conduct innovative operational research during and between outbreaks to generate evidence on best practices
- Build LMIC and regional capacity for outbreak response

## MULTI-DISCIPLINARY DEPLOYABLE TEAM

The core deployable team consists of

- Epidemiologists
- Microbiologists
- Clinical researchers
- Social scientists
- Data scientists
- Infection prevention and control experts
- Field logisticians



### Plague

A UK-PHRST team of 2 epidemiologists and a clinician are currently in Madagascar assisting with surveillance and clinical management to tackle the ongoing plague (*Yersinia pestis*) outbreak.

## OPERATIONAL RESEARCH

The UK-PHRST is committed to performing operational research to improve outbreak response in LMICs. These studies conducted in between outbreaks as well as rapid implementation of studies during deployment. A rapid ethical approval mechanism has been developed in collaboration with the London School of Hygiene and Tropical Medicine Ethics Committee to fast-track ethical review and approval to enable an agile in-field research response by the UK-PHRST.



UK-PHRST emits regular open research calls to initiate and stimulate outbreak response-related research that supports work from within and external to the UK-PHRST. Currently this funding mechanism supports nine research projects spanning a comprehensive set of disciplines integral to effective outbreak response, including anthropology, clinical management, clinical research, epidemiology, microbiology, psychology, sociology and water, sanitation, and hygiene.

## UK-PHRST RESEARCH PROGRAMME 2016-2017\*

- Impact of psychological intervention using trained peers to treat Ebola centre workers with anxiety and depression in Sierra Leone
- Building readiness for real-time pathogen sequencing for surveillance and control of infectious disease outbreaks
- An evaluation of syndromic surveillance and clinical characterisation of ecology and evolution of infectious disease syndromes in refugee camps
- Patient data quality improvement in epidemics: An audit of West African Ebola data
- Rapid needs appraisal to inform clinical research priorities in response to (re-) emerging outbreaks
- Effect of acute illness on contact patterns, Malawi
- Study of the aetiology of severe undifferentiated febrile illness outbreaks in Sudan
- How should anthropologists engage with future disease outbreaks?: Perspectives from anthropologists and humanitarians involved in recent outbreaks
- Establishing real-time evaluations of WASH on disease outbreaks in emergency settings

\*Email [UKPHRST@phe.gov.uk](mailto:UKPHRST@phe.gov.uk) or talk to presenter for project details.



UK-PHRST - Epidemiology in action

## CAPACITY BUILDING

Integral to UK-PHRST's remit is the provision of capacity building to increase the effective outbreak response in LMICs. We are establishing a regional hub for West Africa that will provide a focus for capacity building exercises and as a research facility.



Connaught hospital, Freetown

We are placing a mobile container laboratory in Freetown that provides the UK-PHRST with a base to train African microbiologists, conduct relevant laboratory research, and respond to outbreaks in the region. UK-PHRST is also assisting with the delivery of a Masters in Public Health at the College of Medicine and Allied Health Sciences at the University of Sierra Leone in Freetown.



Self-sufficient mobile  
container laboratory

Biological safety  
cabinet in laboratory

## OUTBREAK RESPONSE IN 48 HOURS

### Rapid deployment is absolutely key to the successful management of disease outbreaks

One of the primary bottlenecks in tackling outbreaks is logistical delays in deploying teams to the field. All of our core team have undergone pre-training to qualify them to WHO standards to allow their rapid deployment into the field within 48 notice. This mechanism has been tested and in all 4 deployments in 2017 UK-PHRST members have been on a plane within the 48 hour target time.

To support the core team a reserve cadre is being formed to increase the operational and surge capacity of the UK-PHRST. Through agreement with their current employers, these reserves will be on call for the UK-PHRST while maintaining their fulltime jobs. Reserves complete the same core UK-PHRST training regime to ensure their operational readiness.



Freetown, post-  
flooding August 2017

## UK-PHRST IN ACTION – SIERRA LEONE

The UK-PHRST can respond to humanitarian disasters where there is an increased risk of infectious disease outbreaks. The disastrous flooding and landslides in Freetown, Sierra Leone, in August 2017 resulted in over 800 deaths. The UK-PHRST was deployed after a direct request from the Government of Sierra Leone. A UK-PHRST team of epidemiologists, microbiologists and a field logistician supported extended surveillance and case investigation for water-borne disease.



Enteric bacteriology laboratory  
set-up with UK-PHRST support  
at Connaught Hospital, Freetown

Part of the Sierra Leone operation was the provision of an enteric bacteriology laboratory facility in Connaught Hospital. UK-PHRST is initiating work in this newly refurbished laboratory to train local laboratory staff to provide the bacteriology service, and is also collaborating in a research project to determine carriage rates of gastrointestinal pathogens.

## UK-PHRST DEPLOYMENTS 2017

- Ethiopia : Cholera
- Nigeria: Group C meningitis
- Sierra Leone: Water-borne disease surveillance
- Madagascar: Pneumonic plague

