

Partnering for Outbreak Preparedness and Response: Research and Capacity Building Collaboration in East Africa

Meeting hosted by the Uganda Virus Research Institute and the United Kingdom Public Health Rapid Support Team

February 27th – 28th 2019

Entebbe, Uganda

MEETING REPORT





Acknowledgements

Host Institutions

The Uganda Virus Research Institute (UVRI), with many regional and international partners, has been on the forefront combatting new and re-emerging disease threats in the East African region since its inception in 1936 and is currently active both in diagnostic services and research. In addition, based at UVRI, MUII-plus (the Makerere University-UVRI Centre of Excellence for Infection and Immunity Research and Training) supports capacity development through PhD training in this area.

The UK Public Health Rapid Support Team (UK-PHRST), is a collaboration between Public Health England and the London School of Hygiene and Tropical Medicine, with academic partners at the University of Oxford and King's College London. Funded by the UK Department of Health and Social Care, the UK-PHRST is the primary arm of the UK Government to provide and coordinate the UK's public health response to outbreaks in Low- and Middle-Income Countries. This collaboration has a tripartite remit: to rapidly investigate and respond to disease outbreaks in LMICs on the invitation of host nations; to conduct rigorous research to aid epidemic preparedness and response; and to build in-country capacity in LMICs for improved rapid national responses to disease outbreaks.

Plenary Speakers

Merawi Aragaw, Africa CDC

Zabulon Yoti, WHO Health Emergencies Programme

Presenters from institutions based in Uganda

Alison Elliot, Makerere University/UVRI Centre of Excellence in Infection and Immunity Research and Training (MUII)

Pontiano Kaleebu, UVRI

Hannah Kibuuka, Makerere University Walter Reed Project (MUWRP)

Ben Kikairwe, UVRI

Julius Lutwama, UVRI

Issa Makumbi, Uganda MoH Public Health Emergency Operations Centre

Juliet Mwanga, MSF/Epicentre Mbarara Research Centre

Chima Ohuabunwo, AFENET

Godfrey Pimundu, Uganda Central Public Health Laboratories (CPHL)

Presenters from institutions based in Kenya

Bernard Bett, International Livestock Research Institute (ILRI)

James Nokes, KEMRI-Wellcome

Presenter from institutions based in Tanzania

Esther Ndagaya, National Institute of Medical Research (NIMR)

Presenter from institutions based in Malawi

Eunice Chakhumata, Public Health Institute of Malawi



Presenters from institutions based in Sudan

Babiker Ahmed Ali Magboul, Health Emergency and Epidemics Control Directorate, MoH

Maowia Mukhtar, Bioscience Research Institute, Ibn Sina University

Presenters from institutions based in the UK

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Ben Gannon, UK-PHRST

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Special thanks to The East African Consortium for Clinical Research who also contributed to the delivery of this meeting. This European & Developing Countries Clinical Trials Partnership (EDCTP) funded project with its secretariat at UVRI aims to build capacity for internationally recognized research in the East Africa region.

Department of Health and Social Care Disclaimer

The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health and Social Care. The UK Public Health Rapid Support Team, funded by UK aid from the Department of Health and Social Care, is a partnership between Public Health England (PHE) and the London School of Hygiene & Tropical Medicine (LSHTM). University of Oxford and King's College London are academic partners.

Report dated: 12th March 2019



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Partnering for Outbreak Preparedness and Response: Research and Capacity Building Collaboration in East Africa

Introduction

As important as the rapid response to disease outbreaks and natural disasters may be, simply responding to each event is insufficient. There is also a critical need for learning, for research before, during, and after each catastrophic outbreak to better understand the causes and how best to respond the next time. Most important of all is to ensure that the knowledge gained through outbreak response and research translates into building capacity within affected countries and regions.

In late 2018, the UK-PHRST initiated discussions on a workshop or conference in East Africa as part of their strategy to develop opportunities for research and capacity building. UVRI were identified at an early stage as a strong potential partner for this event due to their excellence as a research center, strong reputation in the region, and good preexisting relationship with LSHTM.

The meeting aimed to engage and enhance collaboration between stakeholders involved in outbreak preparedness, response, research and capacity building in the East African Region through dialogue and feedback from the diverse attendees.

Representatives from governments and organisations working in East Africa interested in collaborating to further enhance research and capacity relative to outbreak preparedness and response in Africa were invited to attend. The meeting was jointly organized by two institutions, the Uganda Virus Research Institute (UVRI) and the UK Public Health Rapid Support Team (UK-PH RST).



Meeting Summary

The meeting commenced with a welcome from Professor Pontiano Kaleebu, Director of the Uganda Virus Research Institute and Professor Daniel Bausch, Director of the UK Public Health Rapid Support Team. Both provided a brief overview of these host institutions. Professor Kaleebu called for the meeting and subsequent outbreak work to foster the development of local and international partnerships. Professor Bausch presented the tripartite approach of the UK-PH RST (response, research and capacity building) and called for further discussion around the challenges of achieving these three goals simultaneously.



Plenary talks were provided by Dr. Zabulon Yoti (WHO AFRO Technical Coordinator, WHO Health Emergencies Programme) and Dr. Merawi Aragaw (Medical Epidemiologist, Africa CDC) on day 1 and day 2 respectively. Key challenges highlighted in both talks included, growing demands on already weak health systems, challenges of working in conflict affected areas, and limited investment in research, documentation and application of lessons learnt.

Dr. Yoti provided an overview of health emergencies and response capacities in the African Region. He stressed that there are still limited IHR core capacities within African nations (as indicated by average JEE scores). To address current challenges he encouraged, sharing of global, regional and national resources; the development of networks such as the emerging dangerous pathogens and lab network (EDPLN); and adoption of a multi-sectoral (one Health) approach to preparedness and response. Additionally Dr. Yoti emphasised that 'response is incomplete without research', that a research agenda needs to routinely be included as part of preparedness and that economic analyses of the impacts of outbreaks is key.

Dr. Aragaw presented the seven aspirations of the African Union's Agenda 2063 which included the development of integrated and comprehensive health systems across the continent. Dr Aragaw also encouraged nations to focus on developing their IHR core capacities, National Public Health Institutions and to explore multi-sectoral, regional partnerships wherever possible.

Invited speakers from institutions based in Uganda, Kenya, Tanzania, Malawi, Sudan and the UK provided presentations on their work and the work of their institution, focussing on outbreak preparedness and

response, research, and capacity building. These presentations provided an opportunity for country representatives to discuss ongoing challenges, to share lessons learnt and identify potential collaborations.

Further opportunity for discussion and collaboration was presented through three breakout sessions where groups were tasked with addressing the following questions/discussion points:

1. What capacities are needed for even more effective outbreak preparedness and response?
2. What are the research gaps and how can we work together to fill them?
3. Exploring opportunities for capacity building collaborations in the region.

These three areas also worked as a thematic focus for the discussions and presentations through the two days and this report therefore breaks down key meeting outcomes under these three headings.





Capacities needed for more effective outbreak preparedness and response

“Disease doesn’t respect borders as such we need resources that can also move across borders; we need a regional and sub-regional approach on outbreak response and disease control.” Dr Zabulon Yoti, WHO Health Emergencies Programme

Presentations from country representatives highlighted significant capacity for effective outbreak preparedness and response within the East African Region. However, as presented by Dr Yoti, no one nation in the East African Region had attained all recommended IHR core capacities. In addition to strengthening in-country capacity, the sharing of regional resources and capacities was welcomed and encouraged. Through networks and partnerships, the achievements of individual nations or institutions can be harnessed to strengthen the capacity of the region.

On-going deaths of healthcare workers through infection with infectious diseases during outbreaks was identified as a reminder for the need to strengthen the knowledge and skill set of front-line health workers, particularly community workers. Examples of SMS based data collection and reporting systems were described (e.g. Ugandan SMS system for reporting suspected cases of infectious diseases to their Public Health Emergency Operations Centre). Development of similar systems in the region were encouraged to enhance information sharing from community to district and national levels. Such SMS systems were also identified as potential vehicles to improve community sensitisation and communication with community health workers (e.g. a means of sending alerts and/or case definitions).

Standardisation of tools for data capture and reporting and adoption of a multi-sectoral (One Health) approach to preparedness and response were seen as essential to promoting effective regional information sharing. Additionally, the promotion of an evidence-based culture where a research agenda is routinely part of preparedness and response plans and the sharing of research protocols, practices and findings were also identified as key to improving the Region’s ability to learn from each outbreak.

Sustained political will and funding commitment were seen as lacking and fundamental to achieving the IHR goals for the Region. Participants called for ring fencing of government funds for health and specifically for outbreak related research and capacity building.

The Support to Pandemic Preparedness in the East African Community (EAC) region project, supported by GIZ¹ was highlighted. This project is expected to fund development of labs and cross border activities including data systems. Electronic Integrated Disease Surveillance and Response (eIDSR) systems were also identified as platforms that could be leveraged to enhance disease outbreak detection and response processes.

¹ GIZ. Better preparedness in the East African Community region. [Online]. [12 March 2019]. <https://www.giz.de/en/worldwide/69568.html>



Networks named as examples of good practice included: AFENET¹, EDPLN², EMPHNET³, GOARN⁴ and PANDORA⁵. Brief descriptions of these and other emerging networks can be found in the resources section of this report. While a number of current strong networks and platforms for cross border collaboration were identified, there appeared to be a gap for some participants in how to access these networks or implement their guidance. A need for a clear mechanism for hosting information on disease outbreaks was called for.

Research gaps and how can we work together to fill them

The key is to integrate research into the response planning so that the research can be carried out alongside the response. Otherwise “the outbreak is over before the research has begun” Hannah Kibuuka, Makerere University Walter Reed Project

Research gaps identified through group discussions and individual presentations included inadequate domestic funding and limited external funding for research during outbreaks largely based on historic undervaluing of the role of research during outbreaks. In the same vein, a lack of sufficient clinical research skills and the limited scope of current outbreak related research in the Region were identified. Significant delays in ethical approval processes were seen as a critical barrier to timely research in outbreak settings.

More research on the epidemiology of outbreaks, to allow better description of outbreaks (where is it from, is it evolving, is there genetic divergence, what are the animal reservoirs) along with focused research on outbreak prevention was also seen as lacking.

To address these gaps, the need to develop protocols in advance of outbreaks, to allow for rapid onset of research during outbreaks was repeatedly stated by meeting participants. Development of new mechanisms for cross border protocol/ethics approval and promotion of existing mechanisms that are already in place that allow this were also called for. Regular dialogue with local ethical bodies was encouraged to establish the particular elements that are needed in protocols and to give ethical bodies a better understanding of the time constraints and needs associated with research during an outbreak. Mention was also given to the use of retrospective ethical approvals for research on samples collected for clinical purposes during an outbreak because of the public health importance of the research.

The need to expand thinking around outbreak related research beyond a narrow perspective of medical counter measures (such as vaccines, medicines and diagnostics) was supported with many reporting a need for health systems, social science, mental health and community engagement based research. Adoption of a multisectoral (One Health) approach to research with integration of animal and human surveillance tools was seen as essential as so many of outbreak diseases are zoonoses.

¹ AFENET: African Field Epidemiology Network

² EDPLN: WHO Emerging and Dangerous Pathogens Laboratory Network

³ EMPHNET: The Eastern Mediterranean Public Health Network

⁴ GOARN: Global Outbreak Alert and Response Network

⁵ PANDORA: Pan African Network for Rapid Research, Response, Relief and Preparedness for Infectious Disease Epidemics

A gap in training on grant and research proposal writing in the region was identified. Partnerships to facilitate these trainings were also identified – for example UK-PHRST has capacity to run grant writing workshops and is developing plans to do this in other regions both directly and in partnership with the Clinical Research Emerging Disease and Outbreaks (CREDO) courses.

Participants supported advocacy for research funding to be included as standard practice in outbreak response to ensure funds are protected and made available by funders for rapid research during disease outbreaks.

Exploring opportunities for capacity building collaborations in the region

Discussions here were broadly in terms of the system, the institution and individual training. Meeting participants also spoke about the opportunities for discipline focused workshops in the region to develop their expertise.

A regional approach was encouraged through use of existing centres of excellence for research, surveillance and response. Development of exchange programmes, fellowships and scholarships with these centres were recommended as opportunities to engage with and utilise pre-existing expertise to ensure this capacity is shared across borders. Emphasis was also placed on a need for joint grant applications to capture different expertise and ensure training takes places at regional level.

Partnerships between institutions were seen as key with the understanding that no one institution can cover all areas of expertise. Stakeholder engagements through similar meetings were encouraged with the inclusion of the private sector, communities, ethics committees and governments as appropriate.

A long term approach to building capacity through education systems (for example developing grant/proposal writing skills) was seen as essential. Equally, use of pre-existing data to build expertise and knowledge in data management and analysis was recommended.

Other opportunities for capacity building identified included: engagement with private sector to increase capacity to deliver training during outbreaks; replicating successful models from one region/country to others; and ensuring a focus on research methods and multi-disciplinary approaches.





Recommendations and next steps

The emerging theme from the meeting was the need for coordinated cross border collaboration on outbreak response, preparedness, research and capacity building. It was noted that in some cases this does already work well and the emphasis should be on utilising strong pre-existing networks such as WHO AFRO and Africa CDC to further strengthen cross-regional collaboration. There were a number of recommendations made to further strengthen these networks and partnerships, to ensure research becomes further embedded in outbreak response. These included:

- UK PHRST working with Africa CDC to expand their mapping of expertise to cover research and capacity building.
- UK PHRST to explore opportunities to work with Africa CDC and other regional institutions to develop mechanisms for cross border protocol/ethics approval and promotion of mechanisms that are already in place for this.
- Research institutions working within East Africa like UVRI to develop easily adaptable pre-approved protocols that can be utilised for outbreak based research.
- Agencies such as WHO AFRO and Africa CDC need to advocate for ring-fencing of resources (both financial and human) to facilitate rapid onset of research during disease outbreaks.
- Existing centres of excellence should be utilised to promote further training through exchange programmes, scholarships and fellowships.
- Identify groups/institutions who can develop international intellectual property and information sharing frameworks for sharing data relating to new/remerging infections, samples or new technology.

The meeting provided a great opportunity for the UK-PHRST and UVRI to come together and identify areas of cross over and potential collaboration between the two organisations as well as other partners in the region. Reflecting on the recommendations above and the meeting in general there seems a role for the UK-PHRST to provide technical support, and expertise in the region. This would need to build on and compliment the considerable expertise of pre-existing groups and could be delivered through a number of more advanced workshops focused on key areas, for example, grant writing, protocol development, data analytics, near-patient genome sequencing in outbreaks, clinical research and social science research. The UK-PHRST will work with partners identified through the meeting to develop this approach over the coming months.

“Look beyond false boundaries – threat to one is a threat to all – partnerships are key.” Professor Pontiano Kaleebu, Director of the Uganda Virus Research Institute



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Final agenda

Day 1 27th February

| TIME | SESSION | SPEAKER OR LEAD |
|-------|---|---|
| 9:00 | Welcoming Remarks and Meeting Objectives | Pontiano Kaleebu, Director UVRI Daniel Bausch, Director UK-PHRST |
| 9:20 | Plenary Speaker I | Zabulon Yoti, WHO AFRO Regional Office |
| 10:00 | Presentation 1: MoH Uganda | Issa Makumbi Head, Public Health Emergency Operations Centre |
| 10:15 | Presentation 2: Uganda CPHL | Godfrey Pimundu |
| 10:30 | <i>Coffee break</i> | |
| 11:00 | Presentation 3 UVRI | Julius Lutwama Head of department, Arbovirology and Emerging and Re-emerging Infections |
| 11:15 | Presentation 4: MRC/Glasgow | Emma Thompson, Ana Filipe, David Robertson MRC, University of Glasgow Centre for Virus Research |
| 11:30 | Presentation 5: MSF Uganda | Juliet Mwanga Director, MSF/Epicentre Mbarara Research Centre |
| 11:45 | Presentation 6: AFENET | Chima Oluabunwo Director of Programs |
| 12:00 | Overview and outbreak response | Daniel Bausch |
| 12:15 | Operational Research and Capacity Building | Jimmy Whitworth |
| 12:30 | Laboratory Research and Support | Ben Gannon |
| 12:45 | <i>Lunch</i> | |
| 13:45 | Speakers from Kenya | James Nokes, KEMRI-Wellcome, Kilifi Bernard Bett, ILRI, Nairobi |
| 14:15 | Speakers from Sudan | Babiker Ahmed Ali Magboul, Health Emergency and Epidemics Control Directorate, Ministry of Health Maowia Mukhtar, Bioscience Research Institute, Ibn Sina University |
| 14:30 | Breakout Groups I: What capacities are needed for even more effective outbreak preparedness and response? | Facilitated small group discussions Each group elects chair and rapporteur |
| 15:30 | <i>Tea break</i> | |
| 16:00 | Plenary breakout reports and discussion | Rapporteurs and Jimmy Whitworth |
| 17:00 | Evening reception and dinner | |



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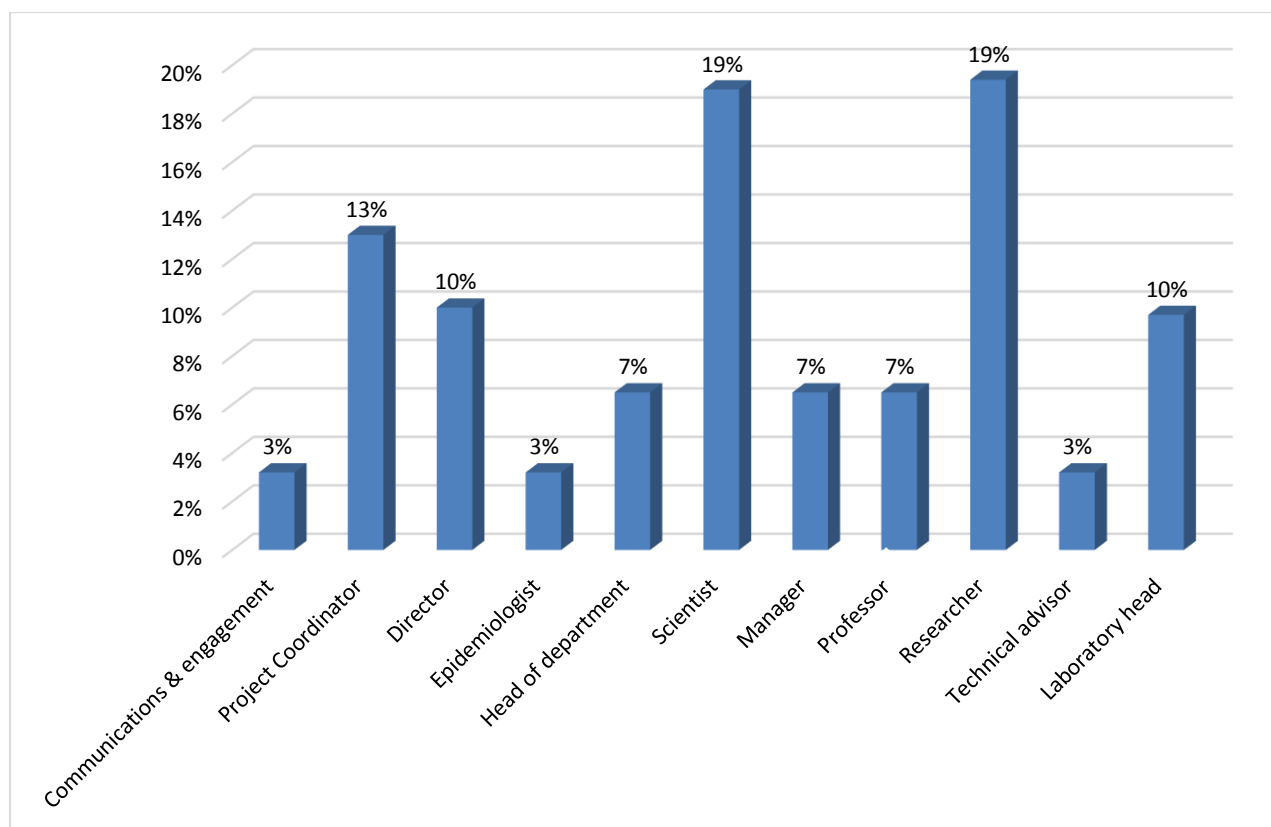


Day 2 28th February

| TIME | SESSION | SPEAKER OR LEAD |
|-------|---|--|
| 9.00 | Review of Day 1 | Jimmy Whitworth, UK-PHRST |
| 9:20 | Plenary Speaker II | Merawi Aragaw, Africa CDC |
| 10:00 | Speaker from Tanzania | Esther Ndagaya, NIMR |
| 10.15 | Speaker from Malawi | Eunice Chakhumata, Public Health Institute of Malawi |
| 10:30 | Coffee break | |
| 11.00 | Speaker from MUWRP (Uganda) | Hannah Kibuuka Executive Director MUWRP |
| 11:15 | Breakout Groups II: What are the research gaps and how can we work together to fill them? | Facilitated small group discussions. Each group elects chair and rapporteur. |
| 12:00 | Plenary breakout reports and discussion | Rapporteurs and Jimmy Whitworth |
| 13:00 | Lunch | |
| 14:00 | Breakout Groups III: Exploring opportunities for capacity building collaborations in the region | Facilitated small group discussions. Each group elects chair and rapporteur. |
| 14:45 | Plenary breakout reports and discussion | Rapporteurs and Jimmy Whitworth |
| 15:45 | Tea Break | |
| 16:15 | Discussion and Wrap-up | Ben Kikairwe and Dan Bausch |
| 16:50 | Closure of Meeting | Pontiano Kaleebu |

M&E feedback

Table 1: Breakdown of meeting participants by profession



Quotes from meeting participants on learning and collaborations fostered during this meeting

"Exploring sequencing and bioinformatics links between CVR Glasgow, UVRI and KEMRI-WT - two way visits planned."

"I discussed with Africa CDC the opportunity of working with countries to develop disease risk maps."

"I am leading a new ILRI/BMZ grant in Uganda and Kenya which includes RVF, AMR, and disease surveillance at slaughter, and I was able to make contacts that I will invite to the official kick-off/stakeholder engagement event."

"I hope to get in touch with contacts I've acquired, share work and experiences with each other and harness opportunities available with them and vice-versa."

"Networks available were pointed out by the various break out groups and there was exposure to what different groups are working on in the region that opened possibility for contact the right people for various



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collaborations for Research and training. This will include, placements, inter-institution exchange programs, joint grant writing and research implementation.”

“We agreed for future collaboration between Sudan and Public Health England.”

“Moving forward, we will make research to be one of the mission activities for our response team, we will partner with research groups/institutes, and plan to set a unit for research under the Emergency Preparedness and Response Division.”

“Will work with the scientists and advance advocacy across a wide spectrum of stakeholders to build their capacity in epidemiology preparedness.”

“Supporting multi-national cross border mechanism for joint actions in prevention, preparedness and response including resource mapping and sharing.”



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Resources

Below are list of some networks and fellowship programme highlighted during this meeting.

Established Networks

African Field Epidemiology Network (AFENET)

AFENET is a non-profit networking and service alliance of Field Epidemiology (and Laboratory) Training Programs (FELTPs), and other applied epidemiology training programs.

<http://www.afenet.net>

African Public Health Laboratory Network (APHLN) ListServ

Launched by The African Society for Laboratory Medicine with support from the US Centers for Disease Control and Prevention and the Association of Public Health Laboratories. The purpose of APHLN ListServ is to facilitate discussions and information sharing among national laboratory directors and ministry of health representatives responsible for laboratory services in their country or their designee/s.

<http://www.aslm.org/what-we-do/aphln/aphln-listserv/>

The East African Consortium for Clinical Research (EACCR)

EACCR is a capacity building Network comprising of 23 institutions from 6 countries in East Africa and 8 northern partner institutions from 5 northern countries and is funded by the European & Developing Countries Clinical Trials Partnership (EDCTP).

<http://eaccr.org/>

WHO Emerging and Dangerous Pathogens Laboratory Network (EDPLN)

EDPLN is made up of global and regional EDPLN networks of high security human and veterinary diagnostic laboratories. The network contributes to outbreak response and preparedness as well as rapid development of diagnostic assays for emerging and infectious pathogens globally.

<https://www.who.int/csr/bioriskreduction/laboratorynetwork/en>

Global Outbreak Alert and Response Network (GOARN)

GOARN is a collaboration of existing institutions and networks, constantly alert and ready to respond. The network pools human and technical resources for rapid identification, confirmation and response to outbreaks of international importance.

https://www.who.int/ihr/alert_and_response/outbreak-network/en

Pan African Network for Rapid Research, Response, Relief and Preparedness for Infectious Disease Epidemics (PANDORA)

This multi-disciplinary consortium aims to develop outbreak rapid response teams for four Africa regions with 48-72 hours of a declared epidemic. Another goal is to develop the capacity for emerging infectious disease research that can be conducted both during an epidemic and also in the inter-epidemic period.

<http://www.glopid-r.org/clinical-trial-network/pandora-pan-african-network-for-rapid-research-response-relief-and-preparedness-for-infectious-diseases-epidemics>



plus



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Tropical Diseases Modelling Network (TModNet)

A network for mathematical modellers and their collaborators based in the tropics and working on tropical infectious diseases. Its aim is to provide a forum to build mathematical modelling capacity in the developing world in a self-sufficient way by exploiting the pre-existing structure of the network members.

<http://www.tdmod.net/>

Networks in Development

East Africa Public Health Laboratory Networking Project (EAPHLNP)

The East Africa Public Health Laboratory Networking Project (EAPHLNP) is a World Bank-funded project that is being implemented by the EAC Partner States in collaboration with the East African Community Secretariat, the East Central and Southern Africa Health Community, the US Centres for Disease Prevention and Control and the World Health Organization. The objective of the project is “to establish a network of efficient, high quality, accessible public health laboratories for the diagnosis and surveillance of Tuberculosis and other communicable diseases”.

<https://www.eac.int/health/disease-prevention/east-africa-public-health-laboratory-networking-project>

Regional Integrated Surveillance and Laboratory Networks (RISLNET)

This network is being developed by Arica CDC. The purpose of the network is to improve surveillance, control, or elimination of high-priority endemic or neglected conditions, leverage surveillance and laboratory networks already operating in the region including public and private entities as well as foundations and universities. It aims to harness the public health assets that exist in each Africa region and support the Africa CDC Regional Collaborating Centers.

<http://africacdc.org/about/africa-cdc-rislnet>

Fellowship Programme

GeMVi Research Fellowships

- 3 types: Sequencing; Bioinformatics; Predictive modelling
- Duration - 3 to 9 months
- For established scientists (not MSc / PhD programme)
- Placements - Warwick, KWTRP, UVRI/Makerere, KCRI, others
- Funding - GBP 10-20,000 stipend, travel, resource

More information available at: <http://kemri-wellcome.org/gemvi> or <http://warwick.ac.uk/gemvi>

For more information on the work of the UK-PHRST, visit: <https://www.lshtm.ac.uk/UKPHRST>

For more information on the work of the UVRI and MUI, visit: <http://www.uvri.go.ug>