

Ebolavirus outbreak in West Africa – Portuguese laboratory response overview

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The Ebola outbreak in West Africa was the largest and most complex outbreak since the virus was discovered in 1976. First cases were notified in March of 2014 and currently cases are still being reported in the affected countries.

To respond to the epidemic of Ebola virus, Portugal created a coordination committee where the National Institute of Health, through the Emergency Response and Biopreparedness Unit (UREB), participated integrating the “Platform Response to Ebola Virus Disease”.

This unit is the national reference laboratory for biological events or catastrophes and has skilled professionals, know-how, BSL-3 facilities, capacity to work 24h/7d and trained human resources to increase lab capacity in emergency situations. The laboratory diagnosis capacity includes the detection of bacteria, virus and toxins, which are considered bioterrorism agents, using Microbiology, Immunology and Molecular Biology techniques. In order to ensure quick and reliable results, a laboratory algorithm was developed taking in account the available human and technical resources. UREB also participates regularly in International External Quality Assessments, training courses and simulation exercises.

Although Portugal doesn't have a BSL-4 facility, the participation in European projects as QUANDHIP, allowed the upgrade of Biosafety procedures, technical skills and the use of a glove container for samples inactivation permitting the analysis of suspected samples, avoiding the need to send suspected samples to abroad.

In Portugal 15 samples from suspected cases concerning patients who were traveling from African countries were received at UREB. All samples were negative for Ebola virus, and the differential diagnosis was performed in parallel which includes the detection of *Plasmodium* spp., Marburg and Lassa virus. Forty percent of suspected cases were positive for *Plasmodium falciparum*.

The algorithm of laboratory procedures for samples suspected to Ebola virus it was well implemented and was several times tested through the participation in simulation exercises. The communication of the results to the competent authorities occurred in 4-5h from the reception of the sample in the laboratory.

The experience gained and work accomplished enabled a quick and effective laboratory response and permitted to increase training actions, BSL-3 facility upgrading, development of national guidelines and establish an agreement with European reference BSL-4 laboratories for additional tests.