
Diagnostics-In-A-Suitcase for Ebola



Researchers are currently developing a lab in a suitcase that can rapidly detect Ebola virus on the spot.

The Diagnostics-in-a-Suitcase is the brainchild of Dr. Ahmed Abd El Wahed, a scientist in the Unit of Infection Models at the German Primate Center (DPZ) in Gottingen, Germany. The portable lab contains all the necessary equipment and reagents that can detect the Ebola virus within fifteen minutes.

According to the World Health Organization (WHO), there are 20,000 confirmed, probable and suspected cases of Ebola in Guinea, Liberia and Sierra Leone. There have already been 8000 deaths during the recent Ebola outbreak. The portable labs are set to go on field trials in Ebola centres in Guinea, West Africa where Ebola cases are still up and down, with no identifiable downward trend.

At this point in time, lab tests for Ebola are conducted by using a technique called real-time polymerase chain reaction (PCR). Despite the fact that PCR machines are not that big, they are still unsuitable for remote locations where there is no electricity and no refrigeration. When using PCR, Ebola samples have to be transported to remote locations which results in delays in the outbreak control process.

The portable lab uses the Recombinase Polymerase Amplification (RPA) technology to detect the Ebola virus. This technique is as sensitive as PCR but works much faster. In addition, it can operate at constant temperatures and does not require additional rapid heat-cycling equipment. Also, the reagents used in RPA tests are stable in dried form and do not require refrigeration during transportation. Moreover, the portable suitcase lab does not require electricity as it is powered by on-board solar panels and power packs.

It is believed that the Diagnostics-in-a-Suitcase idea will help in the rapid detection of the Ebola virus. It can be used in the field, at airports and at quarantine station and can significantly help improve management during an outbreak.

According to Dr. Christiane Stahl-Hennig, the head of DPZ's Unit of Infection Models, "the early detection of Ebola infected patients will lead to a more effective virus control since medical staff can identify and isolate confirmed Ebola cases more rapidly. The Diagnostics-in-a-Suitcase will therefore contribute to a better management during the Ebola-outbreak."

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Source: [German PrimateCenter \(DPZ\)](#)

Image Credit: Karin Tilch.

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