



EUROPEAN COMMISSION

Ispra, 22 September 2014

**SITUATION REPORT No. 16**  
**(19 – 22 SEPTEMBER 2014)**

**Subject: Ebola Virus Disease (EVD) outbreak in West Africa**

**Executive Summary**

According to the latest official WHO data, there have been **5864 cases** of Ebola Virus Disease (EVD) and **2811 deaths** in West Africa [1,2,3]. **Guinea, Liberia and Sierra Leone** still show an upward trend in new cases, whereas the disease is apparently contained in **Nigeria** and **Senegal**.

The **three-day Ebola curfew in Sierra Leone** during which most of the six million inhabitants were confined to their homes for 72 hours led to food shortages in several areas, including Freetown. During the curfew, dozens of new cases were identified as approximately 30,000 health workers and volunteers went door to door.

The United Nations (UN) General Assembly and the Security Council have approved resolutions creating the **United Nations Mission for Ebola Emergency Response (UNMEER)** to contain the EVD outbreak. This is the first time that the UN has created a mission in response to a public health emergency.

## Current Situation

The World Health Organisation (WHO) divides the affected West-African countries in three categories:

1. Countries with widespread and intense transmission: Guinea, Liberia and Sierra Leone;
2. Countries with initial cases or with localized transmission (Nigeria, Senegal); and
3. Neighbouring countries (Benin, Burkina Faso, Ivory Coast, Guinea-Bissau, Mali, Senegal).

Liberia and Sierra Leone still show rising incidence of EVD, with a worrisome surge in new cases in Liberia. The number of newly reported cases has not increased in Guinea in week 37, with a sustained transmission in its capital Conakry.

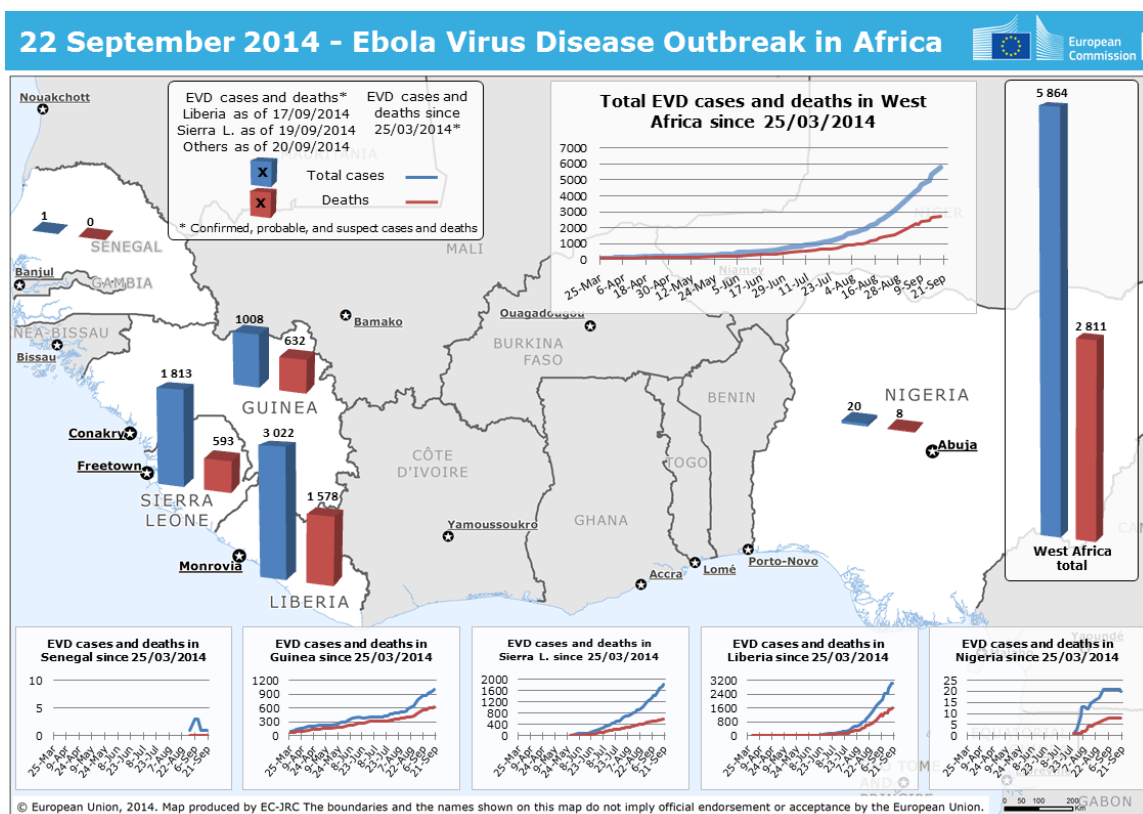


Fig. Overview of Ebola Virus outbreak in Africa (Produced by EC-JRC based on WHO data). Full Map is available in the annex.

In the second independent EVD outbreak in the **Democratic Republic of Congo** (Equateur province, Jeera county), 62 cases with 35 deaths have been reported [6].

A Spanish missionary, Manuel Garcia Viejo, was evacuated to Madrid aboard a Spanish military plane. He was the medical director of the Hospital of San Juan de Dios in Sierra Leone where he was infected with EVD.

## International Response

The newly created United Nations Mission for Ebola Emergency Response (**UNMEER**) to contain the EVD outbreak will bring together resources of the UN agencies, funds and programmes, to reinforce WHO's technical expertise and experience in disease outbreaks [8]. The support of other UN agencies, in addition to WHO, will also target the social, economic, development and security challenges in West Africa. The hub of UNMEER will be in Accra, Ghana, working closely with the governments in Guinea, Liberia and Sierra Leone.

The **World Food Programme** (WFP) will provide food, service and logistical assistance for up to 1.3 million people in Guinea, Liberia and Sierra Leone.

The **European Commission** announced an additional budget of 140 million EUR to help Guinea, Sierra Leone, Liberia and Nigeria in their efforts to contain the outbreak [7]. **France**, **UK** and **Germany** will provide treatment facilities in Guinea, Sierra Leone and Liberia.

The United States will send troops, material to build field hospitals, additional health care workers, community care kits and badly needed medical supplies. 3000 military personnel will be sent to West Africa, as an 88 million USD fund will be requested from US Congress.

**Table: Ebola cases and deaths by country and by date as of 22 September 2014**

Country	Case definition	Total	Total (deaths)	Case fatality rate (%)
Guinea	All	1008	632	63
Liberia	All	3022	1578	52
Sierra Leone	All	1813	593	33
Nigeria	All	20	8	40
Senegal	All	1	0	0
<b>Total</b>	<b>All</b>	<b>5864</b>	<b>2811</b>	<b>48</b>

Source: WHO [3].

Note: A separate outbreak of Ebola virus disease, which is not related to the outbreak in West Africa, was laboratory-confirmed on 26 August by the Democratic Republic of Congo (DRC) [6].

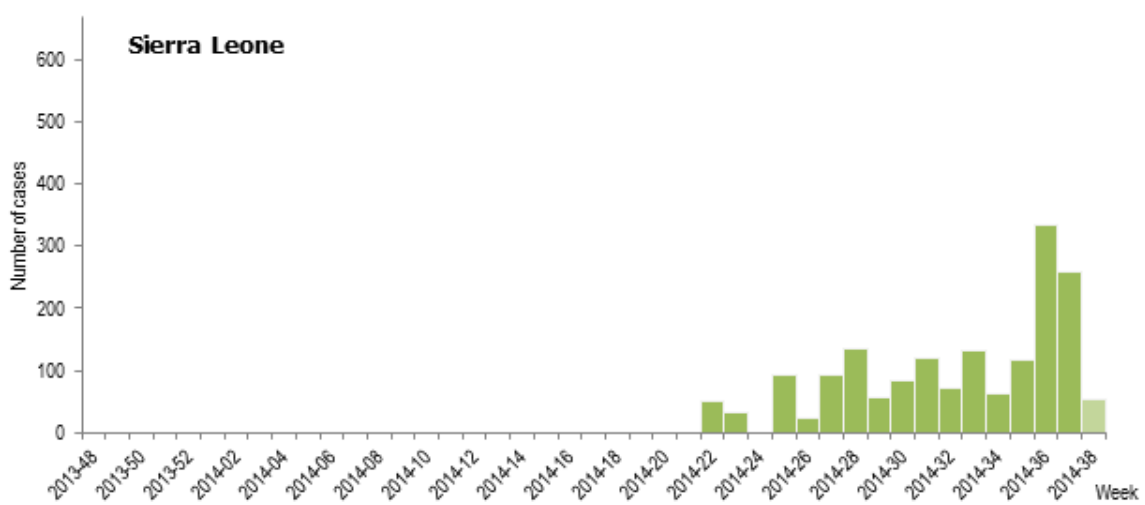
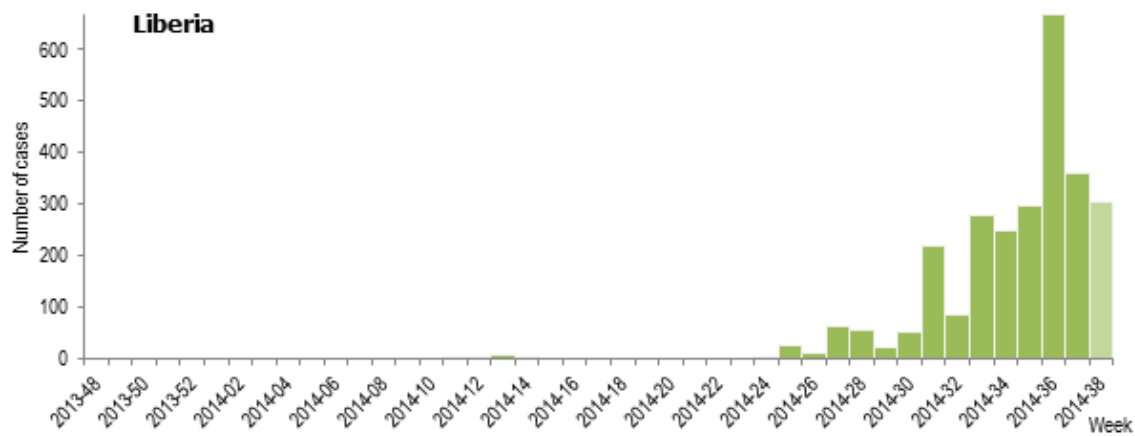
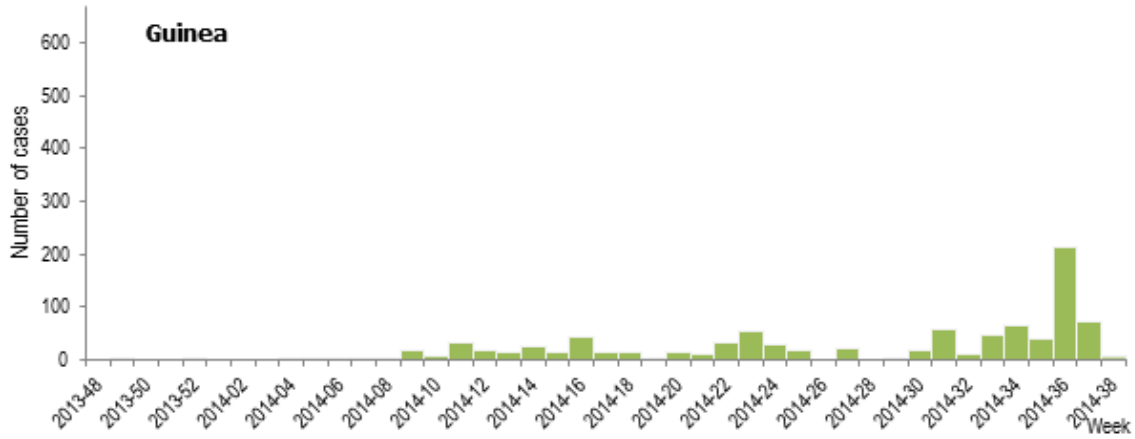
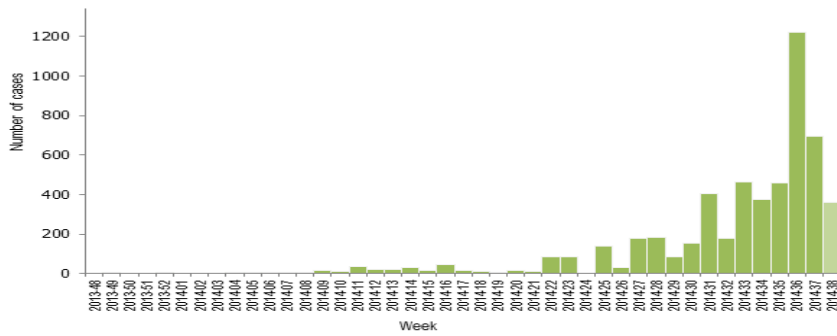
### **EVD risk in the European Union**

People infected with EVD may arrive in the EU by direct or indirect flights from affected countries or on board freighter or passenger ships. EVD cases may travel while incubating the disease and therefore not present with symptoms at the time of arrival, or arrive sick because they developed symptoms, or their condition deteriorated while travelling. Ebola virus disease can develop quickly, and cases are not always aware that they have been exposed to Ebola virus [4].

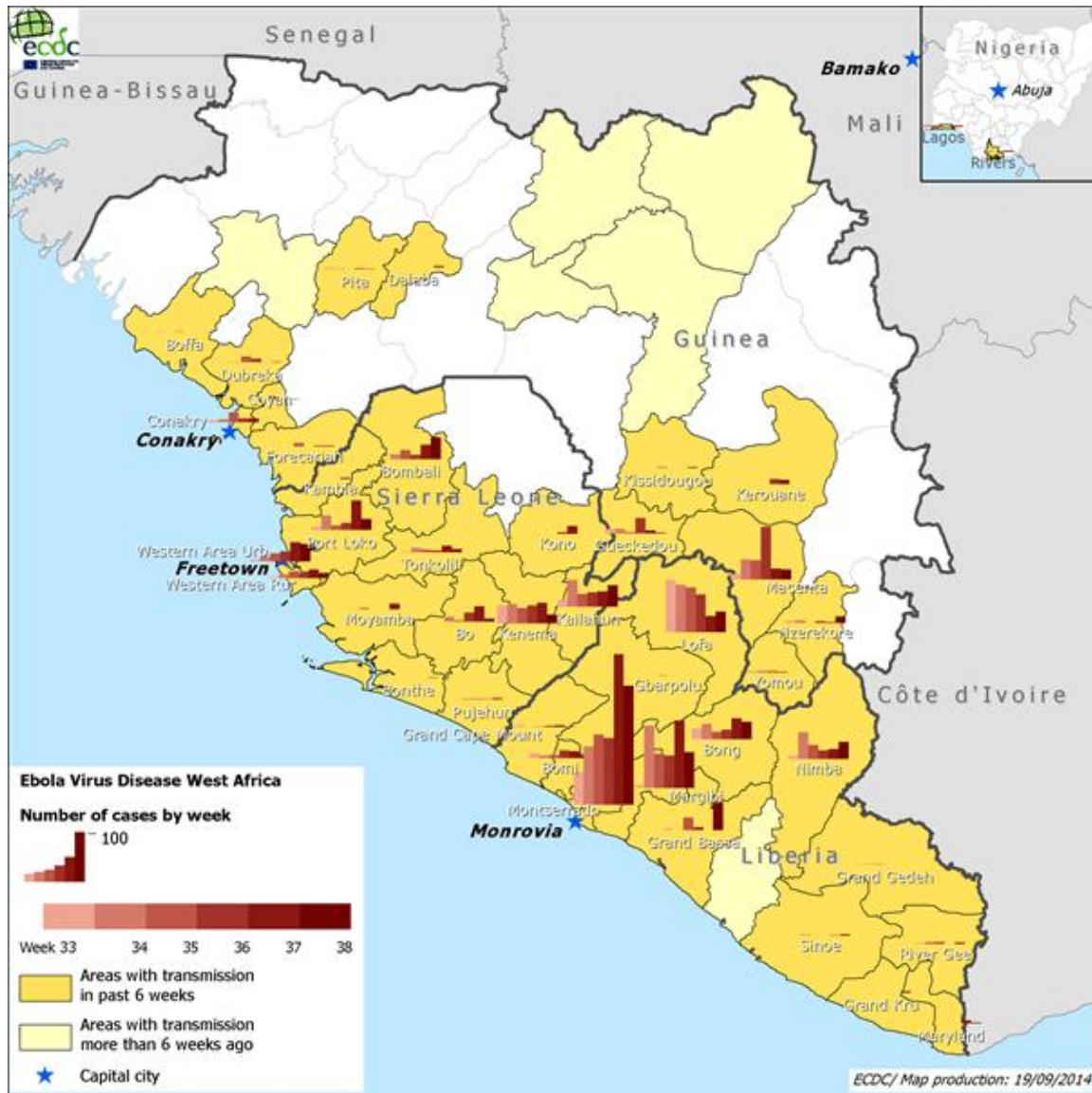
If an infectious case of EVD occurs in an EU Member State, secondary transmission cannot be ruled out, e.g. in healthcare settings or among direct close contacts (family members, relatives), in particular before an Ebola virus infection is suspected and infection control measures implemented [4].

The risk of importation to the EU is considered very low, in particular if returning travelers and healthcare providers are properly informed and are aware of the risk [4].

Distribution of confirmed, probable and suspected cases of EVD by week in Guinea, Sierra Leone, Liberia, Nigeria and Senegal for weeks 48/2013 to 38/2014, as of 14 September 2014



Weekly number of EVD cases in West Africa as of 14 September 2014. Source: ECDC.



*Ebola Virus Disease West Africa as of 19 September 2014. Source: ECDC (adapted from national situation reports and WHO).*

## Annex: Additional Information

### 1. Media monitoring

The MedISys (<http://medisys.newsbrief.eu>) internet health surveillance system of the Joint Research Centre of the European Commission features a dedicated website for monitoring reports on Ebola in traditional media, official sources and on Twitter.

<http://medisys.newsbrief.eu/medisys/alertedition/en/EbolaHemorrhagicFever.html>

The media attention has remained at a very high level with over 80.000 tweets (Fig. 1) and over 1200 articles (Fig. 2) on EVD per day. The top clusters of news articles (as of 22 September) concern:

1. Three day Ebola shutdown ends in Sierra Leone
2. Sierra Leone records 130 new Ebola cases
3. Ebola outbreak contained in Senegal and Nigeria
4. Spanish priest with Ebola in serious condition

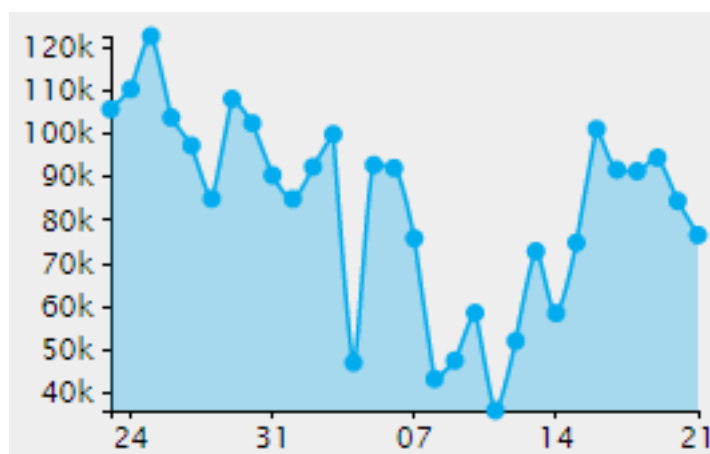


Fig. 1 Tweets on Ebola from 23 August until 21 September 2014. Source: MedISys

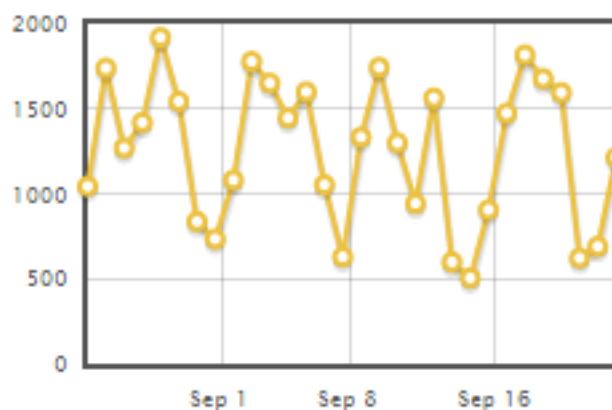


Fig. 2 Media reports on Ebola from 24 August until 22 September 2014. Source: MedISys

## 2. Ebola Virus

### ***History***

Ebolavirus is one of three members of the Filoviridae virus family (filovirus), along with genus Marburgvirus and genus Cuevavirus. The first Ebola outbreak occurred in 1976, simultaneously in Sudan (Nzara) and the Democratic Republic of Congo (Yambuku). The virus takes its name from the latter, as the outbreak occurred in a village near the Ebola River [5].

Genus Ebolavirus comprises 5 distinct species:

1. Bundibugyo ebolavirus (BDBV)
2. Zaire ebolavirus (EBOV)
3. Reston ebolavirus (RESTV)
4. Sudan ebolavirus (SUDV)
5. Tai Forest ebolavirus (TAFV)

BDBV, EBOV, and SUDV have been associated with large EVD outbreaks in Africa, whereas RESTV and TAFV have not. The RESTV species, found in Philippines and the People's Republic of China, can infect humans, but no illness or death in humans from this species has been reported to date [5]. Phylogenetic analysis links the current outbreak to a new strain of Zaire ebolavirus (EBOV) [2].

### ***Human-to-human transmission***

According to the European Centre for Disease Prevention and Control (ECDC) [5], transmission of EVD requires direct contact with blood, secretions, organs or other bodily fluids of dead or living infected persons or animals or with material or utensils heavily contaminated with such fluids. This includes unprotected sexual contacts with patients who have recently recovered from the disease. Health-care workers can be infected while treating patients; infection control measures must therefore be strictly practiced when in close contact with possible patients. Burial ceremonies in which direct contact with the body of the deceased person occurs can also play a role in the transmission of Ebola.

People are infectious as long as their blood and secretions contain the virus. For example, the virus has been isolated from semen 61 days after onset of illness in a man who was infected in a laboratory.

The incubation period of the virus may be very long, from 2 to 21 days [5]. During the current outbreak, the mortality has been approx. 49 %.



## **Symptoms**

EVD is a severe acute haemorrhagic disease initially characterized by sudden fever, weakness, muscle pain, headache and sore throat. This is then followed by vomiting, diarrhoea, rash, impaired kidney and liver function, and in some cases, internal and external bleeding. Laboratory findings include low white blood cell and platelet counts and elevated liver enzymes.

## **Diagnosis**

Ebola virus infections can be diagnosed in a laboratory through several types of tests on blood or body fluids including antibody-capture enzyme-linked immunosorbent assay (ELISA) or reverse transcriptase polymerase chain reaction (RT-PCR) assay. Samples should be handled under maximum biological containment conditions (P4).

## **Vaccine and treatment**

Currently, there is no tested vaccine for EVD available for clinical use [5]. Clinical trials of Ebola vaccine (developed by the Canadian government and licensed to **NewLink Genetics**) were announced to start in the next few weeks. **GlaxoSmithKline** has started clinical trials of its experimental vaccine in the UK. **Johnson & Johnson** intends to start clinical trials on their experimental Ebola vaccines as soon as possible. US-NIH is pushing for initial human testing of an investigational vaccine.

Severely ill patients require intensive supportive care. Patients require frequently oral rehydration with solutions containing electrolytes or intravenous fluids.

A new experimental treatment (ZMapp) by **Mapp Pharmaceuticals** was used to treat several infected aid workers. **ZMapp** comprises three humanized monoclonal antibodies that are produced in the tobacco plant *Nicotiana benthamiana*. The company is now producing the drug for early stage clinical safety studies and non-clinical studies, after supplies have been exhausted.

Another experimental drug by **Tekmira Pharmaceuticals** was moved to “partial hold” status by US FDA which allows the drug to be used in people infected with Ebola.

### 3. References

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# 22 September 2014 - Ebola Virus Disease Outbreak in Africa

