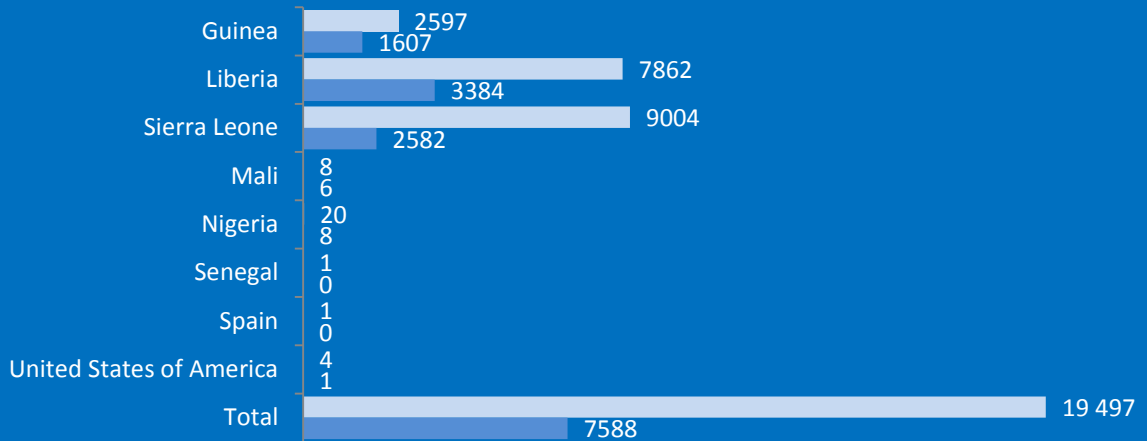




HIGHLIGHTS

- There have been 19 497 reported cases of Ebola virus disease, with 7588 reported deaths.
- Reported case incidence is fluctuating in Guinea and decreasing in Liberia.
- There are signs that the increase in incidence has slowed in Sierra Leone, although the country's west is now experiencing the most intense transmission in the affected countries. Response efforts have been strengthened to curb the spread of disease in the area.

CASES/ DEATHS



SUMMARY

A total of 19 497 confirmed, probable, and suspected cases of Ebola virus disease (EVD) have been reported in four affected countries (Guinea, Liberia, Mali and Sierra Leone) and four previously affected countries (Nigeria, Senegal, Spain and the United States of America) in the seven days to 21 December (week 51). There have been 7588 reported deaths (case definitions are provided in Annex 1).

Reported case incidence is fluctuating in Guinea and declining in Liberia. In Sierra Leone, there are signs that the increase in incidence has slowed, and that incidence may no longer be increasing. The country's west is now experiencing the most intense transmission in the affected countries, and response efforts have been strengthened to curb the spread of disease in the area. The reported case fatality rate in the three intense-transmission countries among all cases for whom a definitive outcome is known is 70%.

Interventions in the three countries continue to progress in line with the UN Mission for Ebola Emergency Response (UNMEER) aim to conduct 100% of burials safely and with dignity, and to isolate and treat 100% of EVD cases by 1 January, 2015. At a national level, the capacity to isolate and treat EVD patients has improved in all three countries since the commencement of the emergency response. While every country has sufficient capacity to isolate patients, the uneven geographical distribution of beds and cases means shortfalls persist in some districts. Each country has sufficient capacity to bury all people known to have died from Ebola, although it is possible that capacity is inadequate in some districts. The number of trained burial teams has significantly grown in each of the three countries in the past month. Every district that has reported a case of EVD in the three countries has access to a laboratory within 24 hours from sample collection. All three countries report that more than 90% of registered contacts associated with known cases of EVD are being traced, although there are discrepancies at the district level. The number of contacts traced per EVD case remains low in many districts. Social mobilization continues to be an important component of the response. Engaging communities promotes burial practices that are safe and culturally acceptable, and the isolation and appropriate treatment of patients with clinical symptoms of EVD.

## OUTLINE

This situation report on the Ebola Response Roadmap<sup>1</sup> contains a review of the epidemiological situation based on official information reported by ministries of health, and an assessment of the response measured against the core Roadmap indicators where available. Substantial efforts are ongoing to improve the availability and quality of information about both the epidemiological situation and the implementation of response measures.

Following the Roadmap structure, country reports fall into three categories: (1) those with widespread and intense transmission (Guinea, Liberia and Sierra Leone); (2) those with or that have had an initial case or cases, or with localized transmission (Mali, Nigeria, Senegal, Spain and the United States of America); and (3) those countries that neighbour or have strong trade ties with areas of active transmission.

### 1. COUNTRIES WITH WIDESPREAD AND INTENSE TRANSMISSION

A total of 19 463 confirmed, probable, and suspected cases of EVD and 7573 deaths have been reported up to the end of 21 December 2014 by the Ministries of Health of Guinea and Sierra Leone, and 20 December by the Ministry of Health of Liberia (table 1). The data are reported through WHO country offices.

Taking into account the number of cases as a proportion of an affected country's population, there have been 24 reported cases and 15 reported deaths per 100 000 population in Guinea, 199 cases and 85 deaths per 100 000 population in Liberia, and 157 cases and 45 deaths per 100 000 population in Sierra Leone.

**Table 1: Confirmed, probable, and suspected cases in Guinea, Liberia, and Sierra Leone**

Country	Case definition	Cumulative cases	Cases in past 21 days	Cumulative deaths
Guinea	Confirmed	2284	328	1344
	Probable	263	*	263
	Suspected	50	*	0
	<b>Total</b>	<b>2597</b>	<b>328</b>	<b>1607</b>
Liberia <sup>§</sup>	Confirmed	3085	121	‡
	Probable	1757	*	‡
	Suspected	3020	*	‡
	<b>Total</b>	<b>7862</b>	<b>121</b>	<b>3384</b>
Sierra Leone	Confirmed	7017	1039	2216
	Probable	287	*	208
	Suspected	1700	*	158
	<b>Total</b>	<b>9004</b>	<b>1039</b>	<b>2582</b>
<b>Total</b>		<b>19 463</b>	<b>1488</b>	<b>7573</b>

Data are based on official information reported by ministries of health, through WHO country offices. These numbers are subject to change due to ongoing reclassification, retrospective investigation and availability of laboratory results. \*Not reported due to the high proportion of probable and suspected cases that are reclassified. ‡ Data not available. § Data are missing for 21 December.

A stratified analysis of cumulative confirmed and probable cases indicates that the number of cases in males and females is about the same. There have been 73 reported cases per 100 000 population in males, compared with 75 per 100 000 population in females (table 2).

<sup>1</sup>For the Ebola Response Roadmap see: <http://www.who.int/csr/resources/publications/ebola/response-roadmap/en/>

Compared with children, people aged 15 to 44 are three times more likely to be affected (32 reported cases per 100 000 population, compared with 95 per 100 000 population), and people aged 45 and over (120 reported cases per 100 000 population) are almost four times more likely to be affected.

**Table 2: Cumulative number of confirmed and probable cases by sex and age group in Guinea, Liberia, and Sierra Leone**

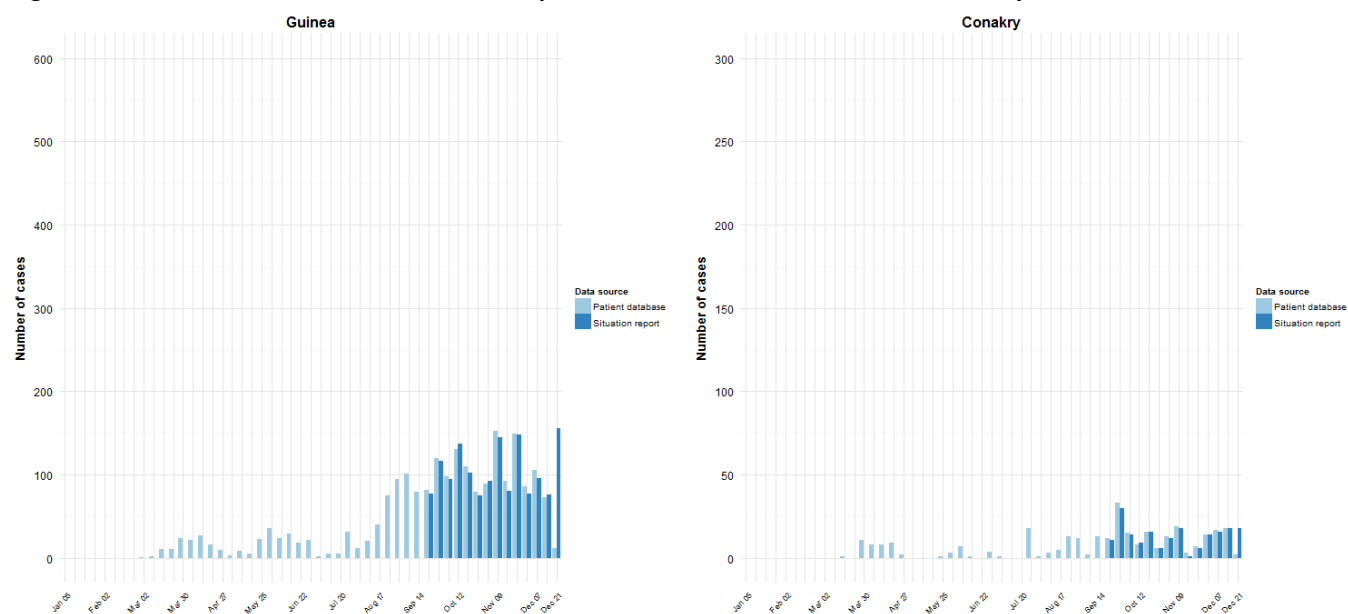
Country	Cumulative cases				
	By sex* (per 100 000 population)		By age group‡ (per 100 000 population)		
	Male	Female	0-14 years	15-44 years	45+ years
Guinea	1156 (21)	1218 (22)	371 (8)	1360 (29)	622 (40)
Liberia	2538 (128)	2444 (124)	831 (48)	2653 (155)	1015 (190)
Sierra Leone	3843 (135)	4101 (141)	1635 (67)	4520 (175)	1777 (241)
<b>Total</b>	<b>7537 (73)</b>	<b>7763 (75)</b>	<b>2837 (32)</b>	<b>8533 (95)</b>	<b>3414 (120)</b>

Population figures are based on estimates from the United Nations Department of Economic and Social Affairs.<sup>2</sup> \*Excludes cases for which data on sex are not available. ‡Excludes cases for which data on age are not available.

### GUINEA

A total of 156 confirmed cases were reported in Guinea during the week to 21 December (figure 1), the highest weekly case incidence reported by the country in this outbreak. This is largely due to a surge in cases in the south-eastern district of Kissidougou, which reported 58 confirmed cases – one-third of cases reported in the country in the past week. The district has previously reported no more than 5 cases each week. This emphasizes the need for continuing vigilance in case management, safe burial practices and social mobilization, to prevent outbreaks in areas previously experiencing little or no transmission.

**Figure 1: Confirmed Ebola virus disease cases reported each week from Guinea and Conakry**



The graphs in figures 1–3 show the number of new confirmed cases reported each week in situation reports from each country (in dark blue; beginning from epidemiological week 38, 15–21 September) and from patient databases (light blue). The patient databases give the best representation of the history of the epidemic. However, data for the most recent weeks are sometimes less complete in the database than in the weekly situation reports. These numbers are subject to change due to ongoing reclassification, retrospective investigation and availability of laboratory results.

<sup>2</sup> United Nations Department of Economic and Social Affairs: <http://esa.un.org/unpd/wpp/Excel-Data/population.htm>

In the surrounding districts, transmission is persistent in Macenta (11 confirmed cases) and Kerouane (6 confirmed cases), while cases continue to be reported in the outbreak’s epicentre of Guéckédou (3 confirmed cases).

Transmission remains intense in the capital of Conakry, which reported 18 confirmed cases in the past week. The neighbouring district of Coyah also continues to report high numbers of confirmed cases, with 19 reported in the past week. South of Conakry, EVD transmission remains high in Forecariah, which reported 7 new confirmed cases.

Other districts reporting new cases include Kindia (10 confirmed cases), which shares a border with Sierra Leone, N’Zérékoré (9 confirmed cases), Lola and Kérouané (6 confirmed cases each) and Dubréka and Téliimélé (3 confirmed cases each).

The national trend in Guinea has been fluctuating since September, and at present there is no discernible upward or downward trend in the country. Nine districts that have previously reported Ebola cases did not report any confirmed or probable cases in week 51.

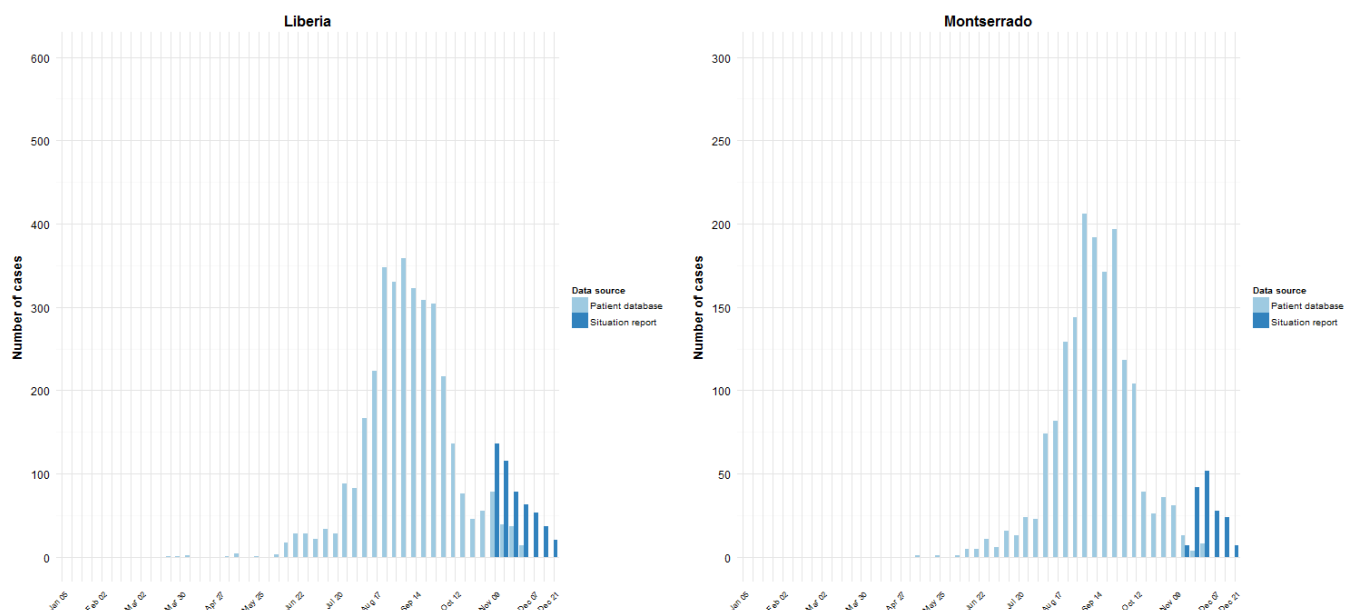
**LIBERIA**

Case incidence has been declining at a national level since mid-November (figure 2), although transmission remains intense in the country. A total of 21 confirmed cases were reported in 5 districts in the week to 21 December. The district of Montserrado, which includes the capital Monrovia, continues to experience the highest EVD activity in the country, with 7 confirmed and 16 probable cases reported in the past week. In the country’s east, along the Côte d’Ivoire border, Nimba reported 3 confirmed cases, its first cases in 9 weeks.

Transmission is persistent in the Grand Cape Mount district (6 confirmed cases) in the north of the country near the Sierra Leone border. Bong (4 confirmed cases) and Grand Bassa (1 confirmed case) were the only other districts to report cases during week 51.

In the north of the country, Lofa reported no cases for the eighth consecutive week, emphasizing the strength of response efforts in the district. Ten districts in Liberia did not report any cases in week 51.

**Figure 2: Confirmed Ebola virus disease cases reported each week from Liberia and Monrovia**



Data are missing for 21 December. Systematic data on laboratory confirmed cases have been available since 3 November nationally, and since 16 November for each district.

**SIERRA LEONE**

EVD transmission remains intense in Sierra Leone, with 315 new confirmed cases reported in the week to 21 December. While there are signs from the country situation reports that the increase in incidence has slowed and the incidence may no longer be increasing (figure 3), disease transmission in the affected countries is currently most intense in the western and northern districts of Sierra Leone.

The capital of Freetown accounted for one-third of the country’s new confirmed cases, reporting 115 in the past week. The neighbouring district of Port Loko experienced a surge in new cases, reporting 92 confirmed cases compared with 56 the previous week. Other districts in the region reporting new cases include Bombali (33), the Western Rural Area (31) and Kambia (7).

An operation by the Government of Sierra Leone, WHO and UN partners commenced last week, to intensify efforts to curb the disease in the western parts of the country. The Western Area Surge is targeting Freetown and neighbouring areas to break chains of transmission. Response efforts are supported by social mobilization promoting messages about safe burial practices, the prevention of Ebola infection, and the need to rapidly isolate and treat people with symptoms.

In the country’s east, the district of Kono, which has experienced high EVD-activity for the past six weeks, reported 13 confirmed cases in the week to 21 December. In the neighbouring central district of Tonkolili, transmission has also been intense for the past 14 weeks. However, the incidence in the district has declined from a peak of 56 confirmed cases six weeks ago, to 14 confirmed cases in each of the past two weeks.

In the south of the country, the number of confirmed cases reported decreased from 24 to 2 in the district of Bo, after sustained high EVD activity in the previous 12 weeks. It is too early to draw conclusions about whether this decline in incidence will be sustained.

Only two districts in the country did not report any new cases: Kailahun and Pujehun. The latter has not reported a case in the past 21 days.

**Figure 3: Confirmed Ebola virus disease cases reported each week from Sierra Leone and Freetown**

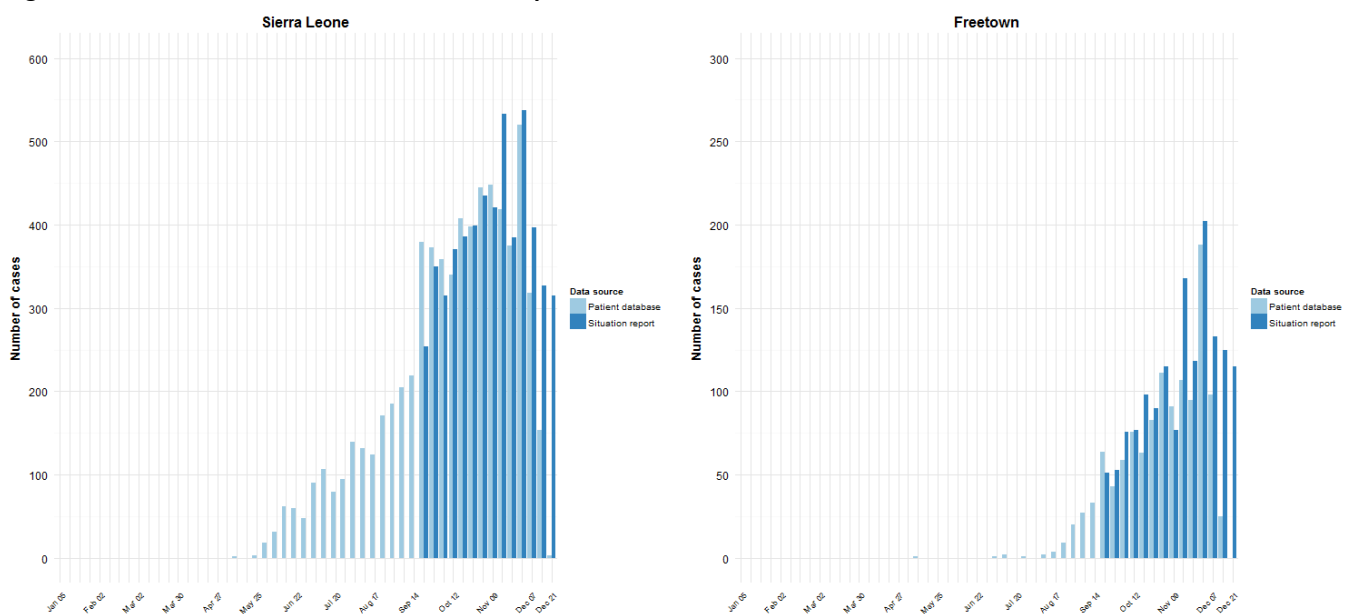
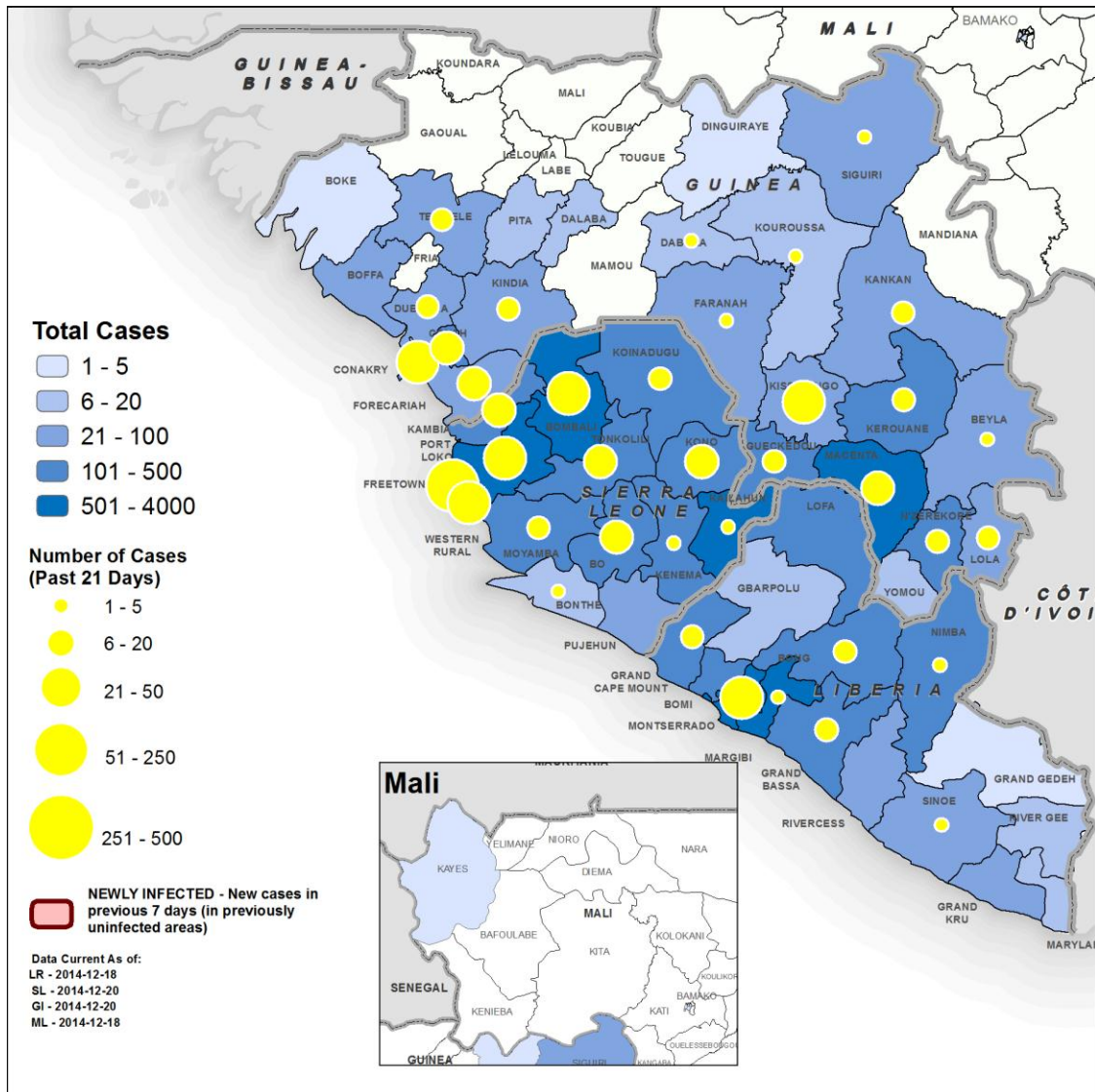


Figure 4: Geographical distribution of new and total confirmed and probable\* cases in Guinea, Liberia, Mali and Sierra Leone



Data are based on situation reports provided by countries. The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement. Data are missing from Liberia for 21 December. \*Data for the past 21 days represent confirmed cases in Guinea, Liberia, Mali and Sierra Leone.


**RESPONSE IN COUNTRIES WITH WIDESPREAD AND INTENSE TRANSMISSION**

A comprehensive 90-day plan is being implemented to control and reverse the EVD outbreak in West Africa (see UN Mission for Ebola Emergency Response: Annex 2). Among the plan’s key objectives is, by 1 January 2015, to treat and isolate 100% of EVD cases, and bury safely and with dignity 100% of peoples who die from EVD. The various agencies that coordinate each part of the response are shown in Annex 3. Tables 3 to 5 provide information on progress in the domains for which WHO is the lead agency: case management and case finding (laboratory confirmation and contact tracing). Information is also provided on social mobilization and the capacity to conduct safe burials.

### Case management

Providing the capacity to treat patients with EVD in facilities that allow them to be isolated from other patients and the community is central to the EVD response. At present, most of this capacity is concentrated in Ebola Treatment Centres (ETCs); large facilities ranging from 20 to 200 beds. Community Care Centres (CCCs) provide an alternative to care in ETCs in areas where there is insufficient ETC capacity, and remote areas that are not yet served by an ETC. Compared with ETCs, CCCs are smaller, with 8 to 30 beds per facility. This means they are easier to set up, which enables response coordinators to provide more rapid, flexible coverage dispersed over a wider geographical area.

**Table 3. Key performance indicators for the Ebola response in Guinea**

Indicator	Source dates	Current status	% of planned / target
% of districts with laboratory services accessible within 24h	As of 21/12/14	100%	100%
% of ETC beds operational	As of 21/12/14	36% (250 beds)	695 beds
% of CCC beds operational	As of 21/12/14	0%	328 beds
Capacity to isolate patients (beds per reported patient)	30/11/14 – 21/12/14	Average: 2.0 beds per reported patient Range: 0 – 42.8 beds per reported patient	
Case fatality rate (%) among hospitalized patients	Cumulative (to 21/12/14)	58%	
% of registered contacts to be traced who were reached daily	15/12/14 – 21/12/14	96%	
# of newly infected national HCWs	15/12/14 – 21/12/14	 (Coyah – 5, Kankan – 1)	
% of burial teams trained and in place	As of 06/12/14	83% (50 teams)	60 teams
% of districts with a list of identified key religious leaders or community groups who promote safe and dignified burials	As of 21/12/14	72%	

Definitions for each indicator are found in Annex 2.


Capacity to treat and isolate patients is used as a proximate measure of the proportion of EVD cases that are isolated. Using this proximate measure of isolation at a national level, all three intense-transmission countries currently have the capacity to isolate all reported cases. In Guinea (table 3) there are 2.0 available beds per reported confirmed and probable EVD case, in Liberia (table 4) there are 9.4 beds for every confirmed and probable case, and in Sierra Leone there are 3.2 beds for every confirmed and probable case (table 5).

However, these figures mask a more complex picture at the district level. The capacity to isolate takes into account the existence of ETC and CCC beds. Some districts have neither an ETC nor a CCC, so there is no capacity to isolate patients in these facilities. This makes it necessary for patients to go to other districts for isolation and treatment. For example, in Kindia in Guinea, where 10 new confirmed cases were reported in the past week, there is no ETC or CCC in the district. Patients are likely to be isolated and receive treatment in an ETC in Conakry. By contrast, some areas with low case incidence have additional capacity to isolate. For example, the Guinean district of Guéckédou and the district of Kailahun in Sierra Leone have 42.8 beds and 72 beds per reported case in those districts respectively. The available beds in the districts may be used to isolate and treat patients from other districts. This highlights discrepancies in the geographical distribution of beds and cases. Steps are being taken in each country to address these discrepancies, based on the evolving epidemiology, such as opening new ETCs in the Western Rural Area of Sierra Leone and Coyah in Guinea.

The capacity to isolate patients is dependent on the number of available ETC and CCC beds and the number of new EVD cases. In Guinea, despite a growth in bed capacity, the number of beds per reported case appears to be lower than the number reported the previous week (2.4). This may be explained by a growth in the number of probable and confirmed cases in the country. In Liberia, an increase in the number of beds per isolated patient may be explained by fewer probable and confirmed cases reported on average in the past 21 days. In Sierra Leone, a large increase in ETC bed numbers has increased the capacity to isolate patients in the country.

As of 21 December, 250 EVD-treatment and isolation beds were operational in Guinea, concentrated in 4 ETCs located in the capital, Conakry, and the south-eastern districts of Guéckédou, Macenta and N'zérékoré. A bed is considered operational when it is staffed and ready to receive patients. This uneven distribution of capacity means that any patient with EVD in the north and centre of the country needs to travel long distances to access treatment. In addition, the populations of several areas in the eastern Guinean region are more likely to seek treatment in the north of the country than they are to seek treatment in nearby Guéckédou or Macenta. Planned ETCs in the eastern districts of Kérouané, Coyah and Beyla should also help address this distribution problem.

**Table 4. Key performance indicators for the Ebola response in Liberia**

Indicator	Source dates	Current status	% of planned / target
% of districts with laboratory services accessible within 24h	As of 21/12/14	100%	100%
% of ETC beds operational	As of 15/12/14	53% (650 beds)	1219 beds
% of CCC beds operational	As of 15/12/14	23% (98 beds)	428 beds
Capacity to isolate patients (beds per reported patient)	30/11/14–21/12/14	Average: 9.4 beds per reported patient Range: unavailable	
Case fatality rate (%) among hospitalized patients	Cumulative (to 21/12/14)	58%	
% of registered contacts to be traced who were reached daily	15/12/14–21/12/14	99%	
# of newly infected national HCWs	15/12/14–21/12/14	 (Montserrado - 1)	
% of burial teams trained and in place	As of 23/11/14	77% (77 teams)	100 teams
% of districts with a list of identified key religious leaders or community groups who promote safe and dignified burials	As of 21/12/14	0%	

In Liberia, 650 beds are operational in 12 ETCs: 6 ETCs are located in the capital, Monrovia, 3 are in Margibi, and the districts of Bomi, Bong and Nimba each have 1 ETC. There are currently 4 CCCs open, 1 in each of Grand Cape Mount and River Gee, and 2 in Margibi. Of the three countries with widespread and intense transmission, capacity for treatment and isolation is most evenly distributed in Liberia. The number of operational beds in the country previously included those that could become rapidly available in a short period of time to meet local need. It now refers to the number of beds that are fully staffed, equipped and open. The planned number of beds now refers to beds that can be scaled up rapidly to meet local need. This reflects a shift to focus on current rather than anticipated need. A total of 98 CCC beds are operational in the country.

In Sierra Leone, a total of 833 ETC beds are operational. There are 2 ETCs in the eastern province, 1 in the southern province, 5 in the northern province and 9 in the western province. This reflects a growth in capacity, compared with the 615 beds reported last week. There are 291 CCC beds operational in the country.



**Table 5. Key performance indicators for the Ebola response in Sierra Leone**

Indicator	Source dates	Current status	% of planned / target
% of districts with laboratory services accessible within 24h	As of 21/12/14	100%	100%
% of ETC beds operational	As of 21/12/14	41% (833 beds)	2020 beds
% of CCC beds operational	As of 19/12/14	24% (291 beds)	1208 beds
Capacity to isolate patients (beds per reported patient)	30/11/14 – 21/12/14	Average: 3.2 beds per reported patient Range: 0 – 72 beds per reported patient	
Case fatality rate (%) among hospitalized patients	Cumulative (to 21/12/14)	60%	
% of registered contacts to be traced who were reached daily	15/12/14 – 21/12/14	96%	
# of newly infected national HCWs	15/12/14 – 21/12/14	(0)	
% of burial teams trained and in place	As of 21/12/14	89% (102 teams)	114 teams
% of districts with a list of identified key religious leaders or community groups who promote safe and dignified burials	As of 21/12/14	100%	

### Case fatality

The cumulative case fatality rate in the three intense-transmission countries among all probable and confirmed cases for whom a definitive outcome is recorded is 70%. For those patients recorded as hospitalized, the case fatality rate is 58% in each of Guinea, Liberia and 60% in Sierra Leone (tables 3–5).

### Laboratories

Providing capacity for prompt and accurate diagnosis of EVD cases is an integral part of the response to the EVD outbreak. All 53 EVD-affected districts (those that have ever reported a probable or confirmed case) have access to laboratory support (figure 6). Access is defined as having the logistical capacity to transport a sample to a laboratory by road within 24 hours of sample collection. As of 22 December, 23 laboratories have the capacity to confirm EVD cases: 4 in Guinea, 8 in Liberia and 11 Sierra Leone. These laboratories currently serve 24 affected districts in Guinea, 15 in Liberia and 11 in Sierra Leone. It is anticipated that in coming weeks, additional laboratories will have the capacity to confirm EVD cases including 1 laboratory in Guinea, 1 in Liberia and 2 in Sierra Leone.

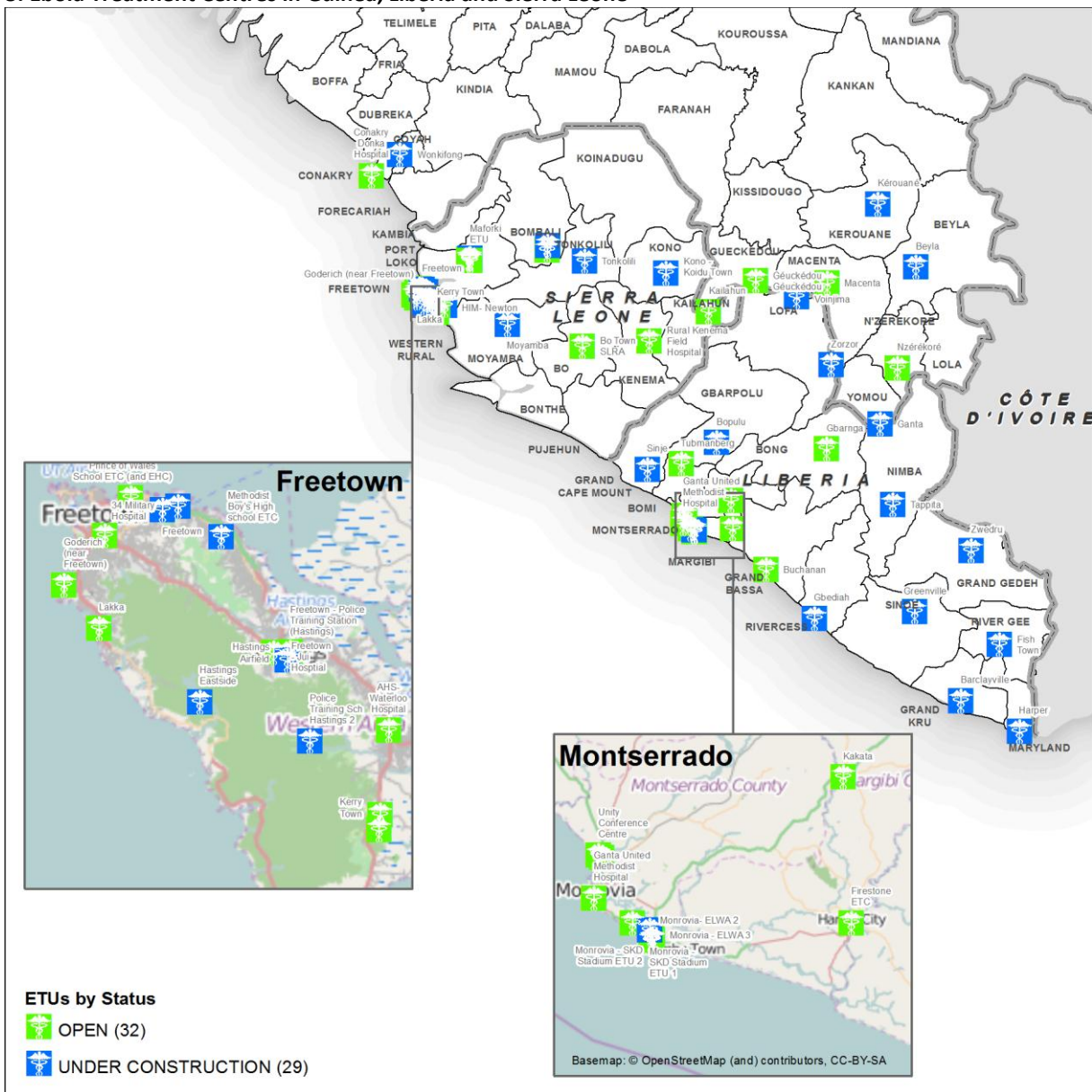
### Contact tracing and case finding

Effective contact tracing ensures that the reported and registered contacts of confirmed EVD cases are visited daily to monitor the onset of symptoms during the 21-day incubation period of the Ebola virus. Contacts presenting symptoms should be promptly isolated, tested for EVD, and if necessary treated, to prevent further disease transmission.

During the week to 21 December, 96% of all registered contacts were visited on a daily basis in Guinea, 99% in Liberia, and 96% in Sierra Leone. However, the proportion of contacts reached was lower in many districts (as low as 36% in Kenema in Sierra Leone), while 100% of contacts were reached in some districts. Each district is reported to have at least one contact-tracing team in place. On average, during the past 21 days, 12 contacts

were listed per new confirmed case in Guinea, 26 in Liberia and 4 in Sierra Leone. Active case-finding teams are being mobilized as a complementary case-detection strategy in several areas.

Figure 5. Ebola Treatment Centres in Guinea, Liberia and Sierra Leone



Four ETUs in Sierra Leone and one in Liberia are not shown.

**Health-care workers**

A total of 666 health-care workers (HCWs) are known to have been infected with EVD up to the end of 21 December, 366 of whom have died (table 6). The total case count includes 2 HCWs in Mali, 11 HCWs infected in Nigeria, 1 HCW infected in Spain while treating an EVD-positive patient, and 3 HCWs in the USA (including a HCW infected in Guinea, and 2 HCWs infected during the care of a patient in Texas). Seven HCW infections were reported in the week to 21 December, 6 in Guinea (including 5 in Coyah and 1 in Kankan) and 1 in Montserrado in Liberia.

Extensive investigations to determine the source of exposure in each case are being undertaken. Early indications are that a substantial proportion of infections occurred outside the context of Ebola treatment and care centres.

**Table 6: Ebola virus disease infections in health-care workers in the three countries with intense transmission**

Country	Cases	Deaths
Guinea	139	72
Liberia*	367	177
Sierra Leone	143	110
<b>Total</b>	<b>649</b>	<b>359</b>

Data are based on official information reported by ministries of health. These numbers are subject to change due to ongoing reclassification, retrospective investigation and availability of laboratory results. \*Data are missing for 21 December.

### Safe and dignified burials

The number of safe burial teams trained and in place has grown significantly since the beginning of the emergency response. There are 229 safe burial teams trained and in place: 50 teams in Guinea, 77 teams in Liberia and 102 teams in Sierra Leone and (as of 6 December in Guinea, 23 November in Liberia, and 21 December in Sierra Leone). Sixty days after the commencement of the emergency response, there were 34 teams in place in Guinea, 56 in Liberia and 50 in Sierra Leone.

Both Guinea and Sierra Leone now have more than 80% of planned trained safe burial teams in place, whilst Liberia has 77% of teams in place. All three countries have sufficient capacity to safely bury all reported EVD-related fatal cases, although it is possible that capacity remains inadequate in some districts.

Many safe burials are of people who did not die from Ebola. This is because the symptoms of the disease are similar to those of other conditions, and a subsequent laboratory test found that the case was negative for Ebola. EVD deaths continue to be under-reported in this outbreak, which means some burials of people who died from Ebola are unreported. By contrast with the distribution of capacity to isolate and treat patients, the geographical distribution of safe burial teams is far more even across the three intense-transmission countries, though some more remote areas may still be underserved.

The International Federation of Red Cross and Red Crescent Societies (IFRC) is currently the only organization involved in safe burials across all three of the intense-transmission countries. The non-governmental organization Global Communities operates in Liberia, Concern Worldwide operates in Liberia and Sierra Leone, and World Vision operates in Sierra Leone. Data on the number of safe burials to have taken place only includes burials done by IFRC and Global Communities.

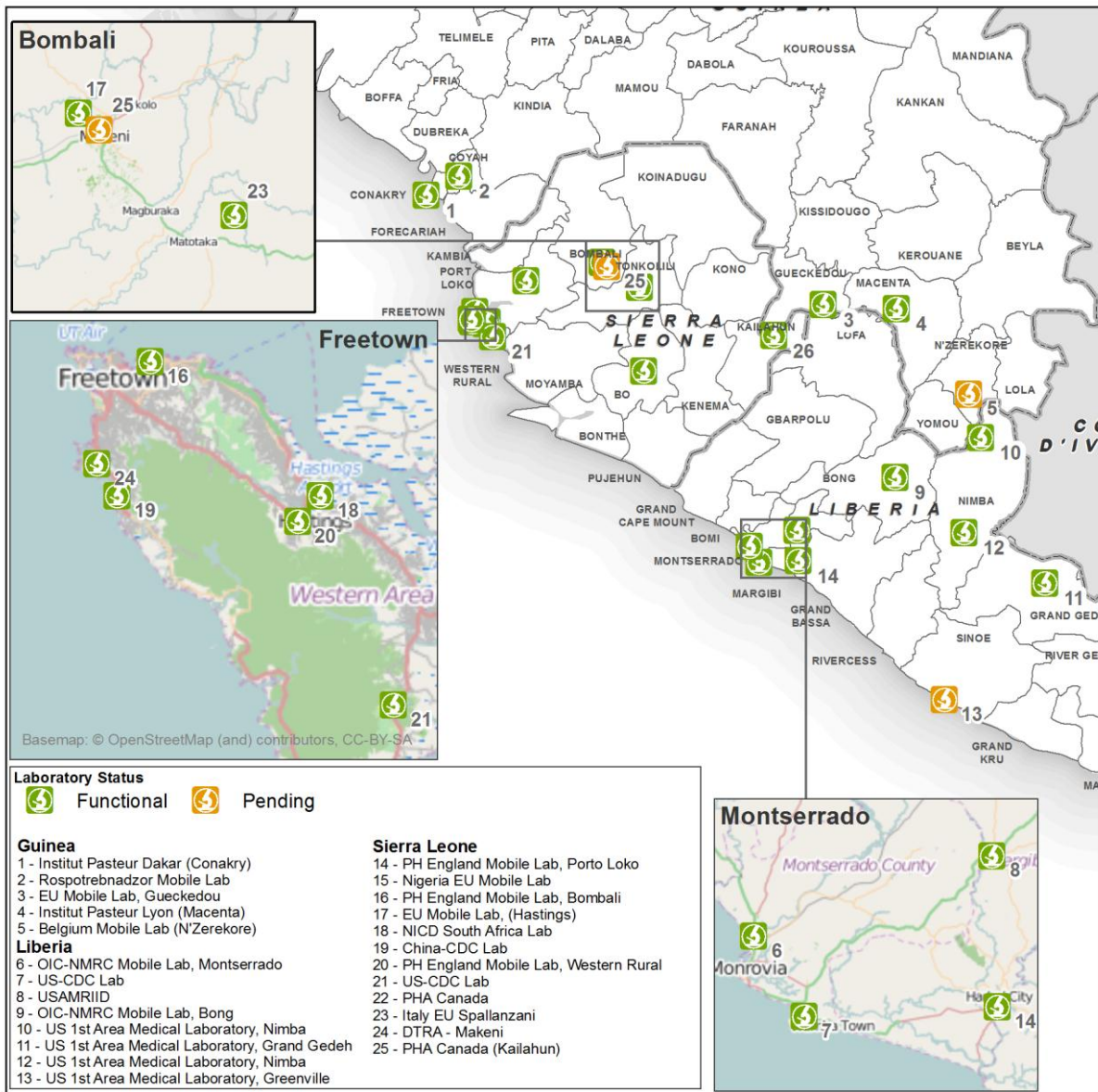
### Community engagement and social mobilization

Social mobilization promotes the adoption of strategies to prevent Ebola infection, helps communities to gain a better understanding of Ebola, and dispels misconceptions about the disease. UNICEF is the lead agency in social mobilization during this Ebola outbreak, supported by partners and WHO.

Engaging communities in Ebola-affected countries is essential to reduce the spread of disease. Fear may prompt people with clinical symptoms to avoid seeking appropriate treatment, leading to the unsafe practice of family members caring for sick people at home. Social mobilization activities can encourage people with Ebola symptoms to seek early medical care and, if confirmed as a case of EVD, to be appropriately isolated. Outreach campaigns inform communities about the risks of Ebola, how the disease can be prevented, and why contact tracing is necessary to prevent further infection.

Community engagement can help reduce the stigma associated with Ebola, so that survivors and orphans can be reunited with, and supported by, their communities. Anthropologists are playing an important role in gaining a more complete understanding of culturally acceptable practices in Ebola-affected communities, supporting and contributing to the effectiveness of response activities.

Figure 6. Status of laboratories deployed in the affected countries to support the Ebola outbreak response



Fear, limited understanding and misconceptions in the community about Ebola, and limited cultural sensitivity among some response workers may lead to incidents that place the safety of health-care and other workers at risk. Between 10 and 17 December, at least one security incident or other form of refusal to cooperate was reported in 4% of chiefdoms, villages or prefectures in Guinea, 13% in Liberia and 29% in Sierra Leone.

With burials continuing to be a significant source of infection, conducting burials safely and with dignity is crucial to curbing the spread of disease. Religious leaders and community groups play a major role in a range of community engagement activities, including promoting and implementing safe burial practices according to standard guidelines. As of 17 December, all 14 districts in Sierra Leone have a list of identified key religious leaders or community groups promoting such burial practices. In Guinea, 72% (27 of 38) of districts have such a list. Data are not available for Liberia.

Social mobilization taskforces have been established to develop activities promoting safe and culturally acceptable burial practices, and to engage communities about the need to isolate and appropriately treat those with clinical symptoms of EVD. As of 17 December, all 15 districts in Liberia are monitoring the status and progress of community sensitization activities, 86% (33 of 38) of districts in Guinea, and 64% (9 of 14) of districts in Sierra Leone.

In Guinea, social mobilization activities include the establishment of Community Watch Committees (CWC). These committees comprise community leaders, religious and spiritual leaders and residents who disseminate information and act as liaisons between the population and available services. UNICEF has supported the establishment of 1257 CWCs, of which 107 are actively working in communities. A total of 2560 CWCs are planned by UNICEF and partners. Community resistance continues to be an obstacle to response efforts in some parts of the country. UNICEF and partners have been able to overcome the resistance of 47 localities and communities, with a social mobilization strategy involving community leaders, religious leaders, local authorities and opinion leaders. The strategy includes communication via rural radio; training and sensitization of religious leaders regarding safe burial practices; and educating drivers of mini-buses and taxis about reducing the risk of transmission occurring on public transport. Efforts are ongoing to overcome resistance in communities across the country.

In Liberia, following an outbreak of 4 cases in the town of Polay in Sinoe county, UNICEF and partners conducted house-to-house visits, town hall meetings and focus group discussions in the quarantined and neighbouring villages. Community engagement was used to highlight the importance of preventive practices, rapid reporting and isolation of sick family members, the identification of people with EVD symptoms, and reducing stigmatization. Many of these villages were difficult to reach and reported that the teams were the first to visit them and provide information on Ebola. From 10 to 17 December, information about Ebola prevention was provided to more than 8000 households, as part of a door-to-door campaign across the country. Additionally, more than 13 000 women, more than 11 000 men and almost 9000 children were reached through more than 160 meetings and group discussions. Social mobilization workers continue to face challenges in gaining access to some communities because of heavy rain and bad roads. While pockets of resistance remain in some counties, a total of 675 community leaders and elders were reached between 10 and 17 December.

In Sierra Leone, information about Ebola prevention and treatment was provided to more than 5000 households between 10 and 17 December. A total of 370 religious leaders and 65 paramount chiefs were engaged to support social mobilization activities in 8 districts. Ten focus group discussions were held in the high-transmission districts of Bombali and Tonkolili, to promote community acceptance and understanding of UNICEF-supported CCCs. While communities appear to understand the need for CCCs, fear and denial about Ebola persists. Community engagement efforts focused on improving community understanding that CCCs are the safest place to send family members with Ebola-like symptoms. UNICEF's partner in the country, the Health for All Coalition, conducted training for a "hotspot busters" project in the western rural and urban areas, where EVD transmission is most intense in the country. A total of 40 people in the western rural areas and 98 in the western urban areas were trained in social mobilization activities. They have been deployed to 35 areas of intense transmission to engage communities about safe burials and early isolation of symptomatic people.

### Budget

As of 22 December, WHO had received US\$212.3 million, with a further \$17.9 million pledged.

## 2. COUNTRIES WITH AN INITIAL CASE OR CASES, OR WITH LOCALIZED TRANSMISSION

Five countries (Mali, Nigeria, Senegal, Spain and the United States of America) have reported a case or cases imported from a country with widespread and intense transmission. A total of 8 cases, including 6 deaths, have been reported in Mali (table 7). The most recent 7 cases are in the Malian capital Bamako, and are not related to the country's first EVD case, who died in Kayes on 24 October. The last confirmed case tested negative for the second time on 6 December, and was discharged from hospital on 11 December. All identified contacts connected with both the initial case in Kayes and the outbreak in Bamako have completed the 21 day follow-up period.

**Table 7: Ebola virus disease cases and deaths in Mali**

Country	Cumulative cases					Contact tracing			
	Confirmed	Probable	Suspect	Deaths	Health-care workers	Contacts under follow-up	Contacts who have completed 21-day follow-up	Date last patient tested negative	Number of days since last patient tested negative
<b>Mali</b>	7	1	0	6	25%	0	433	6 December 2014	18

*Data are based on official information reported by the Ministry of Health. These numbers are subject to change due to ongoing reclassification, retrospective investigation and availability of laboratory results.*

### 3. PREPAREDNESS OF COUNTRIES TO RAPIDLY DETECT AND RESPOND TO AN EBOLA EXPOSURE

The evolving EVD outbreak highlights the considerable risk of cases being imported into unaffected countries. With adequate levels of preparation, however, such introductions of the disease can be contained with a rapid and adequate response.

The success of Nigeria and Senegal in halting the transmission of EVD highlights the critical importance of preparedness. Key factors in preventing the spread of EVD in both countries included strong political leadership, early detection and response, public awareness campaigns, and strong support from partner organizations.

WHO's preparedness activities aim to ensure all countries are operationally ready to effectively and safely detect, investigate and report potential EVD cases, and to mount an effective response. WHO provides this support through country visits by preparedness strengthening teams, direct technical assistance to countries, and the provision of technical guidance and tools.

#### Priority countries in Africa

The initial focus of support by WHO and partners is on highest priority countries – Cote d'Ivoire, Guinea Bissau, Mali and Senegal – followed by high priority countries – Burkina Faso, Benin, Cameroon, Central African Republic, Democratic Republic of the Congo, Ethiopia, Gambia, Ghana, Mauritania, Nigeria, South Sudan, Niger and Togo. The criteria used to prioritize countries include geographical proximity to affected countries, trade and migration patterns, and strength of health systems.

Since 20 October, international preparedness strengthening teams have provided technical support in 14 countries: Benin, Burkina Faso, Cameroon, Central African Republic, Cote d'Ivoire, Ethiopia, Gambia, Ghana, Guinea Bissau, Mali, Mauritania, Niger, Senegal and Togo. Technical working group meetings, field visits, high-level exercises and field simulation exercises have helped to identify key areas for improvement. Each country now has a tailored 90-day plan to strengthen operational readiness for response. A preparedness strengthening team is expected to visit Equatorial Guinea in January.

WHO and partners are deploying staff to those countries that have been visited by preparedness strengthening teams, to assist with the implementation of 90-day plans. Budgeted operational preparedness and response plans in priority countries have been presented to technical and financial partners for support. Coordination structures for Incident Management and Emergency Operations Centres have been set up, or are in the final stages of establishment, in 7 of 14 priority countries (Cameroon, Gambia, Ghana, Guinea-Bissau, Mali, Mauritania and Senegal). In all 14 countries, exercises have been held to review plans, raise awareness and share information, with the aim of identifying planning gaps. Functional field exercises and drills have been held in 3 priority countries (Benin, Cameroon and Mali). Risk communication training has commenced, targeting all priority countries.

When Mali reported its first Ebola case in October, a preparedness team was in the country and was repurposed to a rapid response team. The country has since established a national EVD coordinator and incident management

system; increased its cross-border coordination with Guinea to reduce the risk of imported cases; completed an ETC in Bamako; and accelerated the implementation of surveillance and contact tracing, infection prevention and control, logistics and community mobilization in 4 priority regions.

Since a preparedness team visited Benin, the country has developed an Ebola Treatment Centre in Cotonou, with support from Germany. The country also used its response to a Lassa outbreak in Tanguéta to strengthen its national and regional response capacity for Ebola. This includes the deployment of national and regional rapid response teams; the identification of another ETC for the Atacora region; standard operating procedures for case detection; contact tracing and isolation of cases; training in infection prevention and control, data management and contact tracing; and increased social mobilization activities across Benin.

In Burkina Faso, two national and 13 regional rapid response teams have been trained. A total of 240 Red Cross volunteers have been trained, and an ETC has been finalized in Ouagadougou. Another is in process in Bobo-Dioulasso.

### Preparedness in the rest of the world

WHO is expanding preparedness efforts to other countries in Africa and all regions. Fifty-two countries have been visited in Europe, the Americas, South-East Asia, and the Western Pacific and Eastern Mediterranean regions.

### Tools and resources for preparedness

Building on existing national and international preparedness efforts, a set of tools has been developed to support any country to identify opportunities for improvements to intensify and accelerate their readiness. The WHO EVD Preparedness Checklist<sup>3</sup> identifies 10 key components and tasks for countries preparing their health systems to identify, detect and respond to EVD. The 10 components include: overall coordination, rapid response, public awareness and community engagement, infection prevention and control, case management, safe burials, epidemiological surveillance, contact tracing, laboratory capacity, and capacity building for points of entry. A revised list of technical guidelines and related training materials by preparedness component has been finalized and can be found on the revised WHO preparedness website.<sup>4</sup>

## ANNEX 1: CATEGORIES USED TO CLASSIFY EBOLA CASES

EVD cases are classified as suspected, probable, or confirmed.

### Ebola virus disease case-classification criteria

Classification	Criteria
<b>Suspected</b>	Any person, alive or dead, who has (or had) sudden onset of high fever and had contact with a suspected, probable or confirmed Ebola virus disease (EVD) case, or a dead or sick animal OR any person with sudden onset of high fever and at least three of the following symptoms: headache, vomiting, anorexia/loss of appetite, diarrhoea, lethargy, stomach pain, aching muscles or joints, difficulty swallowing, breathing difficulties, or hiccup; or any person with unexplained bleeding OR any sudden, unexplained death.
<b>Probable</b>	Any suspected case evaluated by a clinician OR any person who died from 'suspected' EVD and had an epidemiological link to a confirmed case but was not tested and did not have laboratory confirmation of the disease.
<b>Confirmed</b>	A probable or suspected case is classified as confirmed when a sample from that person tests positive for EVD in the laboratory.

<sup>3</sup> <http://www.who.int/csr/resources/publications/ebola/ebola-preparedness-checklist/en/>

<sup>4</sup> <http://www.who.int/csr/resources/publications/ebola/preparedness/en/>

**ANNEX 2: UN MISSION FOR EBOLA EMERGENCY RESPONSE: DEFINITIONS OF KEY PERFORMANCE INDICATORS**

The first-ever UN mission for a public health emergency, the UN Mission for Ebola Emergency Response (UNMEER), has been established to address the unprecedented EVD outbreak. WHO is a partner in the mission. Its strategic priorities are to stop the spread of the disease, treat infected patients, ensure essential services, preserve stability, and prevent the spread of EVD to unaffected countries. Response monitoring indicators are calculated using the following numerators and denominators:

Indicator	Numerator	Numerator source	Denominator	Denominator source
% of districts with laboratory services accessible within 24h	# of EVD-affected districts able to send samples to a laboratory within 24h	National laboratories	# of EVD-affected districts: reported a probable or confirmed EVD case	Clinical investigation records
% of ETC beds operational	# of ETC beds operational	WHO	# of ETC beds planned	UNMEER
% of CCC beds operational	# of CCC beds operational	UNMEER	# of CCC beds planned	UNMEER
Capacity to isolate patients (beds per reported patient)	Number of operational ETC and CCC beds	WHO / UNMEER	Average number of probable and confirmed EVD cases (last 21 days)	Country situation reports
Case fatality rate (%) among hospitalized patients	# of deaths among hospitalized patients	Clinical investigation records	# of hospitalized patients with probable or confirmed EVD for whom a definitive survival outcome is reported	Clinical investigation records
% of registered contacts to be traced who were reached daily	# of registered contacts to be traced who were reached daily	Country situation reports	# of contacts currently registered	Country situation reports
# of newly infected HCWs*	# of newly infected HCWs	Country situation reports	N/A	N/A
% of burial teams trained and in place	# of burial teams trained and in place	IFRC/WHO/UNMEER	# of burial teams planned	UNMEER
% of districts, counties etc. with list of identified key religious leaders or community groups who promote safe funeral and burial practices according to standard guidelines	# of locations with list of identified religious leaders / influencers who promote safe burial practices	UNICEF	# of districts with list of identified religious leaders or established community groups	UNICEF

\*Used as a proximate measure of the effectiveness of infection prevention and control measures in EVD treatment facilities.

**ANNEX 3: COORDINATION OF THE EBOLA RESPONSE**

Response activity	Lead agency
Case management	WHO
Case finding, lab and contact tracing	WHO
Safe and dignified burials	International Federation of Red Cross and Red Crescent Societies
Community engagement and social mobilization	UNICEF
Crisis management	UNMEER
Logistics	UNMEER and World Food Programme
Cash payments coordination	United Nations Development Programme
Staffing	UNMEER
Training	WHO and US Centers for Disease Control and Prevention
Information management	UNMEER