



SUMMARY

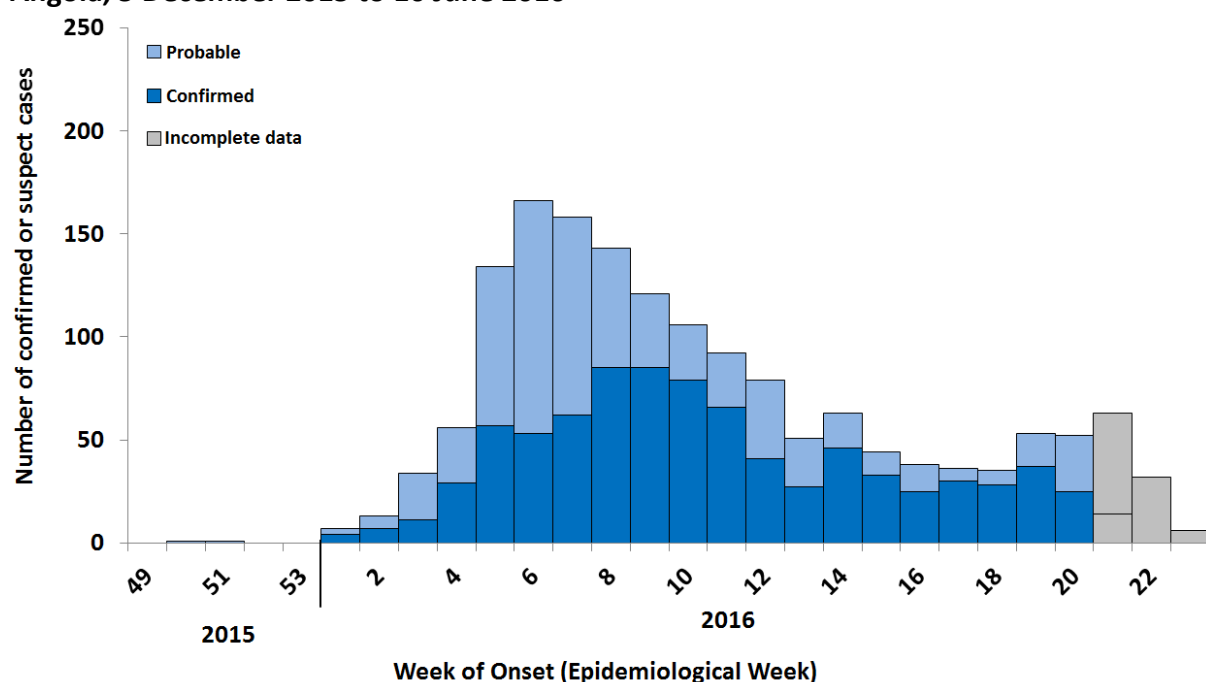
- In Angola the total number of notified cases has increased since early 2016. As of 15 June a total of 3137 cases have been reported, of which 847 are confirmed (Table 1). The total number of reported deaths is 345, of which 112 deaths reported among confirmed cases. Suspected cases have been reported in all provinces, and confirmed cases have been reported in 16 of 18 provinces and 78 of 121 reporting districts (Table 2).
- Mass vaccination campaigns first began in Luanda and have now expanded to cover most of the other affected parts of the country, recently the campaigns have focused on border areas. Despite extensive vaccination efforts circulation of the virus persists.
- As of 15 June 2016, 1044 suspected (71 deaths) and 61 laboratory confirmed cases (Table 1) have been reported in 22 health zones in the Democratic Republic of The Congo (DRC) (Table 2). Of these 61 confirmed cases: 53 were imported from Angola, two are sylvatic and six are autochthonous cases
- Surveillance efforts have increased and vaccination campaigns in DRC have centred on affected zones in Kinshasa and Kongo Central.
- Three countries already have reported confirmed yellow fever cases imported from Angola: DRC (53 cases), Kenya (two cases) and People's Republic of China (11 cases). This highlights the risk of international spread through non-immunised travellers.
- Seven countries (Brazil, Chad, Colombia, Ethiopia, Ghana, Peru and Uganda) are currently reporting yellow fever outbreaks or sporadic cases not linked to the Angolan outbreak.
- Following the advice of the Emergency Committee (EC) convened on 19 May 2016, WHO Director-General decided that urban yellow fever outbreaks in Angola and DRC are serious public health events which warrant intensified national action and enhanced international support. The events do not at this time constitute a Public Health Emergency of International Concern (PHEIC).

EPIDEMIOLOGICAL SITUATION

Angola

- From 5 December 2015 to 10 June 2016, the Ministry of Health has reported a total of 3137 suspected cases of which 847 are laboratory confirmed. The total number of reported deaths is 345, of which 112 are reported among confirmed cases.
- The epidemic curve (Fig. 1) shows the total number of notified cases increased from early 2016 and the number of laboratory confirmed cases peaked in weeks 8 to 9 (22 February to 6 March). Surveillance efforts have been strengthened in most provinces.

Figure 1. National weekly number of suspected and confirmed yellow fever cases in Angola, 5 December 2015 to 10 June 2016



Data provided by Angola yellow fever situation report published on 13 June 2016.¹ Data for the last three weeks is incomplete due to lags between onset of symptoms and reporting.

- Suspected cases have been reported in all provinces, and confirmed cases have been reported in 16 of the 18 provinces (Fig. 2). This represents confirmed cases reported in 78 of 121 districts.
- Luanda and Huambo remain the most affected provinces as of 13 June with 1778 cases (489 confirmed) and 508 cases (126 confirmed), respectively (Fig. 3).
- Local transmission is now present in 11 provinces in 33 districts (Fig. 3).
- Three countries have reported confirmed yellow fever cases imported from Angola: DRC (53 cases), Kenya (two cases) and People's Republic of China (11 cases). This highlights the risk of international spread through non-immunised travellers.

¹ <http://www.afro.who.int/en/yellow-fever/sitreps/item/8689-situation-report-yellow-fever-outbreak-in-angola-06-june-2016.html>

Figure 2. Monthly time line of infected districts in Angola, December 2015 to 15 June 2016

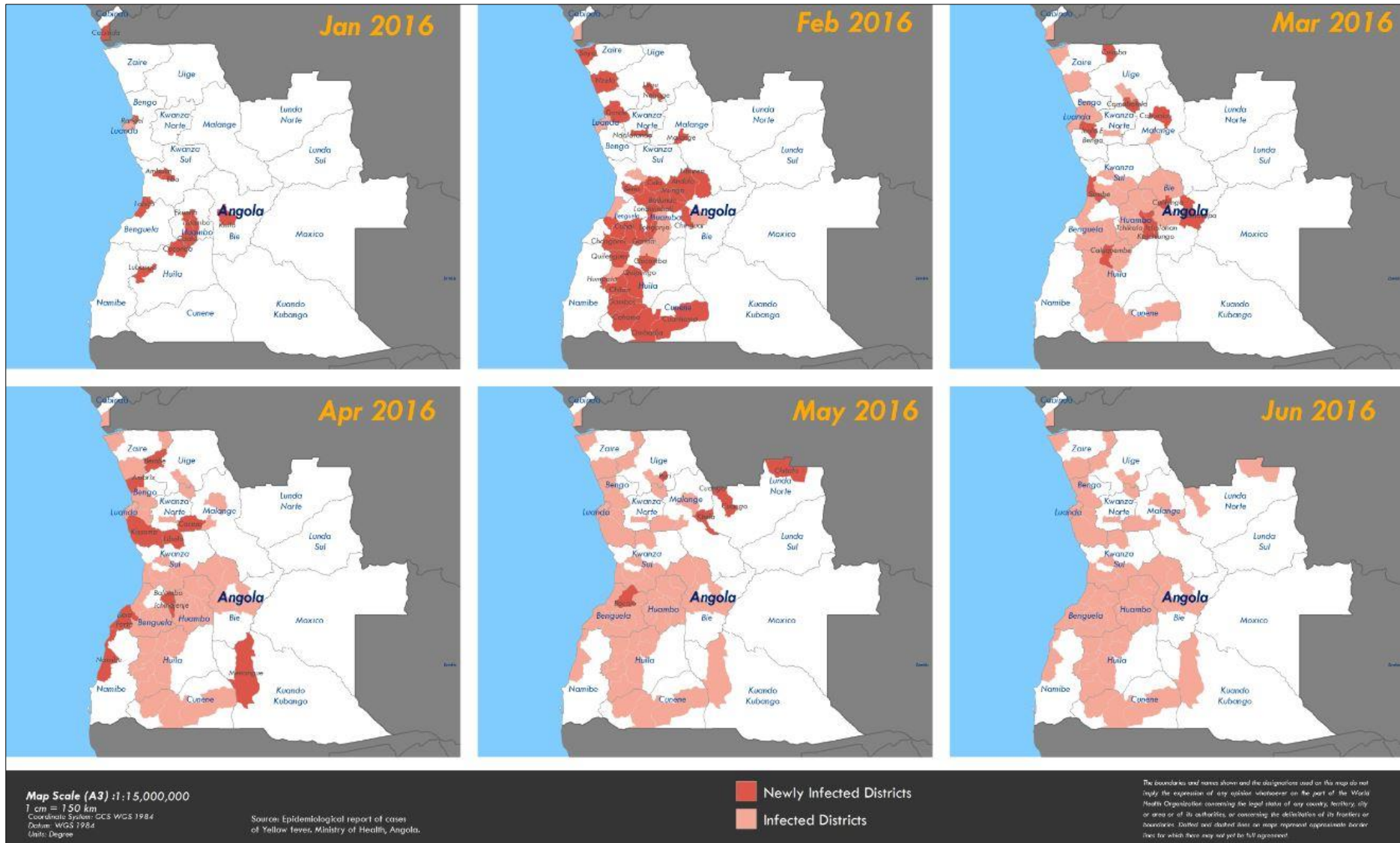
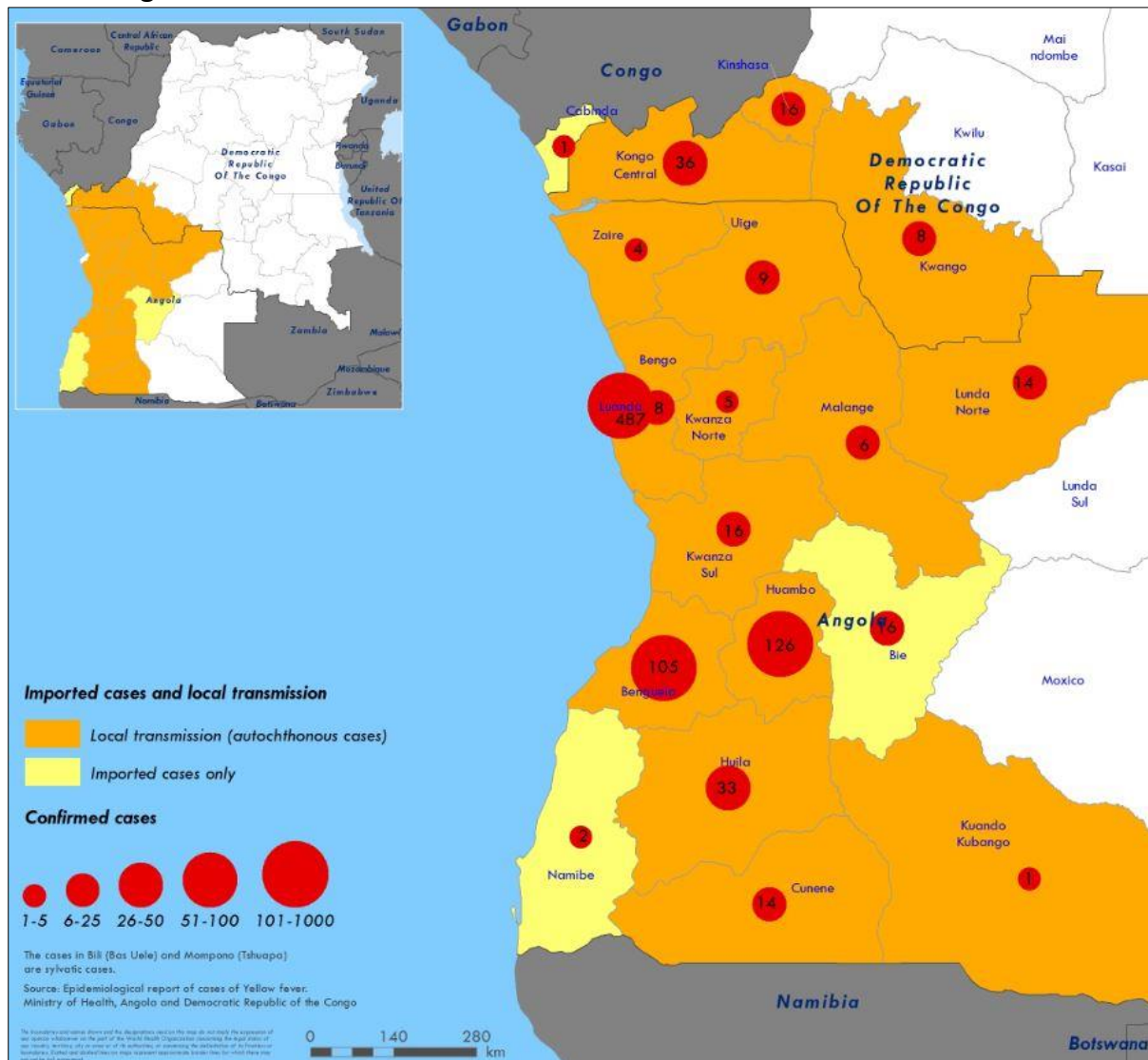


Figure 3. Distribution of yellow fever confirmed cases in Angola and Democratic Republic of The Congo as of 15 June 2016



Democratic Republic of The Congo

- On 22 March 2016, the Ministry of Health of DRC, notified human cases of yellow fever in connection with Angola. The yellow fever outbreak in DRC was officially declared on 23 April.
- As of 13 June, DRC has reported 61 laboratory confirmed cases.
- Of the 61 confirmed cases, 53 are imported from Angola (reported in Kongo Central, Kinshasa and Kwango provinces), two are sylvatic cases in Northern provinces, and six are other autochthonous cases in Ndjili, Kimbanseke and Kisenso districts (in Kinshasa), in Matadi (Kongo Central) and in Kwango province.
- The majority of these cases in DRC are male and they are mainly aged 20 to 34 years. The male preponderance is likely to reflect the gender of workers returning from Angola.
- For the first time since the beginning of the outbreak, Kisenso district (in Kinshasa province) has reported two autochthonous cases.

- Another seven cases in Kinshasa, Kongo central and Kwango district are still under investigation.

Table 1. Confirmed, probable, and suspected yellow fever cases and deaths in Angola and Democratic Republic of The Congo

Cases and deaths	Angola		Democratic Republic of The Congo	
	Recent week (4 Jun – 10 Jun)	Cumulative (5 Dec – 10 Jun)	Recent week (10 Jun – 13 Jun)	Cumulative (22 Mar – 13 Jun)
Confirmed cases	13	847	5	61
Confirmed deaths	Not available	108	Not available	Not available
Confirmed, probable, and suspected cases	182	3137	166	1044
Confirmed, probable, and suspected deaths	16	345	Not available	71

Cases and deaths include both autochthonous and imported cases. Data is as of most recent week for which data is available. These numbers are subject to change due to ongoing reclassification, retrospective investigation and availability of laboratory results.

Table 2. Geographical distribution of yellow fever cases in Angola and Democratic Republic of the Congo

Geographical distribution of cases	Angola		Democratic Republic of The Congo	
	Recent week (4 Jun – 10 Jun)	Cumulative (5 Dec – 10 Jun)	Recent week (10 Jun – 13 Jun)	Cumulative (22 Mar – 13 Jun)
Districts/ health zones with confirmed cases	0	78	1	24
Districts/ health zones with documented local transmission	2	43	1	7*
Districts/ health zones with confirmed, probable, and suspected cases	12	121	Not available	Not available
Provinces with confirmed cases	0	16	1	5*
Provinces with documented local transmission	4	12	1	3
Provinces with confirmed, probable, and suspected cases	13	18	Not available	21

*Includes sylvatic cases. Data is as of most recent week for which data is available. Data for the most recent week represents newly affected districts, health zones or provinces. These numbers are subject to change due to ongoing reclassification, retrospective investigation and availability of laboratory results.

Other countries reporting yellow fever transmission

Republic of Congo

- Republic of Congo reported two suspected cases of yellow fever in Bouenza department last week. Further investigations and laboratory analysis are needed to assess whether they are confirmed cases, their vaccination status and their link to Angola.

Uganda

- On 9 April 2016, Uganda notified WHO of yellow fever cases in the south-western district of Masaka. As of 1 June, 68 suspected cases of yellow fever have been reported in seven districts. Of those, seven cases have been laboratory confirmed (five in Masaka, one in Rukungiri and one in Kalangala).
- According to sequencing results, the outbreak is not linked to Angola and indicates high similarities with the virus which caused the outbreak in this country in 2010.

Ethiopia

- In Ethiopia investigation is ongoing on 22 suspected yellow fever cases, including five deaths reported in two districts of South Omo zone. So far one of the 19 samples was positive for yellow fever at the national laboratory (IgM positive). The last outbreak of yellow fever in this area was in 2013, which triggered a reactive vaccination campaign.

Ghana

- Ghana has reported four suspected cases from two regions: three in Brong-Ahafo region and one from Volta region. Investigations are ongoing to determine the vaccination status of the cases and to rule out a link with Angola or DRC. These are most likely sylvatic cases as these areas are known to be endemo-epidemic for yellow fever.

Chad

- Chad has reported a sylvatic case of yellow fever that had symptom onset back on the 15 January 2016.

Peru

- In Peru, as of 2 June, 54 probable cases of yellow fever have been reported including 43 confirmed cases and six deaths. Most cases are reported from Junin department (35), a known enzootic ecosystem area. Remaining cases were reported from Cusco and Lima departments. The transmission cycle is occurring in endemic-enzootic areas with a history of known transmission. This event is not related to the Angolan yellow fever outbreak. Geographical spread to the pacific coast is considered unlikely.

Brazil

- In Brazil, in March 2016, one sporadic fatal yellow fever case was reported in São Paulo state. The case does not have a history of yellow fever vaccination.

Colombia

- Colombia has reported a sylvatic case of yellow fever that had symptom onset on 19 May 2016.

Risk assessment

- The outbreak in Angola remains of high concern due to:
 - Persistent local transmission in Luanda despite the fact that approximately eight million people have been vaccinated.
 - Local transmission has been reported in 12 highly populated provinces including Luanda. Zaire and Huambo are the provinces that most recently reported local yellow fever transmission.
 - The continued extension of the outbreak to new provinces and new districts.
 - High risk of spread to neighbouring countries. As the borders are porous with substantial cross border social and economic activities, further transmission cannot be excluded. Viraemic travelling patients pose a risk for the establishment of local transmission especially in countries where adequate vectors and susceptible human populations are present.
 - Risk of establishment of local transmission in other provinces where no autochthonous cases are reported.
 - High index of suspicion of ongoing transmission in hard-to-reach areas like Cabinda.
 - Inadequate surveillance system capable of identifying new foci or areas of cases emerging.
- For DRC, a field investigation conducted in April concluded that there is a high risk of local transmission of yellow fever in the country. The outbreak has already spread to three provinces. Given the limited availability of vaccines, the large Angolan community in Kinshasa, the porous border between Angola and DRC, and the presence and the activity of the vector *Aedes* in the country. The outbreak might extend to other provinces in particular Kasai, Kasai Central and Lualaba.
- The virus in Angola and DRC is largely concentrated in main cities, however there is a high risk of spread and local transmission to other provinces in both countries. The risk is high also for potential spread to bordering countries especially those classified as low-risk (i.e. Namibia, Zambia) and where the population, travelers and foreign workers are not vaccinated for yellow fever.
- Chad, Uganda and some countries in South America (e.g. Brazil, Colombia and Peru) are also facing yellow fever outbreaks or sporadic cases of yellow fever. Those events are not related to the Angolan outbreak but there are needs for vaccines in those countries which poses additional strain on the limited global yellow fever vaccines stockpile.

RESPONSE

- An Emergency Committee (EC) regarding yellow fever was convened by WHO's Director-General under the International Health Regulations (IHR 2005) on 19 May 2016. Following advice from the EC, the Director-General decided that the urban yellow fever outbreaks in Angola and DRC are serious public health events which warrant intensified national action and enhanced international support. The events do not at this time constitute a Public Health Emergency of International Concern (PHEIC).
- The Director-General provided the following advice to Member States:

- The acceleration of surveillance, mass vaccination, risk communications, community mobilization, vector control and case management measures in Angola and DRC.
 - The assurance of yellow fever vaccination of all travellers, and especially migrant workers, to and from Angola and DRC.
 - The intensification of surveillance and preparedness activities, including verification of yellow fever vaccination in travellers and risk communications, in at-risk countries and countries having borders with the affected countries.
- A press conference was held immediately following the EC on yellow fever on 19 May. The statement can be found on the WHO website.²
 - Information on the current outbreak continues to be updated on the WHO website.³
 - An information package is being prepared to communicate about the vaccine stockpile, ICG mechanism, vaccine supply and potential use of fractionated dose.
 - WHO has deployed communications officers to support the WHO country offices in Angola and DRC.
 - In Angola, vaccination campaigns started first in Luanda province at the beginning of February, in mid-April in Benguela and Huambo, and on 16 May in Cuanza Sul, Huila and Uige provinces (Fig. 4). Vaccination campaigns have also started in Cuango district and are planned in Chitato district (Lunda Norte).
 - As of 11 June, ICG approved 2.3 million doses of yellow fever vaccine for vaccination in 12 districts in nine provinces (Bie, Cunene, Benguela, Huila, Kuanza Norte, Uige, Namibe, Cuanza Sul, Cuando and Cubango).
 - 243 690 vaccine doses will be sent to the border district of Soyo, in Zaire Province, for mass vaccination. The mass campaign is planned to start this week. An additional 1 036 500 doses of yellow fever vaccine were received and have been designated for Coango, Chitato and Soyo districts. Mass vaccination campaigns are underway in the border districts of Chitato and Coango (Lunda Norte)
 - In DRC, a vaccination campaign in 11 health zones finished on 4 June and reached around 2.1 million people. A new request for vaccines has been sent to ICG for a vaccination campaign in newly affected health zones in Kinshasa and Kwango provinces.
 - In Uganda a reactive mass vaccination campaign in Kalangala has been completed with 93.5% vaccination coverage of the population. Vaccination coverage is 88% for Masaka and 97% for Rukungiri districts.
 - Table 3 shows the number of vaccines currently available for the emergency response (6.8 million) through the ICG. The number of doses already allocated to respond to the outbreak is not included in this number. Projected number of vaccine doses corresponds to the current stockpile plus the number of vaccines planned to be produced.

² <http://www.who.int/mediacentre/news/statements/2016/ec-yellow-fever/en/>

³ <http://www.who.int/features/qa/yellow-fever/en/>

Figure 4. Vaccination population coverage in Angola as of 15 June 2016

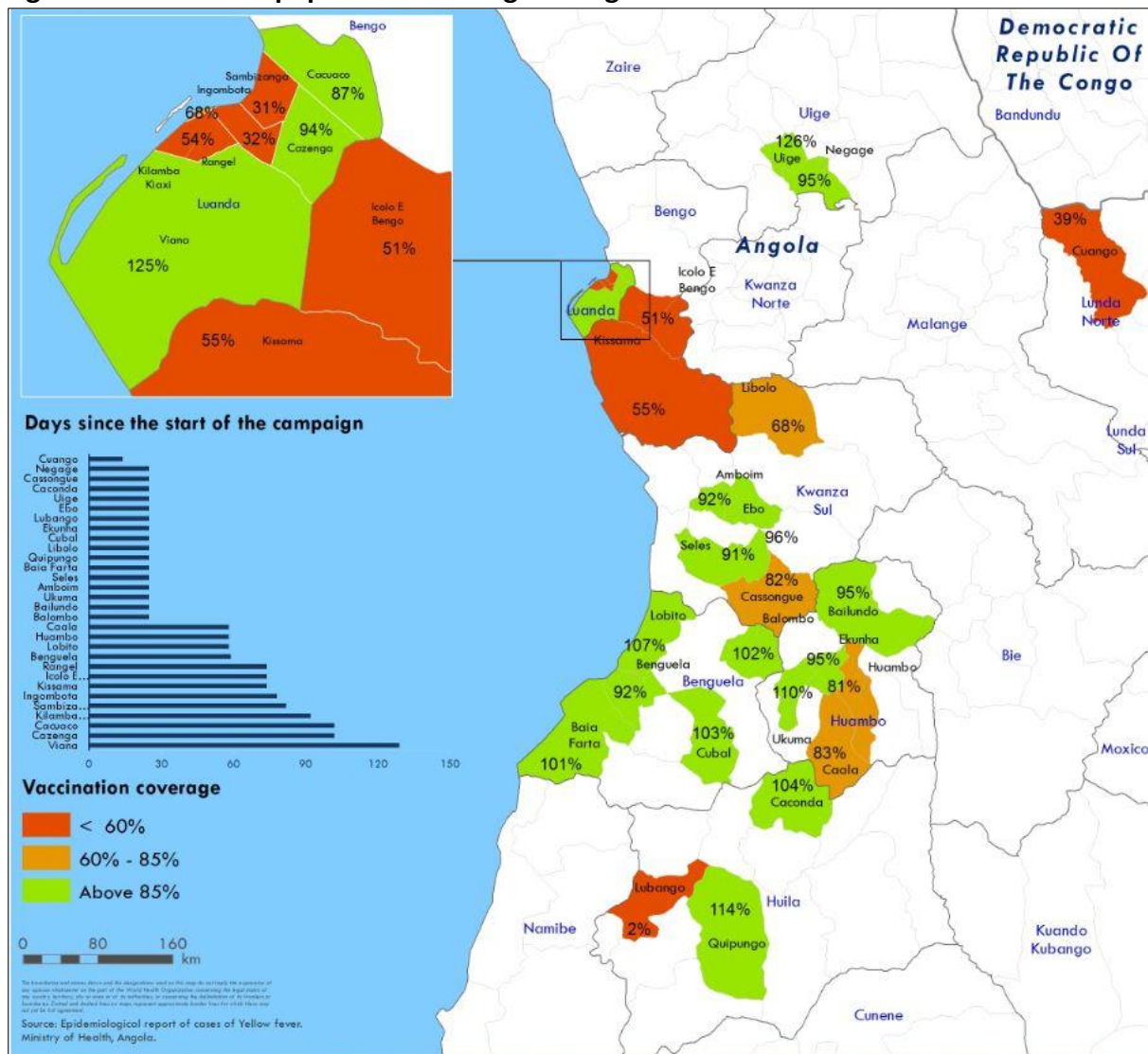


Table 3. Cumulative number of vaccine doses available and projected (in millions) for emergency stockpile

Time (as of)	Number of vaccine doses available*
17 June	6.8
Cumulative number of vaccine doses projected°	
24 June	8.0
30 June	9.1
31 July	15.3
31 August	19.5
30 September	23.5
30 October	25.5
30 November	28.1
31 December	30.1

* Number of doses available (current stock deducted by number of vaccine doses planned to be distributed for emergency response). ° Numbers are projections and are subject to change.