



## **SUMMARY**

- In Angola, as of 24 June 2016 a total of 3464 suspected cases have been reported, of which 868 are confirmed. The total number of reported deaths is 353, of which 116 were reported among confirmed cases. Suspected cases have been reported in all 18 provinces and confirmed cases have been reported in 16 provinces and 79 of 125 reporting districts.
- Mass vaccination campaigns first began in Luanda and have now expanded to cover most of the other affected parts of Angola. Recently, the campaigns have focused on border areas. Despite extensive vaccination efforts circulation of the virus persists.
- As of 23 June, in the Democratic Republic of The Congo (DRC), the total number of notified suspected cases is 1307, with 68 confirmed cases and 75 reported deaths. Cases have been reported in 22 health zones in five provinces. Of the 68 confirmed cases, 59 were imported from Angola, two are sylvatic (not related to the outbreak) and seven are autochthonous.
- Surveillance efforts have increased and vaccination campaigns in DRC have centred on affected zones in Kinshasa and Kongo Central.
- Two additional countries have reported confirmed yellow fever cases imported from Angola: Kenya (two cases) and People's Republic of China (11 cases). These cases highlight the risk of international spread through non-immunised travellers.
- Seven countries (Brazil, Chad, Colombia, Ghana, Guinea, 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, the 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).
- WHO Strategic Advisory Group of Experts (SAGE) on Immunization reviewed existing evidence that demonstrates that using a fifth of a standard vaccine dose would still provide protection against the disease for at least 12 months and possibly longer. This approach, known as fractional dosing, is under consideration as a short-term measure, in the context of a potential vaccine shortage in emergencies.<sup>1</sup>

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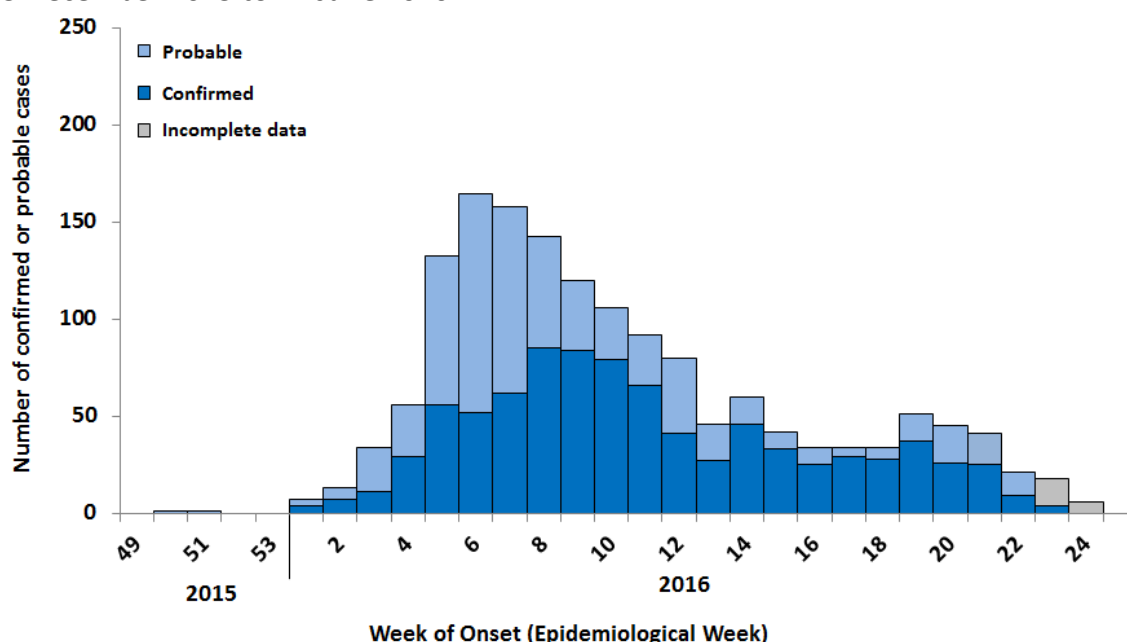
<sup>1</sup> <http://www.who.int/mediacentre/news/statements/2016/yellow-fever-vaccine/en/>

## EPIDEMIOLOGICAL SITUATION

### Angola

- From 5 December 2015 to 24 June 2016, the Ministry of Health has reported a total of 3464 suspected cases of which 868 are laboratory confirmed (Table 1). The total number of reported deaths is 353, of which 116 are reported among confirmed cases.
- During the week to 26 June, one new district in the north has reported a suspected case for the first time since the beginning of the outbreak (Tomboco district in Zaire province).
- The epidemic curve (Fig. 1) shows the total number of notified cases increased from early 2016 and the number of confirmed cases peaked in weeks 8 to 9 (22 February to 6 March). Surveillance efforts have been strengthened in most provinces.
- Suspected cases have been reported in all provinces, and confirmed cases have been reported in 16 of the 18 provinces (Fig. 2). Confirmed cases have been reported in 79 of 125 reporting districts (Table 2).
- Luanda and Huambo remain the most affected provinces as of 24 June with 1896 cases (487 confirmed) and 564 cases (127 confirmed), respectively (Fig. 3).
- Local transmission is now reported in 43 districts in 12 provinces (Fig. 3). The confirmed case with the most recent date of symptom onset, 10 June, was reported in Camabatela district, in Kwanza Norte province.
- The majority of cases are among males aged between nine and 19 years.
- Three countries have reported confirmed yellow fever cases imported from Angola: DRC (59 cases), Kenya (two cases) and People's Republic of China (11 cases). These cases highlight the risk of international spread through non-immunised travellers.

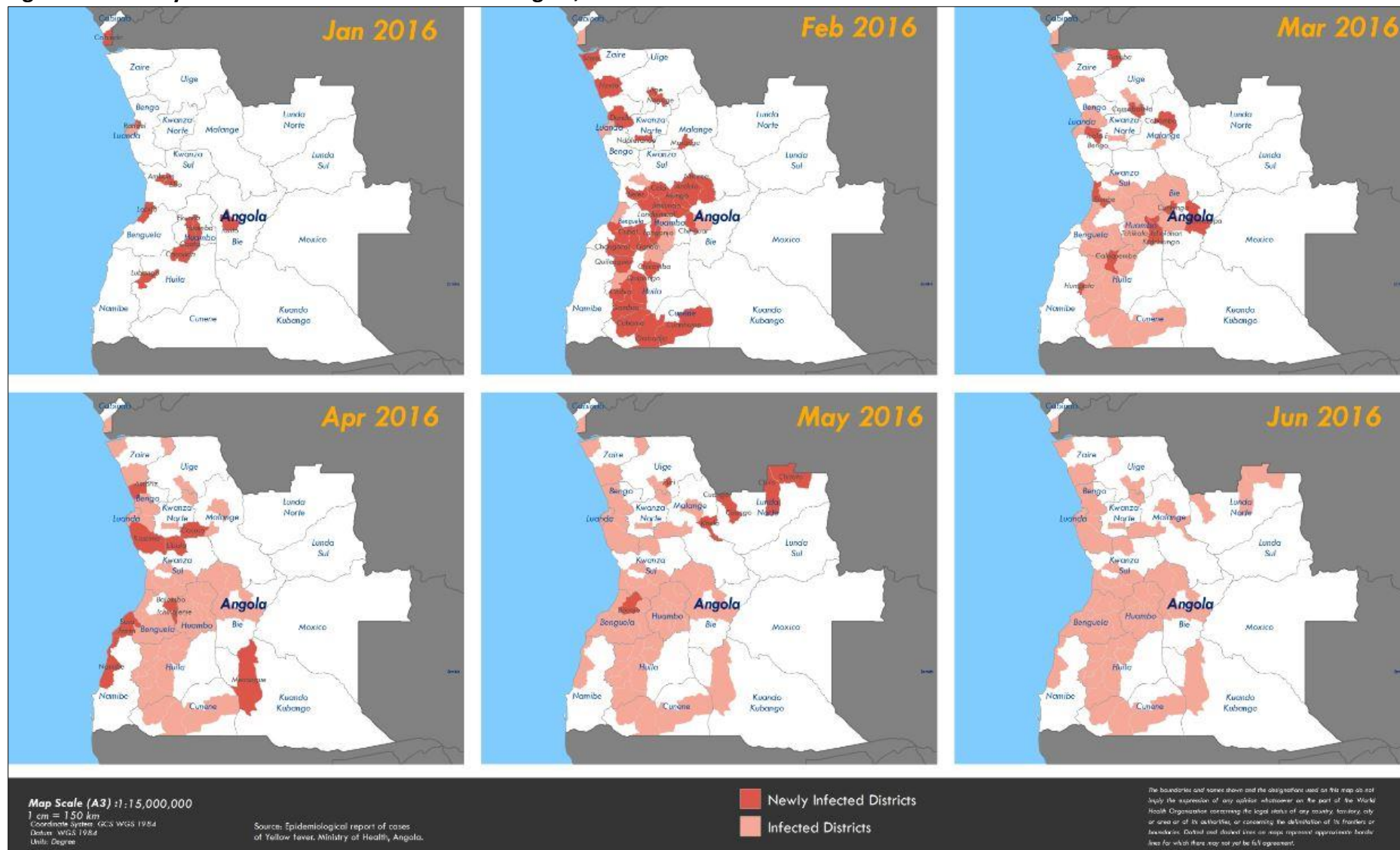
**Figure 1. National weekly number of probable and confirmed yellow fever cases in Angola, 5 December 2015 to 24 June 2016**



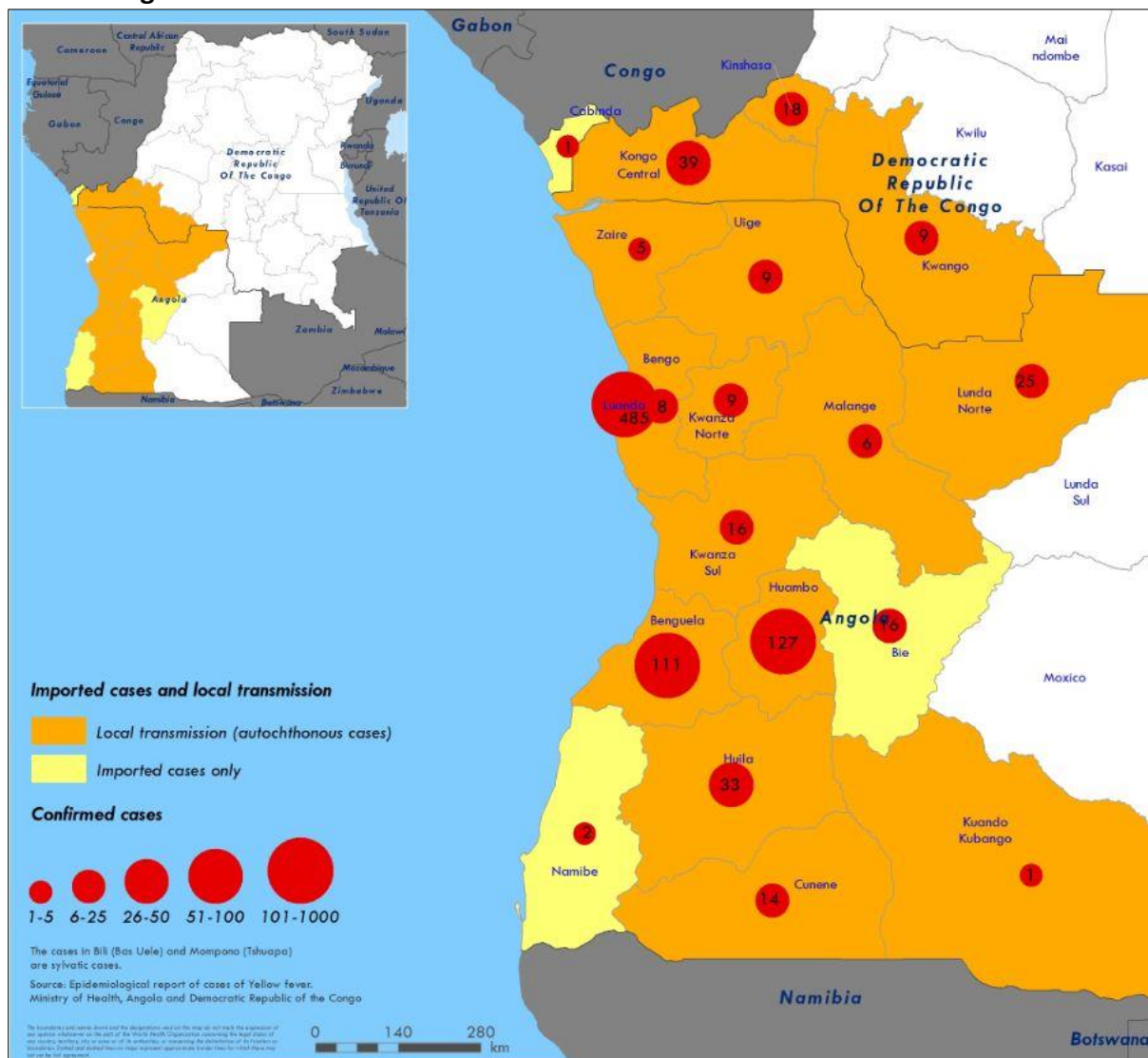
Data provided by Angola yellow fever situation report published on 27 June 2016.<sup>2</sup> Data for the last three weeks is incomplete due to lags between onset of symptoms and reporting.

<sup>2</sup> <http://www.afro.who.int/en/yellow-fever/sitreps/item/8747-situation-report-yellow-fever-outbreak-in-angola-20-june-2016.html>

Figure 2. Monthly time line of infected districts in Angola, December 2015 to 29 June 2016



**Figure 3. Distribution of yellow fever confirmed cases in Angola and Democratic Republic of The Congo**



Data is as of 24 June for Angola and 28 June for Democratic Republic of The Congo.

### Democratic Republic of The Congo (DRC)

- On 22 March 2016, the Ministry of Health of DRC notified WHO of yellow fever cases in connection with Angola. The yellow fever outbreak in DRC was officially declared on 23 April.
- To date, DRC has reported 1307 suspect and 68 confirmed cases with 75 reported deaths (Table 1). Results for 13 probable cases are pending including one case in Kasai, a province which has not previously reported yellow fever cases.
- The confirmed case with the most recent date of symptom onset, 12 June, was reported in Muanda health zone in Kongo Central province.
- Of the 68 confirmed cases, 59 are imported from Angola (reported in Kongo Central, Kinshasa and Kwango provinces), two are sylvatic cases in Northern provinces, and seven are other autochthonous cases. The seven autochthonous cases were reported in Ndjili,

Kimbanseke and Kisenso districts (Kinshasa province), in Matadi district (Kongo Central province) and in Kahemba (Kwango province) (Fig. 3).

- The majority of the cases in DRC are male and they are mainly aged between 20 and 34 years.

**Table 1: Reported yellow fever cases and deaths in Angola and Democratic Republic of The Congo**

Cases and deaths	Angola		Democratic Republic of The Congo	
	Recent week (18 Jun – 24 Jun)	Cumulative (5 Dec – 24 Jun)	Recent week (19 Jun – 24 Jun)	Cumulative (22 Mar – 24 Jun)
Confirmed cases	3	868	0	68
Confirmed deaths	Not available	116	Not available	Not available
Reported cases	170	3464	183	1307
Reported deaths	6	353	Not available	75

*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 (18 Jun – 24 Jun)	Cumulative (5 Dec – 24 Jun)	Recent week (19 Jun – 24 Jun)	Cumulative (1 Jan – 24 Jun)
Districts/ health zones with confirmed cases	0	79	0	22
Districts/ health zones with documented local transmission	0	43	0	7*
Provinces with confirmed cases	0	16	0	5*
Provinces with documented local transmission	0	12	0	3

*\*Includes sylvatic 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. Data for the most recent week represents newly affected districts/ health zones or provinces.*

## Other countries reporting yellow fever transmission

### Republic of Congo

- Republic of Congo reported two suspected cases of yellow fever in Bouenza department. There are no updates regarding this event since last week. Further investigations and laboratory analysis are ongoing to assess whether these are confirmed cases, the vaccination statuses and the potential links to Angola.

### Uganda

- On 9 April 2016, Uganda notified WHO of yellow fever cases in the south-western district of Masaka. To date, the situation remains stable and there are no updates regarding this event since the last week.
- 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.



## Ghana

- Ghana has reported sporadic suspected cases between December 2015 and April 2016 from known endemoepidemic areas. Investigations are ongoing. This event is not linked to the Angolan yellow fever outbreak.

## Chad

- Chad has reported a sylvatic case of yellow fever that had symptom onset on 15 January 2016. To date, the situation remains stable and there are no updates regarding this event since last week.

## Guinea

- Guinea has reported 39 suspect cases since January 2016. Investigation is ongoing and additional information was requested regarding the localization, vaccination status, symptoms and travel history.
- The last major yellow fever outbreaks in Guinea were reported from 2000 to 2001 in Mamou, Labe, Koubia, Malet and Nzérékoré and in 2005 in Fouta Djallon, Bake, Biffa, Gaul and Kondara.

## Peru

- In Peru, as of the week ending 19 June, 42 probable and 37 confirmed cases of yellow fever with nine deaths have been reported. Cases are reported from seven departments with most cases reported from Junin department (58 probable and confirmed cases). The transmission cycle is occurring in endemic-enzootic areas with a history of known transmission. This event is not linked to the Angolan yellow fever outbreak. Geographical spread to the pacific coast is considered unlikely.

## Brazil

- In Brazil, in March 2016, one sporadic sylvatic fatal yellow fever case was reported in São Paulo state. The case did not have a history of yellow fever vaccination. To date, the situation remains stable and there are no updates regarding this event since last week.

## Colombia

- Colombia has reported one sylvatic fatal case of yellow fever that had symptom onset on 19 May 2016. The case did not have a history of yellow fever vaccination. To date, the situation remains stable and there are no updates regarding this event since last week.

### **Risk assessment**

- The outbreak in Angola remains of high concern due to:
  - Persistent local transmission despite the fact that nearly 11 million people have been vaccinated;
  - Local transmission has been reported in 12 highly populated provinces including Luanda.
  - 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;
- In DRC, 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. In addition, the risk is high 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. These events are not related to the Angolan outbreak but there remains a need for vaccines in those countries which poses additional strain on the limited global yellow fever vaccine 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)<sup>3</sup>.
- Information on the current outbreak continues to be updated on the WHO website<sup>4</sup>.

<sup>3</sup> <http://www.who.int/mediacentre/news/statements/2016/ec-yellow-fever/en/>

<sup>4</sup> <http://www.who.int/features/qa/yellow-fever/en/>

- An information package is being prepared to communicate about the vaccine stockpile, ICG mechanism, vaccine supply and potential use of fractional dosing.
- WHO Strategic Advisory Group of Experts (SAGE) on Immunization reviewed existing evidence that demonstrates that using a fifth of a standard vaccine dose would still provide protection against the disease for at least 12 months and possibly much longer<sup>5</sup>. This approach, known as fractional dosing, is under consideration as a short-term measure, in the context of a potential vaccine shortage for use in emergencies.
- As of 30 June 2016, vaccination coverage has reached 13 million people in Angola, 5.5 million people in DRC and around 1.1 million people in Uganda (Table 3).
- The number of vaccines currently available for the emergency response is 6 million through the ICG (Table 4). The amount of doses already allocated to respond to the outbreak is not included in this number.

**Table 3. Vaccination coverage in Angola, the Democratic Republic of The Congo (DRC) and Uganda as of 30 June 2016**

Country	Target areas: Province/Region (District/Health zone)	Doses approved (in millions)	Delivery date (2016)
<b>Angola</b>	Luanda (Viana)	1.8	2 & 4 Feb
	Luanda (all 8 districts)	5.6	8 & 27 Feb, 14 & 25 Mar
	Benguela, Bie, Huambo, Kwanza Sul	4.3	6 Apr, 11 May & 12 May
	Benguela, Bie, Cunene, Huila, Kuando Kubango, Kwanza Norte, Kwanza Sul, Namibe, Uige	0.7	1, 11, 21 & 27 Jun
	Huambo (Londumbali), Kwanza Norte (Camabatela, Cambambe), Luanda (Cazenga), Zaire (Soyo)	0.6	To be confirmed
<b>DRC</b>	Kinshasa, Kongo Central	2.2	13, 17-19 May
	Kwango province (3 health zones), Kinshasa (Kisenso)	3.3	2 Jul
<b>Uganda</b>	Kalangala (Masaka), Rukungiri	1.1	3 May
	Kalangala	To be confirmed	20 May

<sup>5</sup> <http://www.who.int/mediacentre/news/statements/2016/yellow-fever-vaccine/en/>



**Table 4. Cumulative number of vaccine doses available and projected (in millions) for emergency stockpile**

Time (as of)	Number of vaccine doses available*
28 June	6.0
Cumulative number of vaccine doses projected°	
31 July	11.1
28 August	15.3
30 September	15.0
31 October	17.0
30 November	15.1
31 December	17.1

\* 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.

**Figure 4. Vaccination population coverage in Angola as of 29 June 2016**

