



## **SUMMARY**

- In Angola, as of 1 July 2016 a total of 3552 suspected cases have been reported, of which 875 are confirmed. The total number of reported deaths is 355, of which 117 were reported among confirmed cases. Suspected cases have been reported in all 18 provinces and confirmed cases have been reported in 16 of 18 provinces and 80 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.
- Eleven reactive and pre-emptive mass vaccination campaigns are ongoing in several districts in Benguela, Huambo, Huila, Kwanza Norte, Kwanza Sul, Lunda Norte and Uige provinces. Six other mass vaccination campaigns are nearing completion. Mop-up campaigns are being implemented in parts of the provinces of Cunene, Lunda Norte, Uige and Zaire.
- There are no updates regarding the epidemiological situation in the Democratic Republic of The Congo (DRC). According to the latest available information (as of 24 June), 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 of 26 provinces. Of the 68 confirmed cases, 59 were imported from Angola, two are sylvatic (not related to the outbreak) and seven are autochthonous.
- In DRC, surveillance efforts have increased and vaccination campaigns have centred on affected health 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 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.

- 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>

## EPIDEMIOLOGICAL SITUATION

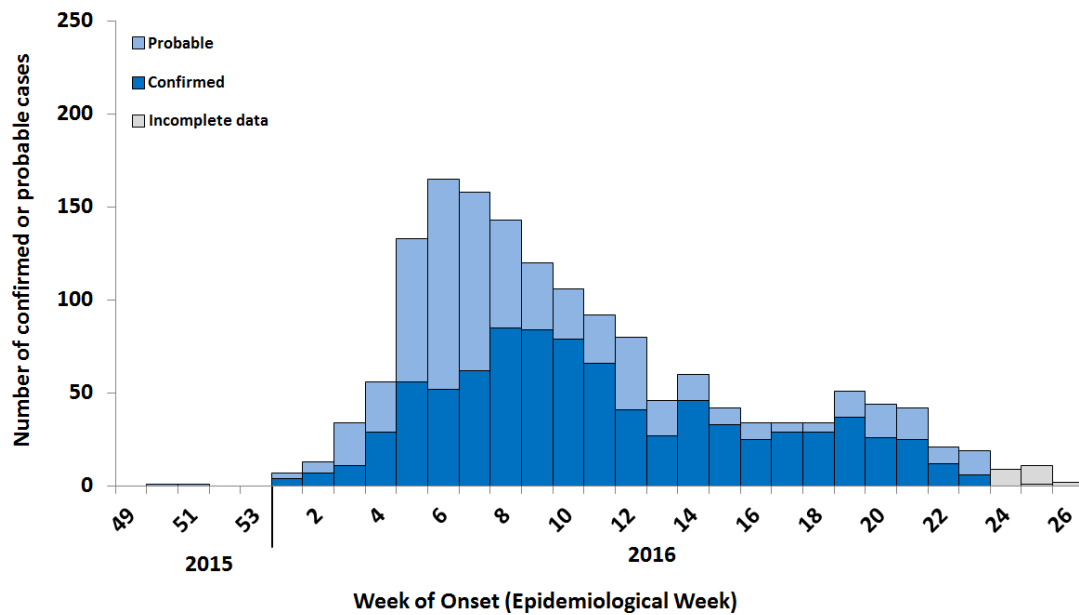
### Angola

- From 5 December 2015 to 1 July 2016, the Ministry of Health has reported a total of 3552 suspected cases of which 875 are laboratory confirmed (Table 1). The total number of reported deaths is 355, of which 117 have been reported among confirmed cases.
- Suspected cases have been reported in all provinces, and confirmed cases have been reported in 16 of 18 provinces (Fig. 2). Confirmed cases have been reported in 80 of 125 reporting districts (Table 2).
- The epidemic curve (Fig. 1) shows the total number of confirmed and probable 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.
- During the week to 1 July, one new district, Marimba, in the Northern province of Malange has reported a suspected case for the first time since the beginning of the outbreak. No new districts have reported local transmission this week.
- Luanda and Huambo remain the most affected provinces as of 1 July with 1927 cases (487 confirmed) and 578 cases (127 confirmed), respectively (Fig. 3). Benguela province, and in particular the cities of Benguela and Lobito, have become of particular concern. According to reports surveillance in these two areas is insufficient and there are substantial delays in reporting.
- Local transmission is now reported in 43 districts in 12 provinces (Fig. 3). The confirmed case with the most recent date of symptom onset, 22 June, was reported in Soyo district in Zaire 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.

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

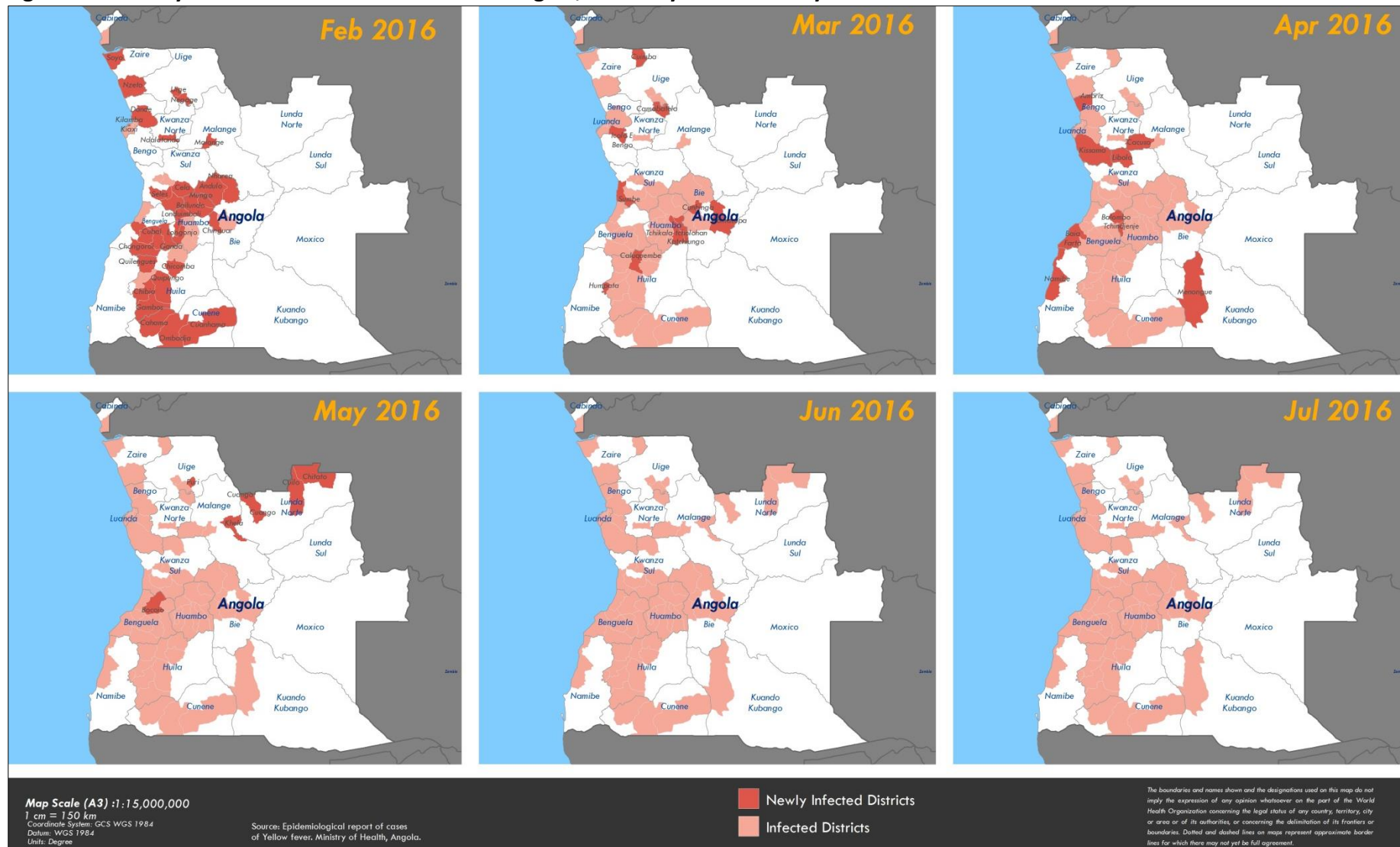
**Figure 1. National weekly number of probable and confirmed yellow fever cases in Angola, 5 December 2015 to 1 July 2016**



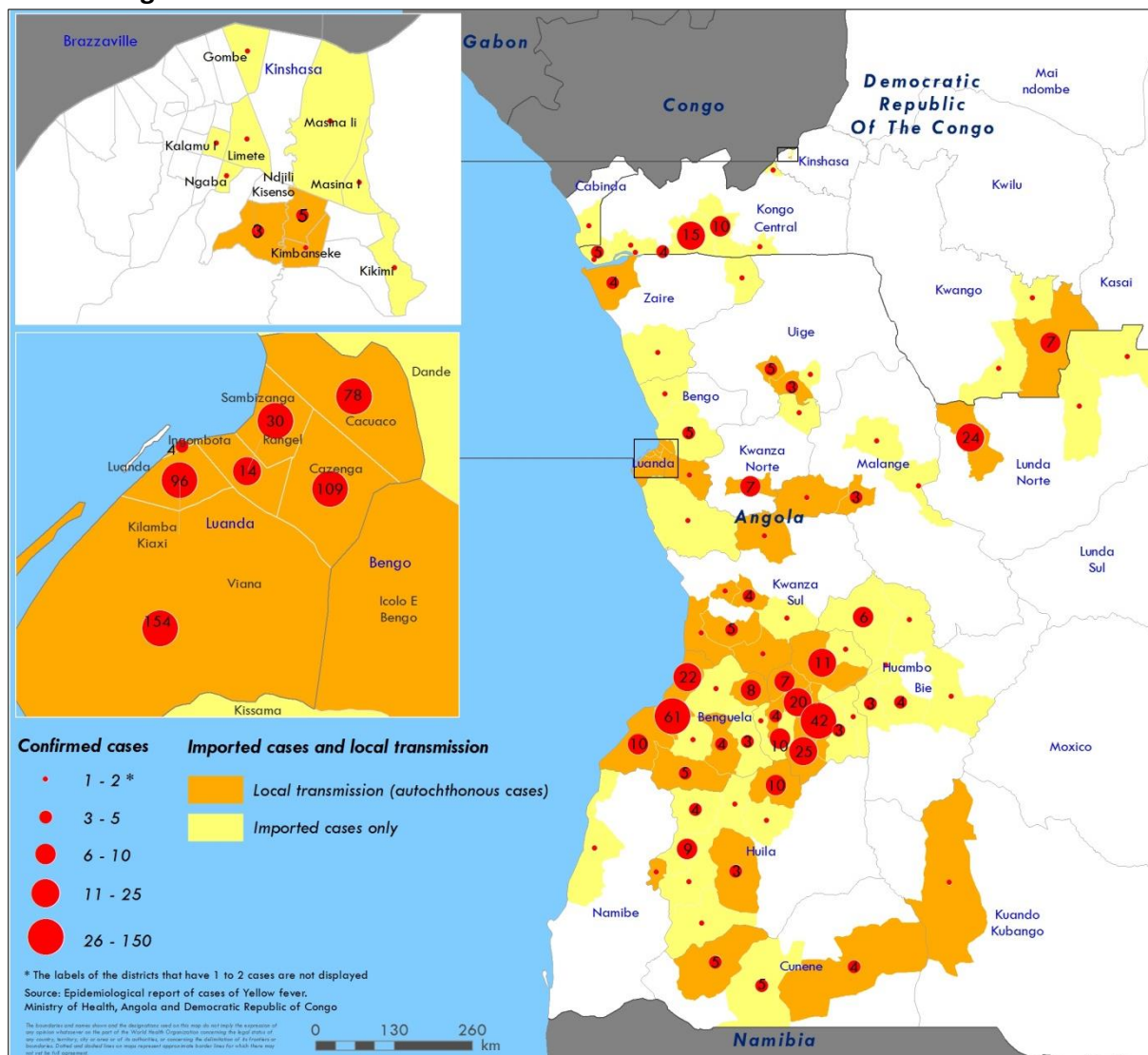
Data provided by Angola yellow fever situation report published on 4 July 2016.<sup>2</sup> Data for the last three weeks is incomplete due to lags between onset of symptoms and reporting.

<sup>2</sup> <http://www.afro.who.int/en/yellow-fever/sitreps/item/8782-situation-report-yellow-fever-outbreak-in-angola-4-july-2016.html>

**Figure 2. Monthly timeline of infected districts in Angola, February 2016 to 1 July 2016**



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



Data is as of 1 July 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 suspected yellow fever cases in connection with Angola. The yellow fever outbreak in DRC was officially declared on 23 April.
- There are no updates regarding the epidemiological situation in DRC. As of 24 June, DRC has reported 1307 suspected and 68 confirmed cases with 75 reported deaths (Table 1). Results for at least 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 (25 Jun – 1 Jul)	Cumulative (5 Dec – 1 Jul)	Recent week (19 Jun – 24 Jun)	Cumulative (22 Mar – 24 Jun)
Confirmed cases	2*	875	0	68
Confirmed deaths	Not available	117	Not available	Not available
Reported cases	88	3552	183	1307
Reported deaths	2	355	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.

\*5 additional cases were newly reclassified as confirmed for previous weeks and have been included in the cumulative total.

**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 (25 Jun – 1 Jul)	Cumulative (5 Dec – 1 Jul)	Recent week (19 Jun – 24 Jun)	Cumulative (1 Jan – 24 Jun)
Districts/ health zones with confirmed cases	0	80	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. Further investigations and laboratory analysis are ongoing to assess whether these are confirmed cases, the vaccination statuses and the potential links to Angola.

### Guinea

- Guinea has reported 39 suspected cases since January 2016, including 8 probable cases. There are no updates regarding this event since last week. Investigations are 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.

#### **Chad, Ghana and Uganda**

- The situation in these three countries remains stable and there are no changes since last week.

#### **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 were 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. There are no updates regarding this event since last week. This event is not linked to the Angolan yellow fever outbreak. Geographical spread to the pacific coast is considered unlikely.

#### **Brazil and Colombia**

- The situation in these two countries remains stable and there are no changes since last week.



### **Risk assessment**

- The outbreak in Angola remains of high concern due to:
  - Persistent local transmission despite the fact that approximately 15 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 such as the province of Cabinda;
- In DRC, the outbreak has 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.
- Some African countries (Chad, Ghana, Guinea, Republic of Congo and Uganda) and some countries in South America (Brazil, Colombia and Peru) have reported cases of yellow fever in 2016. 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<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/>



- The WHO Strategic Advisory Group of Experts (SAGE) on Immunization reviewed existing evidence that demonstrates that using a fifth of a standard vaccine dose would provide protection against yellow fever 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 5 July 2016, vaccination coverage has reached approximately 15 million people in Angola, 3 million people in DRC and 1.3 million people in Uganda (Table 3).
- The number of vaccines currently available for the emergency response is 6.6 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 5 July 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	3.3	1, 11, 21 & 27 Jun
<b>DRC</b>	Kinshasa, Kongo Central	2.2	13, 17-19 May
	Kwango province (3 health zones), Kinshasa (Kisenso)	1.1	2 Jul
<b>Uganda</b>	Masaka, Rukungiri	0.7	3 May
	Kalangala	0.06	20 May

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

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

Date (as of)	Number of vaccine doses available*
5 July	6.6
Cumulative number of vaccine doses projected°	
31 July	10.3
28 August	13.7
30 September	13.2
31 October	15.2
30 November	14.6
31 December	16.6

\*Number of doses available is the current stock minus 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 1 July 2016**

