



SUMMARY

- In Angola, as of 15 July 2016 a total of 3682 suspected cases have been reported, of which 877 are confirmed. The total number of reported deaths is 361, 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 79 of 125 reporting districts.
- Mass reactive 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.
- Mass vaccination campaigns were completed in several districts in Benguela, Huambo, Huila, Kwanza Norte, Lunda Norte, Malange and Uige provinces. All districts continued with house to house immunization campaigns and routine vaccination.
- For the last four weeks the national laboratory in the Democratic Republic of The Congo (DRC) has been unable to confirm or discard any suspected cases of yellow fever due to technical issues and corrective actions are underway. According to the latest available information (as of 11 July), the total number of notified suspected cases is 1798, with 68 confirmed cases (as of 24 June) and 85 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. Reactive vaccination campaigns started on 20 July in Kisenso health zone in Kinshasa province and in Kahemba, Kajiji and Kisandji health zones in Kwango province.
- 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) have reported 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.

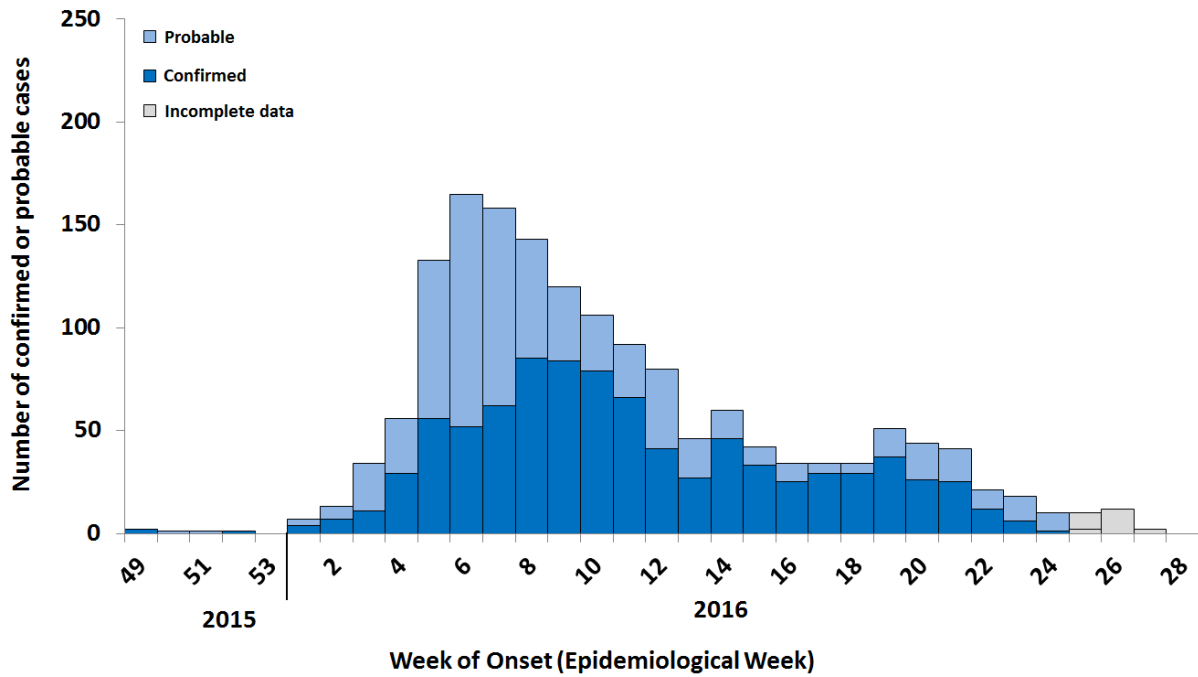
- WHO Strategic Advisory Group of Experts (SAGE) on Immunization reviewed existing evidence that demonstrates that using a fifth of a standard vaccine dose would still provide protection against the disease for at least 12 months and possibly longer. This approach, known as fractional dosing, will be implemented in a pre-emptive mass vaccination campaign in Kinshasa.

EPIDEMIOLOGICAL SITUATION

Angola

- From 5 December 2015 to 15 July 2016, the Ministry of Health has reported a total of 3682 suspected cases of which 877 are laboratory confirmed (Table 1). The total number of reported deaths is 361, 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 provinces in 79 of 125 reporting districts (Fig.2, 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. From epidemiological week 23 onwards, the number of suspected and confirmed cases has been declining.
- No laboratory confirmed cases of yellow fever have been reported in Luanda, or Huambo provinces since May. Nevertheless these two provinces have reported the highest number of total cases as of 15 July, with 1965 cases (487 confirmed) reported in Luanda and 607 cases (127 confirmed) in Huambo (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, 23 June, was reported in Cuanhama district in Cunene 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 15 July 2016



Data provided by Angola yellow fever situation report published on 18 July 2016. Data for the last four weeks is incomplete due to delays in reporting.

Figure 2. Monthly timeline of infected districts in Angola, February 2016 to 15 July 2016

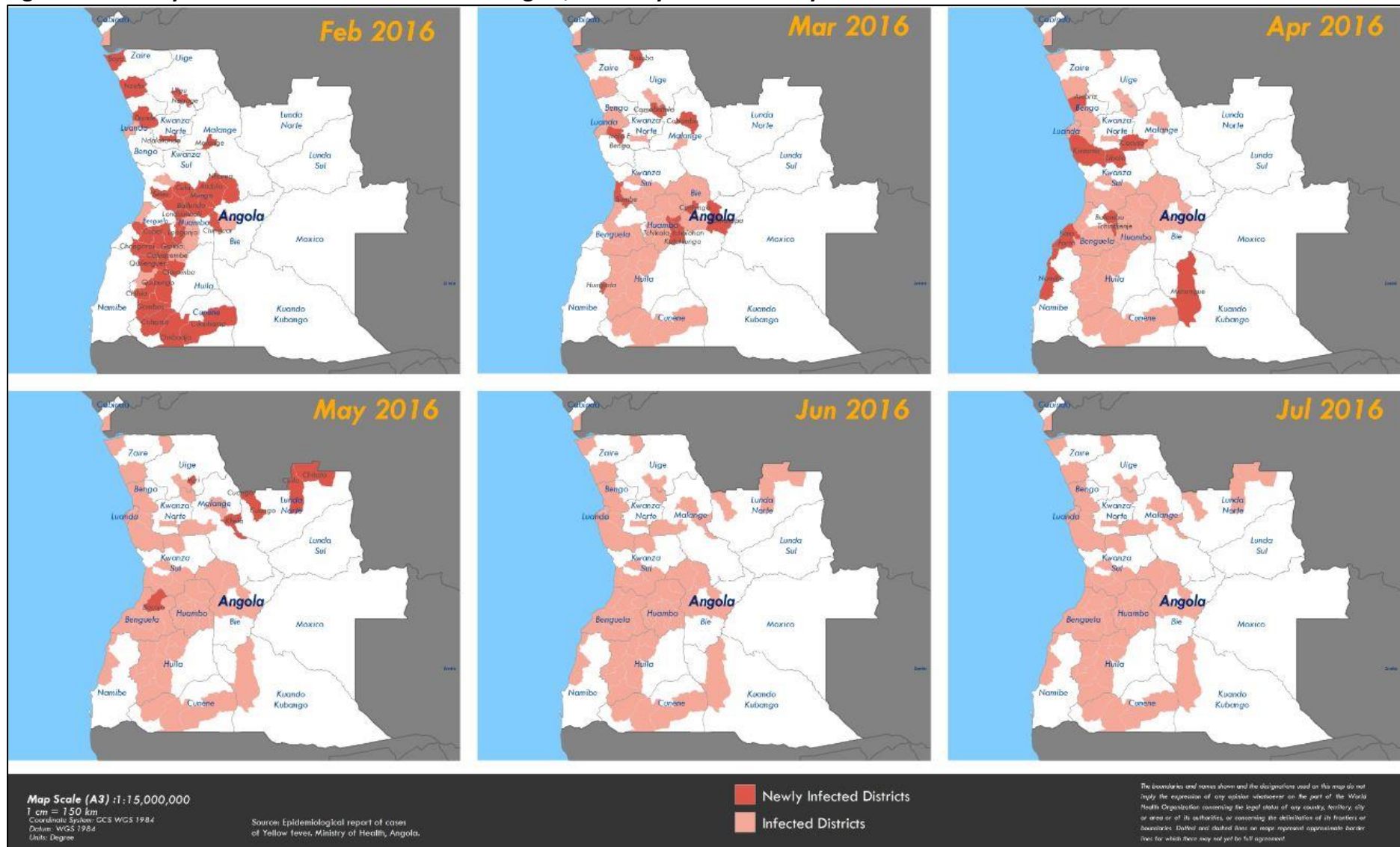
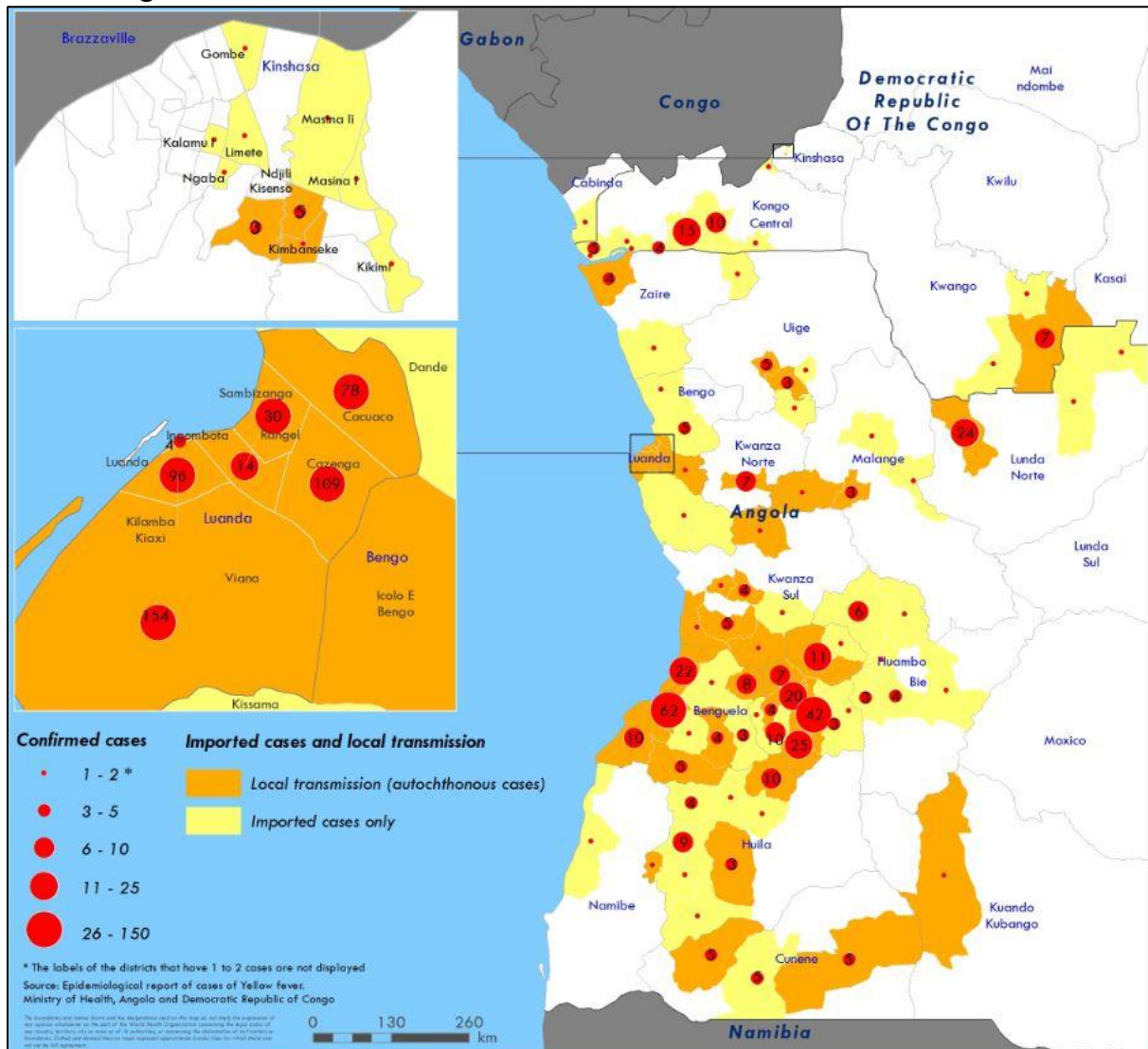


Figure 3. Distribution of yellow fever confirmed cases in Angola and Democratic Republic of The Congo



Data is as of 15 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. For the last four weeks the national laboratory in DRC has been unable to confirm or discard any suspected cases of yellow fever due to technical issues. According to the latest available information (as of 11 July), DRC has reported 1798 suspected and 68 confirmed cases (as of 24 June) with 85 reported deaths (Table 1). Results for at least 300 suspected cases are pending, including one case in Kasai: a province which has not previously reported yellow fever cases.
- Of the 68 confirmed cases (as of 24 June), 59 were imported from Angola (reported in Kongo Central, Kinshasa and Kwango provinces), two were sylvatic cases in Northern

provinces, and seven were 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 (9 Jul – 15 Jul) | Cumulative (5 Dec – 15 Jul) | Recent week (17 Jun – 24 Jun) | Cumulative (22 Mar – 24 Jun) |
| Confirmed cases | 0 | 877 | Not available | 68 |
| Confirmed deaths | Not available | 117 | Not available | Not available |
| Reported cases | 58 | 3682 | 285 | 1798 |
| Reported deaths | 4 | 361 | Not available | 85 |

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 (9 Jul – 15 Jul) | Cumulative (5 Dec – 15 Jul) | Recent week (17 Jun – 24 Jun) | Cumulative (1 Jan – 24 Jun) |
| Districts/ health zones with confirmed cases | 0 | 79 | Not available | 22 |
| Districts/ health zones with documented local transmission | 0 | 43 | Not available | 7* |
| Provinces with confirmed cases | 9 | 16 | Not available | 5* |
| Provinces with documented local transmission | 0 | 12 | Not available | 3 |

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. *Includes sylvatic cases.

Other countries reporting yellow fever transmission

Peru

- In Peru, as of the week ending on 3 July, 24 probable and 50 confirmed cases of yellow fever with 17 deaths have been reported this year. 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, Chad, Colombia, Ghana, Guinea, Republic of Congo and Uganda

- The situation in these 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 Concern¹.
- Information on the current outbreak continues to be updated on the WHO website².

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

² <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 longer³. This approach, known as fractional dosing, will be implemented in a pre-emptive mass vaccination campaign in Kinshasa.
- WHO has sent more than 19 million vaccine doses to Angola, DRC and Uganda through the International Coordinating Group global stockpile. This is three times the volume normally needed in one year for outbreak use and is unprecedented. In the past, the global stockpile has never used more than 4 million doses to control a yellow fever outbreak.
- As of 20 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 9.3 million through the ICG (Table 4). The amount of doses already allocated to respond to the outbreak is not included in this number.
- WHO is planning pre-emptive vaccination campaigns in Angola and DRC border areas, as well as a vaccination campaign using fractional dose in Kinshasa.
- In DRC, reactive vaccination campaigns started on 2 July, in Kisenso health zone in Kinshasa province and in Kahemba, Kajiji and Kisandji health zones in Kwango province.

Table 3. Vaccination coverage in Angola, the Democratic Republic of The Congo (DRC) and Uganda as of 20 July 2016

| Country | Target areas: Province/Region (District/Health zone) | Doses approved (in millions) | Delivery date (2016) |
|---------------|--|---------------------------------|-------------------------|
| Angola | 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 |
| DRC | Kinshasa, Kongo Central | 2.2 | 13, 17-19 May |
| | Kwango province (3 health zones), Kinshasa (Kisenso) | 1.1 | 2 Jul |
| Uganda | Masaka, Rukungiri | 0.7 | 3 May |
| | Kalangala | 0.06 | 20 May |

³ <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 | 9.3 |
| Cumulative number of vaccine doses projected° | |
| 31 July | 11.4 |
| 28 August | 14.8 |
| 30 September | 18.6 |
| 31 October | 20.6 |
| 30 November | 24.5 |
| 31 December | 26.5 |

*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 15 July 2016

