



## SUMMARY

- A yellow fever outbreak was detected in Luanda, Angola late in December 2015. The first cases were confirmed by the National Institute for Communicable Diseases (NICD) in South Africa on 19 January 2016 and by the Institut Pasteur Dakar (IP-D) on 20 January. Subsequently, a rapid increase in the number of cases has been observed.
- As of 1 June 2016, Angola has reported 2893 suspected cases of yellow fever with 325 deaths. Among those cases, 788 have been laboratory confirmed. Despite extensive vaccination campaigns in several provinces, circulation of the virus persists.
- Cunene and Malanje provinces have reported, for the first time since the beginning of the outbreak, 5 autochthonous cases.
- On 22 March 2016, the Ministry of Health of DRC confirmed cases of yellow fever in connection with Angola. The government officially declared the yellow fever outbreak on 23 April. As of 1 June, DRC has reported three probable cases and 52 laboratory confirmed cases: 44 of those are imported from Angola, reported in Kongo Central, Kinshasa and Kwango (formerly Bandundu) provinces, two are sylvatic cases in Northern provinces, and two other autochthonous cases in Ndjili (Kinshasa) and in Matadi (Kongo Central). The possibility of locally acquired infection is under investigation for at least four non-classified cases.
- In Uganda, the Ministry of Health notified yellow fever cases in Masaka district on 9 April 2016. As of 1 June, 68 suspected cases, of which three are probable and seven are laboratory confirmed, have been reported from three districts: Masaka, Rukungiri and Kalangala. According to sequencing results, those clusters are not epidemiologically linked to Angola.
- 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. There is also a high risk of potential spread to bordering countries especially those previously classified as low-risk for yellow fever disease (i.e. Namibia, Zambia) and where the population, travellers and foreign workers are not vaccinated against yellow fever.
- Three countries have reported confirmed yellow fever cases imported from Angola: Democratic Republic of The Congo (DRC) (44 cases), Kenya (two cases) and People's Republic of China (11 cases). This highlights the risk of international spread through non-immunised travellers.

- A further three countries have reported suspected cases of yellow fever: Republic of Congo (one case), Sao Tome and Principe (two cases) and Ethiopia (22 cases). Investigations are ongoing to identify the vaccination status of the cases and determine if they are linked with Angola.
- 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). The statement can be found on the WHO website.<sup>1</sup>

## SURVEILLANCE

### Angola

- From 5 December 2015 to 1 June 2016, the Ministry of Health has reported a total of 2893 suspected cases with 325 deaths and 788 laboratory confirmed cases. There are confirmed cases in 16 of the 18 provinces (Fig. 1) and suspected cases are present in all provinces. Local transmission is present in ten provinces, in 30 districts. Approximately 42% of these cases are reported in Luanda province (Fig. 2).
- The outbreak in Angola remains of high concern due to persistent local transmission in Luanda. Although vaccination efforts have reached about eight million people, local transmission has been reported in ten provinces, mainly concentrated in urban areas and main ports.
- Two new provinces have reported local transmission: Cunene province has reported four confirmed cases (one in Cahama and three in Cuanhama districts) and Malange province (Cacuso district) has reported one confirmed case.
- Investigation teams have been sent to Kwanza Norte and Cabinda to document the cases and explore potential local transmission.
- The epidemiological situation in Lunda Norte is of concern. After reports of a cluster of cases in Lunda Norte on 22 May, and given the sensitivity of the area surveillance has been strengthened in the province.

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

Figure 1. Monthly time line of infected districts in Angola, December 2015 to 1 June 2016

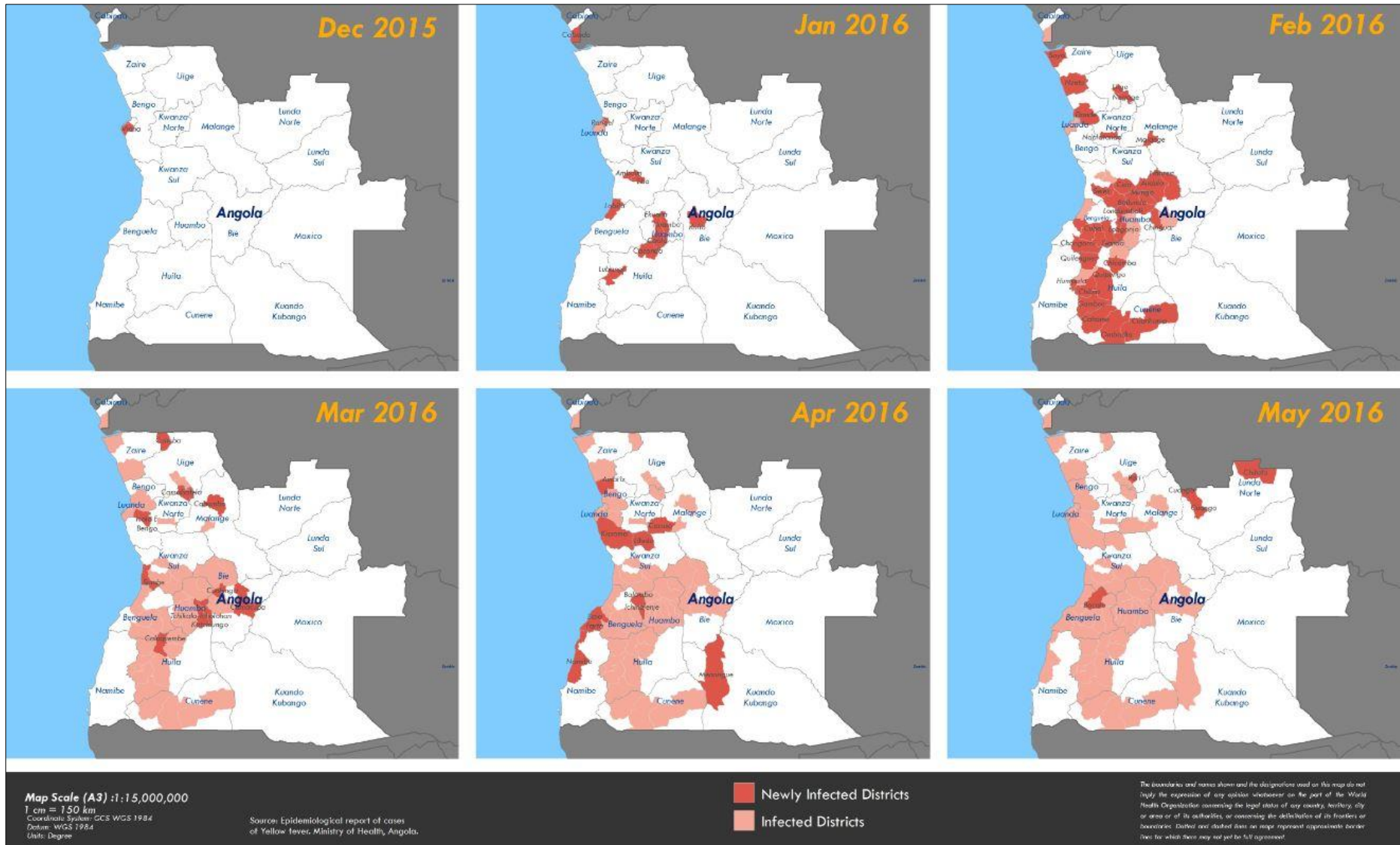
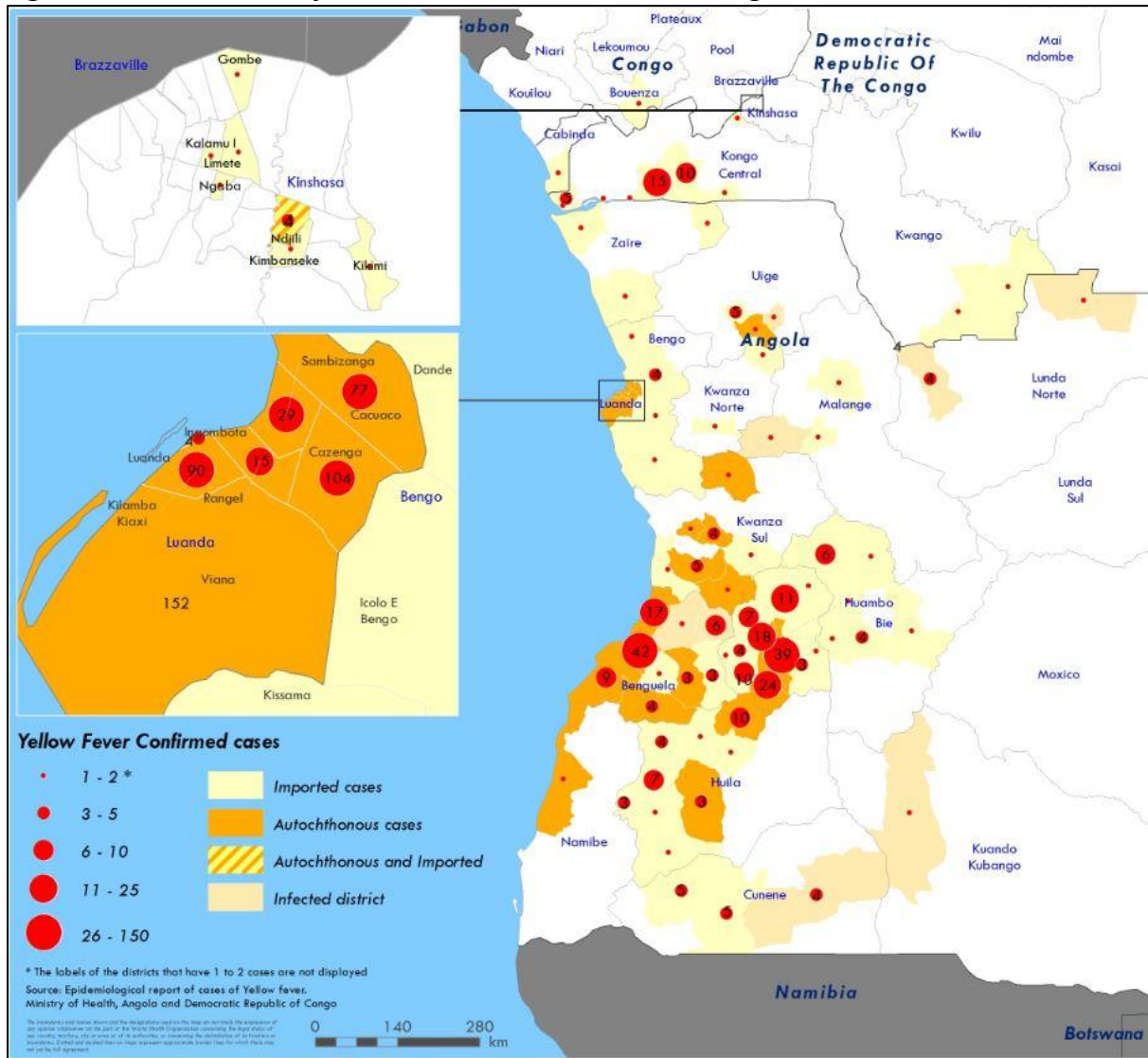
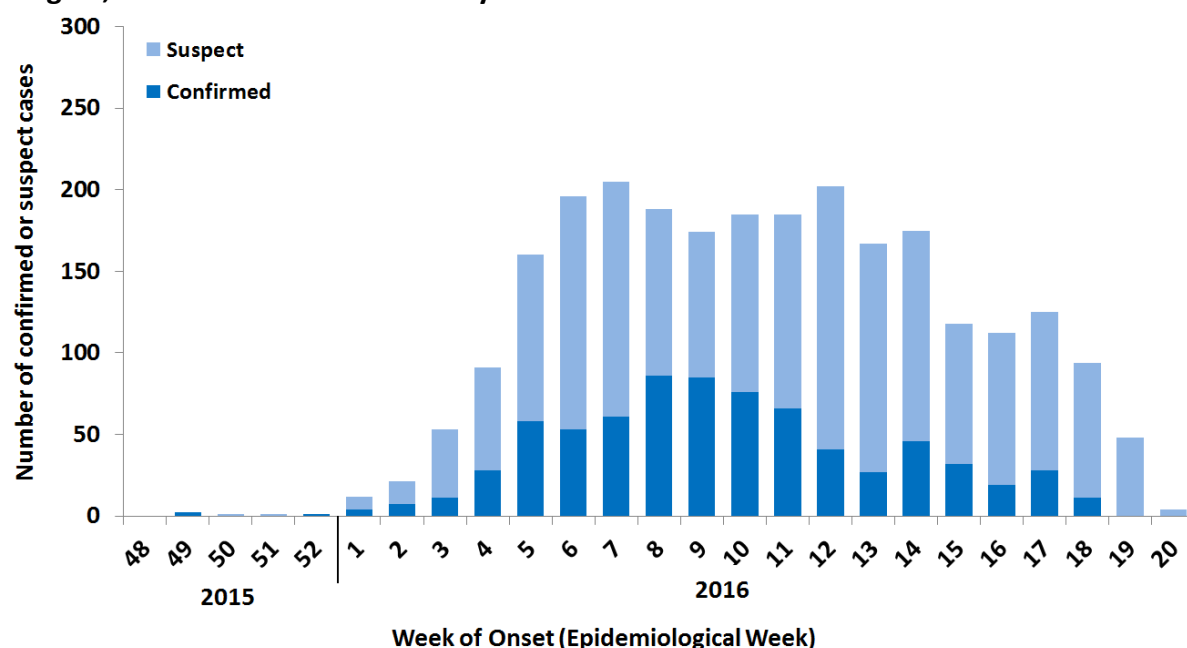


Figure 2. Distribution of yellow fever confirmed cases in Angola and DRC as of 1 June 2016



**Figure 3. National weekly number of suspected and confirmed yellow fever cases in Angola, 5 December 2015 to 22 May 2016**



Data provided by Angola yellow fever situation report as of 22 May 2016.<sup>2</sup> Data for the last two weeks is incomplete due to lags between onset of symptoms and reporting.

### 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 was officially declared on 23 April.
- As of 1 June, DRC has reported 52 laboratory confirmed cases: 44 of those are imported from Angola, reported in Kongo Central, Kinshasa and Kwango provinces, two are autochthonous cases in Ndjili (Kinshasa) and in Matadi, (Kongo Central) and two are sylvatic cases in Northern states. The possibility of locally acquired infections is under investigation for at least three non-classified cases in both Kongo Central and Kwango provinces.
- In addition, the three probable cases results are pending confirmation from IP-D.
- DRC has reported cases imported from two provinces in Angola where no local transmission is currently reported (Cabinda and Zaire).
- On 26 May at least 11 deaths have been reported among the Congolese community in Angola and three confirmed cases, imported from Lunda Norte, have been reported in Kwango province. This area has an intense commercial and transit of people and goods across DRC/Angola border due to economic activities, such as diamond mining with legal and illegal workers. The outbreak might extend to other provinces in particular Kasai, Kasai Central and Lualaba.

<sup>2</sup> <http://www.afro.who.int/en/yellow-fever/sitreps/item/8660-situation-report-yellow-fever-outbreak-in-angola-23-may-2016.html>

## 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).
- Uganda is experiencing local transmission of yellow fever outbreak. According to sequencing results, the outbreak is not linked to Angola and indicates high similarities with the virus which caused the outbreak in Uganda in 2010.

## Other countries

- Republic of Congo has reported one case of yellow fever in Bouenza department, bordering Cabinda province (Angola) and DRC. Although initially classified as confirmed, this case requires further investigation to assess whether it is a confirmed case, its vaccination status and whether the case is autochthonous or imported.
- Ethiopia has reported 22 suspected cases of yellow fever, including five deaths in two districts of South Omo zone. An investigation is ongoing to determine vaccination status of the cases, history of travel or potential link with Uganda or Angola. Last outbreak of yellow fever in this area was in 2013.
- Sao Tome and Principe has reported two suspected yellow fever cases imported from Luanda, Angola. Investigation is ongoing to determine if the cases were effectively vaccinated against yellow fever.
- No suspected cases of yellow fever have been reported in Zambia or Namibia. However, they share a long and porous border with Angola and controlling population movement between the three countries is challenging.
- Confirmed yellow fever cases exported from Angola has also been documented in Kenya (two cases) and People's Republic of China (11 cases). This highlights the risk of international spread through non-immunised travellers.
- In Peru, up to the week to 8 May, there were 43 suspected cases of yellow fever reported in six departments, with four deaths. Of the reported cases, 14 were confirmed. Most cases are reported from Junin department that is a known enzootic ecosystem area. The number of confirmed and probable cases reported in Peru from the beginning of 2016, exceeds twice the total annual number of cases (confirmed and probable) reported in the previous two years. This event is not related to the Angolan outbreak. The risk of geographical spread of to the pacific coast is unlikely.
- In Brazil, sporadic yellow fever cases have occurred in individuals without a history of yellow fever vaccination who were exposed to the virus circulating in historically endemic areas. In March 2016 one fatal case has been reported in Sao-Paulo state.



## 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 ten highly populated provinces including Luanda. Luanda Norte, Cunene and Malenge 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 situation needs to be closely monitored. 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. The risk of spread and local transmission in other provinces in the three countries remains a serious concern. 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.
- Uganda and some countries in South America (Brazil and Peru) are 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 in a context of limited 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.
- In Angola, vaccination campaigns started first in Luanda province at the beginning of February, and 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 18 May, 11.7 million doses have been shipped to Angola.
- DRC and Uganda are GAVI Alliance eligible countries thus the vaccination campaigns in these countries will be covered by GAVI Alliance.
- 2.2 million vaccines and ancillaries have arrived in DRC. The vaccination campaign started on 26 May and is planned in 11 Health Zones.
- 700 000 yellow fever vaccines arrived in Uganda and the vaccination campaign started on 19 May. The coverage from the reports submitted to date stands at 88% for Masaka and 96.8% for Rukungiri.
- Namibia requested 450 000 doses (10 dose vials) for yellow fever vaccine for travellers and refugees. Zambia has also requested request 50 000 doses for yellow fever vaccine for travellers.
- There has been an increase in media attention on yellow fever, in particular on vaccine supply, travel advice and the convening of the Emergency Committee.
- A press conference was held immediately following the Emergency Committee on yellow fever on 19 May. The statement can be found on the WHO website.<sup>3</sup>
- Information on the current outbreak continues to be updated on the WHO website.<sup>4</sup>
- WHO briefs UN partners on communications issues related to the outbreak on a weekly basis and shares resources for a joint coordinated response.
- Coordination calls are being held twice weekly between the WHO communications team in Geneva and regional communications leadership.

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<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/>



Figure 4. Vaccination population coverage in Angola as of 1 June 2016

