

b Yellow fever prevention and diagnosis: An update for South African health care workers in the context of the ongoing yellow fever outbreak in Angola

The numbers of suspected and confirmed cases of yellow fever continue to rise in Angola, according to the WHO Situation Report (<http://www.afro.who.int/en/yellow-fever/sitreps/>). The WHO reports weekly on the epidemiological situation, response activities, support from partners and resources mobilisation. As of the 10 April 2014, a total of 1751 suspected and 582 confirmed cases have been reported. Twelve of the country's 18 provinces have reported yellow fever cases, but local transmission has been documented in 5 provinces. The epicentre of transmission remains in Luanda (Figure 2). Mass vaccination campaigns are ongoing and by 10 April almost 6 million people (90% of residents) in Luanda province have been vaccinated against yellow fever. A decline in the daily number of cases has been noted as a consequence. A number of cases have been imported to the Democratic Republic of Congo, Kenya and China, but local transmission in countries other than Angola is yet to be confirmed. The NICD continues to receive requests for yellow fever testing of returned travellers. Travellers to Angola and other yellow-fever endemic areas should receive yellow fever vaccine from accredited providers at least 10 days before arrival at their destination. The yellow fever vaccine is highly efficacious, and is licensed for administration to persons as young as 6 months. Persons who are not eligible for vaccination (age < 6 months, symptomatic HIV infection or CD4 <200 cells/mm³, immunosuppression following transplantation or chemotherapy) should avoid visiting areas where yellow fever transmission has been documented. Persons over 65 years of age not eligible for vaccination.

Clinicians attending to returned travellers from yellow fever-endemic areas who have acute febrile illnesses should be careful to exclude malaria, typhoid, viral haemorrhagic fever, dengue and non-travel associated infectious conditions, and to confirm date of receipt of the yellow fever vaccine. Yellow fever is highly unlikely in the presence of a history of vaccination. Clinicians should take a careful travel history, and correlate it with the latest distribution of confirmed and suspected cases. A history of being bitten by mosquitoes should be elicited. In the presence of a compatible clinical history, and where yellow fever vaccination cannot

be confirmed, diagnostic testing for yellow fever is appropriate. Yellow fever has an incubation period of three to six days, followed by fever, muscle pain, prominent backache, headache, shivers, loss of appetite, nausea and vomiting. After a brief remission, about 15% of patients will progress to a more severe phase of illness presenting with jaundice, abdominal pain, vomiting, multiple organ failure, shock, renal failure and/or haemorrhage. The spectrum of illness ranges from asymptomatic or mild cases (the majority) to fatal (40% amongst persons with severe disease). Diagnostic testing is complicated by prior administration of the vaccine, as IgM antibodies may be produced for up to a year following vaccination. Persons with previous dengue virus or other flavivirus infection may also produce non-specific (cross-reacting) antibodies to yellow fever. Persons with yellow fever are viraemic from approximately days 2-9, and PCR (available at the NICD) can identify cases if serum is taken early on in the course of illness. Presently the WHO case definitions are being used (Table 1). The NICD offers diagnostic testing for yellow fever in consultation with a NICD pathologist, and following completion of the yellow fever case investigation form (available on the guidelines tab of the NICD webpage at www.nicd.ac.za). Please call Dr Jacqueline Weyer on 0113866376 or email jacquelinew@nicd.ac.za

Source: Division of Public Health, Surveillance and Response, (outbreak@nicd.ac.za) and Centre for Emerging and Zoonotic Diseases, NICD-NHLS (januszp@nicd.ac.za)

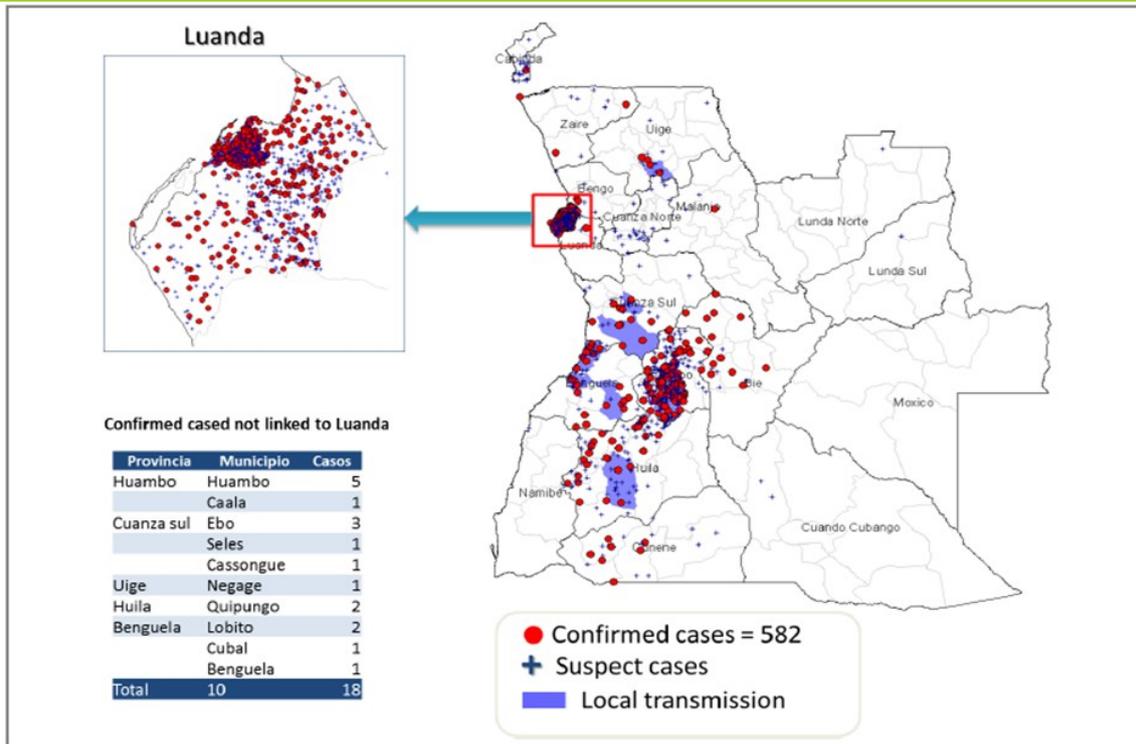


Figure 2. Geographic distribution of yellow fever cases, Angola December 2015-10th April 2015 (map courtesy WHO situation report)

Table 1. Current case definitions of yellow fever, according to WHO as per the revision published in Weekly Epidemiological Record, 19 November 2010

Suspected	Any person with acute onset of fever, with jaundice appearing within 14 days of onset of the first symptoms
Probable	A suspected case with one of the following: <ul style="list-style-type: none"> • presence of yellow fever IgM antibody in the absence of yellow fever immunization within 30 days before onset of illness • positive postmortem liver histopathology • epidemiological link to a confirmed case or an outbreak
Confirmed	A probable case with one of the following in the absence of yellow fever immunization within 30 days before onset of illness <ul style="list-style-type: none"> • detection of yellow fever-specific IgM • detection of fourfold increase in yellow-fever IgM, or IgG antibody titres between acute and convalescent serum samples, or both • detection of yellow fever-specific neutralizing antibodies OR A probable case with one of the following in the absence of yellow fever immunization within 14 days before onset of illness <ul style="list-style-type: none"> • detection of yellow fever virus genome in blood or other organs by PCR • detection of yellow fever antigen in blood, liver or other organs by immunoassay • isolation of yellow fever virus