

## Yellow fever outbreak in North Cameroon, 2011

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### Background

- Cameroon is a central African country with 19 Millions inhabitants.
- For epidemiological and historical reasons, Cameroon is considered in the group of the twelve of the most highly endemic countries for Yellow Fever (YF) in Africa (WHO 2008).
- During the last two decades two important YF outbreaks have been reported in Cameroon : in 1990 (180 cases, 125 deaths) and 1994 (10 cases, 5 deaths) in the Far-North and the Adamaoua Regions respectively.
- In 2009, a preventive mass campaign vaccination was conducted targeting 7,469,615 people in 62 districts.
- Despite this preventive campaign, isolated cases of YF were reported in certain districts which were not considered at risk of YF, thus were not vaccinated.
- The Ministry of Public Health therefore organized in 2011, under the auspices of the World Health Organization (WHO) a YF risk assessment in these areas in order to make detailed recommendations regarding a preventive vaccination campaign.
- **Objective:** To describe the YF outbreak reported in the North Region of Cameroon in 2011.

### Outbreak description

An outbreak of yellow fever has been reported in the North Region of Cameroon (fig. 1). The first case occurred on 8 October 2011 in Baboudji (Bibemi Health District) and the last case were registered on January 9, 2012 in Guider (fig. 2). A total of 24 cases with 7 deaths were reported in Guider (3 cases), Bibemi (1), Ngong (1), Mayo Oulo (1) and Golombe (1) districts. 18 of these cases were identified as part of the surveillance system, with fever and jaundice within 14 days of onset.

The Region experiences tropical climate of the Sudan type and seasons follow a wet/dry pattern, with rough divisions in November (dry) and April (wet). In this area, rural inhabitants are scattered with a relatively high population density.

### Results

Field investigations were carried out on 17-23 December 2011, during the dry season by a multidisciplinary team from the Ministry of Health including Centre Pasteur of Cameroon (CPC), with support of WHO country office, to confirm the cases and assess the extent of the outbreak.

43 serum samples were tested in the National Reference Yellow fever laboratory at CPC. Eleven of these cases were laboratory confirmed at CPC by MAC ELISA IgM test, which was followed by differential diagnostic tests for dengue and West Nile Virus and plaque reduction and neutralization test (PRNT), the most specific test for yellow fever, conducted in the WHO Regional Reference Laboratory for yellow fever, at the Pasteur Institute of Dakar, Senegal.

Following this investigation, a reactive mass vaccination campaign targeting 1.2 million people was conducted in 8 health districts considered at high risk, namely Guider, Bibemi, Gaschiga, Lagdo, Mayo-Oulo, Garoua I, Garoua II, and Golombe.

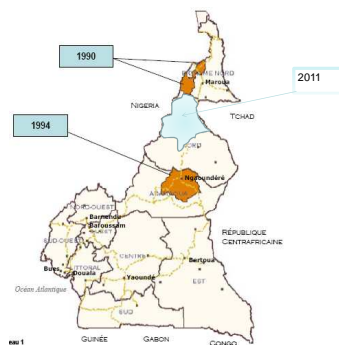


Fig. 1 : Map of Cameroon showing the location of the three major YF outbreaks reported during the last two decades (1990, 1994 & 2011)

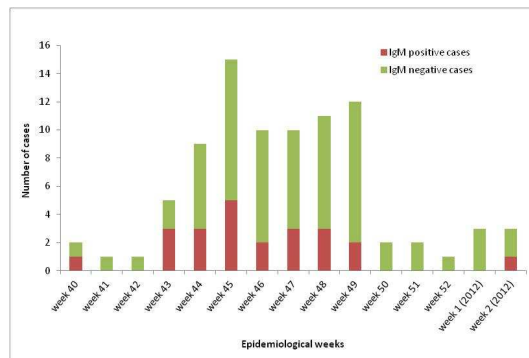


Fig. 2 : Epidemiologic curve of the YF outbreak in the North Cameroon, 2011

### Conclusion

- The Northern part of Cameroon is definitely the riskiest yellow fever zone in Cameroon with the third important and deadly yellow fever outbreak recorded in two decades despite mass vaccination campaigns organized in the recent years.
- The 2011 outbreak affected 8 of the 13 districts of the North Region of Cameroon
- Travelers to Cameroon are reminded that yellow fever vaccination is obligatory for entry into the country.

### Recommendations

Need to :

- Reinforce routine immunization campaigns
- Reinforce epidemiological surveillance
- implement vector control activities



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