Ghana (West Africa)

Population (2005) : 22'113'000
% of urban population : 46
Total number of cases (n) : 1'830
Total number of deaths (n) : 575
Average case-fatality rate (%) : 31
Year of introduction of yellow fever vaccine in routine immunization : 1992

Figure : Yellow fever cases reported in Ghana, 1950-2004

Table : Yellow fever cases, deaths, case-fatality rate (CFR) and vaccine coverage in Ghana, 1950-2004

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Background :
- 3rd in descending order of total number of notified yellow fever cases in Africa since 1950.
- Since 1901, yellow fever has been reported in Ghanaian epidemiological annual reports.
- Has the capacity to laboratory confirm yellow fever (serology using ELISA antibody capture).
- Rainy season:
  - Northern Ghana: June - September.
  - Southern Ghana: May - October.
Yellow fever events:

- **1963**: Ashanti (Kamusi) and Northern (Damongo) regions.
  - 1 yellow fever case was officially reported in Kamusi and 2 in Damongo. This was the first notification of yellow fever in the Ashanti region.

- **August 1969-1970**: Northern (Western Dagomba), Upper East (Bawku East, Bawku West), Upper West (Lawra) regions. Jirapa, Namdon, Navrongo, Paga and Sandema districts.
  - Yellow fever had not been reported in Ghana for 6 years. The outbreak began in Western Dagomba district and spread through the border with Burkina Faso.
  - 319 cases, including 79 deaths, were officially notified (CFR 25%). At least 2 cases were laboratory confirmed. The outbreak had allegedly affected all sexes and age groups indiscriminately.
  - *Aedes aegypti* was allegedly the predominant vector.
  - To respond to the outbreak, mass vaccination campaigns were carried out in the Northern part of the country, especially in the Northern and Upper West regions.

  - 12 cases, including 7 deaths, were officially notified (CFR 58%)

- **August 1977-end of 1979**: Summary.
  - Upper West, Eastern, Volta and Western part of Brong-Ahafo regions.
  - The outbreak began in the Upper West region and gradually moved to South. In 1978, the virus circulation spread to Eastern and Volta regions, and then, in 1979, to Brong-Ahafo and to the area of Greater Accra, around the capital city.
  - In total, 823 cases, including 193 deaths, were officially notified (CFR 23%). 49 cases were laboratory confirmed by serology or histopathology.
  - *Aedes aegypti* was the predominant vector.
  - Yellow fever surveillance was difficult at this time due to a high incidence of viral hepatitis in this area.

- **August 1977-February 1978**: Jirapa and surroundings, Upper West region.
  - The outbreak began during the end of the rainy season and mainly occurred during the dry season. The epidemic peak was observed in October 1977.
  - 136 cases, including 34 deaths, were officially notified in Jiripa and in 32 surrounding villages (CFR 25%). 9 cases were laboratory confirmed by serology or histopathology. 68% of the cases and 82% of the deaths occurred in children under 15. The rest of the population was protected by the mass immunization campaigns undertaken in this region in 1969.
  - *Aedes aegypti* was the predominant vector.

- **March 1978-September 1979**: Eastern region.
  - The outbreak began during the rainy season in a village close to Tafo and then spread to numerous surrounding villages in this region.
  - 207 cases, including 44 deaths, were officially notified (CFR 21%). Some cases were laboratory confirmed.
  - *Aedes aegypti* was the predominant vector.

- **August 1978-February 1979**: Volta region and more than 33 villages located between Jasikan, Hohoe and Kpando.
  - The outbreak began during the rainy season and continued during the dry season. The epidemic peak was observed in January 1979.
  - 340 cases, including 53 deaths, were officially notified within a population of 90,854 inhabitants (CFR 16%). 29 cases were laboratory confirmed by serology or histopathology.
  - 67% of the cases and 80% of the deaths occurred among adults over 15 years of age. The average incidence was 2.9 cases/1,000 inhabitants. The maximum attack rate was observed between 15 and 44 years (4.2 cases/1,000 inhabitants). Within this age group, males had an exceeding incidence (5.9/1,000) compared to females (2.5/1,000). This repartition of cases evokes an extra-domiciliary contamination. No preventive immunization campaign was previously undertaken in this region.
  - *Aedes aegypti* was the predominant vector.

- **June-September 1979**: West part of the Brong-Ahafo region (Berekum, Dormaa Ahendro, Hwidiem, Techiman, Wenchii).
  - The epidemic peak was observed in August, during the rainy season.
  - 104 cases, including 46 deaths, were officially notified (44% CFR). Several cases were laboratory confirmed. In 1977, 2 fatal cases of yellow fever were reported in this region.
✓ **1979 (continuation) : Greater Accra**
  - 4 fatal cases of yellow fever were officially notified in the Greater Accra agglomeration. These cases were laboratory confirmed by histopathology. They were suspected to be infected in the Eastern region.

✓ **January - December 1980 : Brong- Ahafo and Volta regions.**
  - 8 cases, including 6 deaths were officially notified (CFR 75%).

✓ **July 1983 - May 1984: Northern and Upper West regions. Jiripa and Wa districts.**
  - The outbreak affected an area bordering the Côte d'Ivoire's districts that had experienced a yellow fever epidemic in April - May 1982 (M'Bahiakro sub-prefecture, by Bouaké. 90 cases, including 25 deaths. *Aedes aegypti*). This outbreak is related to the epidemic that hit several districts of Burkina Faso in October 1983 (Fada N'Gourma, Manga, Ouagadougou and Tenkodogo).
  - The outbreak was notified 4 weeks after the identification of the first cases. It began in the West Gonja district, in the Western area of the Northern region. Then, it spread to North-East and to the Eastern part of the Upper East region, neighboring Burkina Faso. 19 villages were affected. The epidemic peak was observed in February 1984 (28 cases, including 5 deaths, for this single month).
  - 372 cases, including 201 deaths, were officially notified (CFR 54%).
  - *Aedes aegypti* was the predominant vector.
  - To respond to the outbreak, 300 000 people were vaccinated in the affected region and the bordering areas (Northern and North-East regions). The vaccination campaign was launched in January 1984.

✓ **1992 : A national immunization campaign was conducted while introducing the yellow fever vaccination in routine (no data available on vaccine coverage).**

✓ **October 1993 - May 1994 : Upper West region. Jiripa district.**
  - 37 villages were affected. The epidemic peak was observed in February 1994.
  - 118 cases, including 26 deaths, were officially notified (CFR 22%). 9 cases were laboratory confirmed. 54% of the cases were aged under 15. The M/F sex ratio was 2.
  - To respond to the outbreak, a mass immunization campaign was launched in January 1994 in the 37 villages located in the affected area and in the bordering districts of the Upper East and Northern regions.

✓ **November 1996 - beginning of 1997 : Upper-East (Bawku East, Bolgatanga, Builsa, Kassena-Nankana, Bawku West and Bongo districts) and Northern (East and West Mamprusi districts) regions.**
  - The outbreak began in the Bawku East district, mainly in the area of Garu. Bawku East was the most affected district. The outbreak was notified 5 weeks after the identification of the first cases.
  - 33 cases, including 5 deaths, were officially notified (CFR 15%). 7 cases were laboratory confirmed, among the 118 samples taken. 175 cases of jaundice, including 34 deaths, were identified as suspected cases of yellow fever (CFR 19%).
  - To respond to the outbreak, 140 000 people were vaccinated in the Bawku East and West Mamprusi districts.
Areas affected by the yellow fever epidemic, Ghana and Burkina Faso, 1983

Bibliography:


Last updated: 21 September 2005