

A large outbreak of conjunctivitis on Mayotte Island, France, February to May 2012

T Lernout (tinne.lernout@ars.sante.fr)¹, O Maillard², S Boireaux², L Collet², L Filleul¹

1. Regional office of the French Institute for Public Health Surveillance (Institut de veille sanitaire-InVS), Mayotte, France

2. Hospital Centre of Mayotte, Mayotte, France

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From February to May 2012, Mayotte experienced an outbreak of acute conjunctivitis with over 12,000 estimated cases, causing a significant burden on the primary healthcare system. It was most certainly caused by a coxsackievirus, as documented by isolation from a symptomatic traveller from the Comoros Islands in France. Tropical climate and poor hygiene conditions facilitate the spread of infectious diseases on Mayotte and in the region with risk of further exportation to mainland France and Europe.

There is anecdotal evidence that large epidemics of conjunctivitis occurred on Mayotte in the past, but no outbreak had been reported for over 15 years. In mid February 2012, several general practitioners (GP) belonging to a sentinel surveillance network reported an increase in patients consulting with acute conjunctivitis. Patients presented clinically with sudden onset of redness, marked swelling and pain often in both eyes. All were living in the town of Sada, on the east coast of Grande Terre [1].

Mayotte, located in the northern Mozambique Channel in the Indian Ocean (Figure 1), is a French overseas department with a maritime tropical climate. The hot and humid rainy season usually starts in November and lasts until May. Mayotte is made up of two islands, Grande Terre and Petite Terre with a surface of around 374 km². The island is very densely populated and has around 200,000 inhabitants of whom 53% are under 20 years of age [2]. General hygiene and living conditions are poor. Given the proximity of Mayotte and the Comoros, both part of the Comoros archipelago, travel (legal and illegal movements) between the islands is frequent.

Outbreak description

To describe the outbreak of acute conjunctivitis and evaluate its impact on the healthcare system, two sources of data were used (i) the number of conjunctivitis cases and total number of outpatients seen by GPs geographically spread throughout the island, who belong to a sentinel GP network, and (ii) the numbers of topical antibiotics or steroid treatments distributed by

the 17 public health centres on the island, provided by the central pharmacy of the hospital centre of Mayotte.

The GP sentinel surveillance system was set up in Mayotte in 2009, for influenza-like illness by the regional office (Cire) of the French Institute for Public Health Surveillance (Institut de Veille Sanitaire) as response to the influenza A(H1N1)pdm 2009 pandemic [3]. It covers 36% of the primary care facilities in Mayotte and has since been extended to surveillance of diarrhoeal diseases and asthma as well as other syndromes, whenever needed to describe epidemics. As soon as the increase in the number of patients presenting with conjunctivitis was observed, the sentinel GPs were requested to report weekly data on the number of cases to the Cire. Information on sex and age was not requested.

FIGURE 1

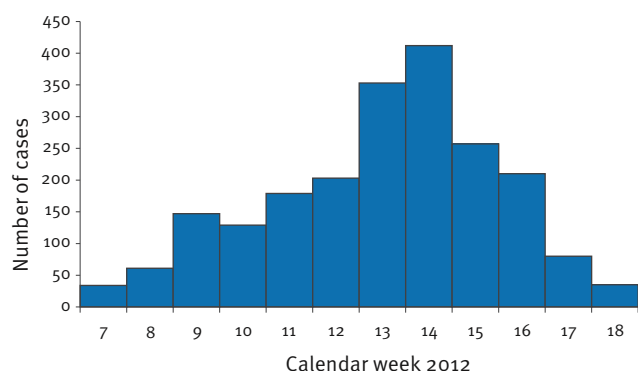
Location of Mayotte



^a Mayotte lies within the Comoros archipelago.

FIGURE 2

Epidemic curve of conjunctivitis cases, based on the number of patients consulting sentinel general practitioners, Mayotte, February-May 2012 (n=2,100)



The epidemic started in week 7 (mid February) reached a peak at the end of March with 353 cases reported by sentinel GPs in week 13 and 412 cases in week 14 and ended in May (Figure 2). It lasted 10 weeks in total and reached normal level in week 19. From the east coast of Grande Terre where the outbreak started, it spread progressively across the territory, first towards the south and then to the north and the smaller island of Petite Terre (Figure 3).

In the sentinel sites in healthcare centres, 2,100 cases were recorded. Conjunctivitis patients represented up to 45% of the total activity at these centres during the epidemic period. The weekly distribution of topical treatments was in line with the epidemiological curve. No severe cases were reported and no cases were hospitalised.

The total number of conjunctivitis cases consulting one of the public healthcare centres on Mayotte over the 10-week period is estimated at more than 12,000 individuals, around 6% of the total population. The weekly number of conjunctivitis patients consulting any healthcare centres ranged from 660 to almost 1,700, reaching a peak at week 14 with 23% of the total number of consultations. These estimations neither include patients consulting a private GP (n=21) nor those who did not seek medical care.

Laboratory investigations

Laboratory analysis on 13 conjunctival swabs randomly collected by sentinel GPs did not identify any particular bacteria. Of three swabs tested for viruses by a laboratory in mainland France, two were positive for enterovirus, not further typed.

Public health measures

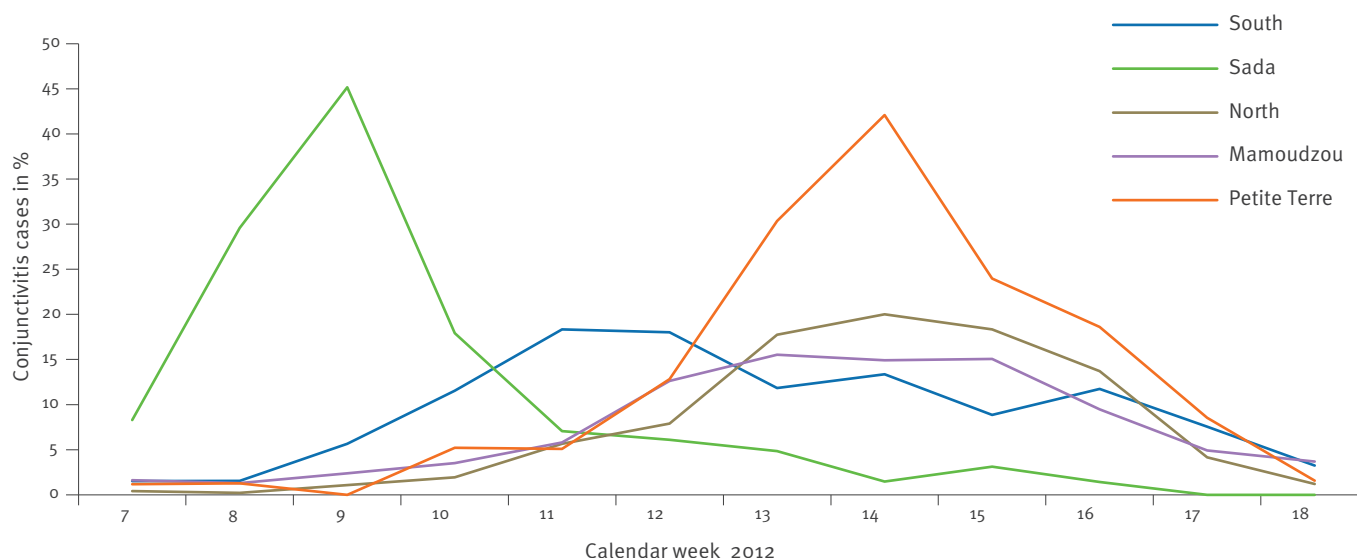
Although general living conditions of the population of Mayotte are poor, 82% of the households have a television [4]. Public health messages on hygiene practices have been broadcasted through local media, both radio and television [5]. Since 40% of the population are school-aged children, communication on preventive measures also took place at public primary and secondary schools.

Conclusions

Due to the tropical climate, high population density and poor hygiene standards, the population of Mayotte is largely exposed to infectious diseases. Although no severe cases have been reported, the outbreak of conjunctivitis that occurred from February to May caused widespread morbidity across the island with an important burden on the primary healthcare system.

FIGURE 3

Proportion of conjunctivitis cases compared to total number of patients consulting sentinel general practitioners by week and by location, Mayotte, February-May 2012



The outbreak on Mayotte is in line with what has been described elsewhere. Epidemics of viral conjunctivitis are mostly attributed to adenoviruses and enteroviruses (including coxsackievirus A) [6]. They occur mainly in tropical countries during hot, rainy seasons and in densely populated areas [7].

In May 2012, coxsackievirus A24 was isolated from a traveller with haemorrhagic conjunctivitis, returning from Comoros Island [8], where an outbreak of conjunctivitis was described by the local press [9]. This supplementary information leads us to conclude that the outbreak in Mayotte is most certainly caused by the same virus which is circulating in the Comoros archipelago.

The frequent movement of people between Mayotte and the Comoros Islands facilitates the spread of infectious diseases in the region and there is a risk of further exportation to mainland France and Europe through returning travellers.

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