**Supplementary data**

**1969: Jos Plateau, Nigeria (**[**1**](#_ENREF_1)**)**

Hospital admission records during the outbreak were used to estimate that there were 252 hospitalized cases of yellow fever. Of these cases, all likely severe, 116 deaths were recorded. Separately, a serosurvey of a group of students found 28 laboratory-positive students, 22 of whom reported recent illness with no further distinction as to what symptoms that may have included. It is unlikely that any of these students had been vaccinated.

**1970: Benue Plateau, Nigeria (**[**2**](#_ENREF_2)**)**

People were recruited via voluntary fever clinics and house-to-house surveys. Vaccination did not occur until after the investigation. Individuals deemed to have clinical illness did not necessarily include jaundice or hemorrhagic manifestations so symptomatic individuals include both mild infections and cases. In the surveys, where symptomatic individuals were oversampled, there were 15 laboratory-positive individuals among 126 who reported no recent illness. In the voluntary clinic data, which reportedly had a better sample of the general population, there were 66 laboratory-confirmed infections out of 203 people surveyed in two villages (Okwoga-Okpudo and Aidogodo), 50 of which were symptomatic. In these same villages, a mortality survey documented 3-8 deaths during the outbreak (3 with symptoms of YF, but no jaundice and 5 unknown) out of 518 people surveyed. In a third village (Adiga), 13 of 48 people tested positive for recent YFV infection with 6 being symptomatic. The population size of this village was not reported.

**1972-73: Goiás, Brazil (**[**3**](#_ENREF_3)**)**

Data was collected from a hospital and community surveys. There were 16 fatalities out of 40 hospitalized, laboratory-positive cases. Although symptoms were not reported, because of the hospitalization it is likely that they had fever and jaundice or hemorrhagic symptoms. In two of the communities (Formosa and Cabeceiras) non-vaccinated individuals without a history of severe disease were tested for YF virus. Of the 16 YF-positive individuals, four reported fever in the previous month.

**1978-79: Central River, Gambia (**[**4**](#_ENREF_4)**)**

Data was collected from multiple sources, but we focus on data from the two villages (Sukuta and Sambuldu) where vaccination was least likely to have affected the study results. Out of the 159 residents, 12 individuals reported fever with jaundice, one of whom died. A total of 73 individuals from the same two villages were tested for recent YFV infection; 42 were positive. Removing the 11 people with fever and jaundice who were tested (8 positive, 3 negative), 34 out of 62 people who did not have jaundice and fever tested positive for YF virus infection. This group likely included both asymptomatic people and people with mild symptoms. In a separate analysis of the villages combined, 26 of 51 asymptomatic persons tested positive for YF virus infection

**1986: Oju, Nigeria (**[**5**](#_ENREF_5)**)**

In a hospital and several treatment centers, 126 individuals with fever, jaundice and other symptoms were identified. Of these 126 severe cases, 59 died. Laboratory testing was performed on individuals not meeting the case definition, but they cannot be directly compared because people with and without disease were sampled differently.

**1987: Oyo, Nigeria (**[**6**](#_ENREF_6)**)**

Out of 325 hospitalized cases with fever and jaundice, there were 202 fatalities. Laboratory confirmation of these cases is not available. Village surveys of 190 people identified 10 with a history of fever and jaundice; 7 of the 10 died. The case and mortality data was not likely affected by vaccination, which occurred late in the epidemic.

**1993-94: Maranhao, Brazil (**[**7**](#_ENREF_7)**)**

All people with yellow fever symptoms plus a convenience sample of other residents were tested for evidence of recent YF virus infection in a population with a low prevalence of prior vaccination. An exhaustive search for people with symptoms suggestive of yellow fever identified 34 individuals whom we consider as severe based on the specificity implied by the authors. Among these 34 clinically recognized infections, 13 deaths were reported. A total of 874 individuals were surveyed in the municipality of Mirador including 22 of the clinically suspected cases. Out of the other 852 individuals (i.e. those without a history of severe YF), 40 had positive tests for YF virus infection. Of these 40, 28 were asymptomatic and 12 must have been mild infections, being neither asymptomatic nor clinically recognizable.

**1995: Koungheul, Senegal (**[**8**](#_ENREF_8)**)**

Individuals with a history of febrile illness and randomly selected asymptomatic individuals from the same communities were surveyed. In contrast to most outbreaks, many individuals had previously been vaccinated. Out of 8678 residents, 79 were identified who had a recent history of jaundice and/or fever with positive serology or virology of whom 15 died. An additional 31 probable yellow fever deaths were identified by their histories of fever with jaundice or hemorrhaging. Overall, there were thus 110 symptomatic cases and 46 yellow fever deaths identified among the 8678 residents. There were also 45 laboratory-positive individuals out of 450 asymptomatic individuals tested.

**1996: Kaffrine, Senegal (**[**9**](#_ENREF_9)**)**

Surveys were carried out in five villages and the hospital serving them. Out of 437 people surveyed in the villages, they identified 22 laboratory-confirmed cases with fever or jaundice and 69 asymptomatic infections. In the entire community of 2166 residents, 36 yellow fever fatalities were reported. Of the 14 recorded, hospitalized cases, all had fever, 13 had jaundice, 9 had hemorrhagic manifestations and 12 died. Because of the preponderance of severe symptoms, we assume that all 14 were severe cases.

**1998-2002: Brazil (10)**

The national surveillance system captured outcome data on 140 cases with jaundice or hemorrhagic manifestations; 92 of them died (other deaths occurred in individuals who were not classified clinically).

**2010-11: Aremo Central and Golgata, Uganda (11)**

Out of 1100 residents surveyed, 357 reported fever during the period of the outbreak and were enrolled in a cohort study. Of these, 348 were tested and 9 had evidence of YF virus infection. Of those, four individuals had fever and jaundice or hemorrhagic symptoms, one of whom died. No individuals without fever were tested.

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