

BOUAR MEASLES EPIDEMIC

CENTRAL AFRICAN REPUBLIC

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For approximately three months, from October 15 to January 15, a measles epidemic ravaged the prefecture of Nana-Mambere in northwestern Central African Republic. Bouar, a city of about 20,000, the administrative centre for the prefecture, recorded the greatest number of cases, but many cases were also reported to have occurred in most of the smaller villages scattered throughout the remote bush. Though attack rates are unknown, they are believed generally to be high. The epidemic reached its peak in December. At that time a measles vaccination programme was belatedly begun in Bouar. The campaign was continued in January and February in those bush villages which had had few or no measles cases. An investigation of the epidemic was undertaken from February 17 to 22 by which time no measles cases were seen in Bouar.

Bouar an economic and military centre, is a main stop on the route between Bangui and Yaounde, and is the second largest city in the country. The population density of the entire sub-prefecture is about 6.5 persons per square kilometre, making it one of the most densely populated prefectures in the country.

In each of the 31 months preceding the epidemic only a small number of cases were reported in Bouar (table 1). The date of the last previous measles epidemic in the town is unknown. Measles vaccinations had never been given in this area.

Between 100 and 150 deaths due to measles were said to have occurred in Bouar during the three month period of the epidemic. Since few of these were documented, a visit was made to the Etat Civil, an office charged with recording births, deaths, and other vital statistics, in the hope that some information could be obtained from their files. The visit failed to provide the necessary information.

A second possible source of information was the community itself. In two previous epidemic investigations the interview survey technique had been quite productive. This approach was tried in Herman, a quartier in Bouar, and in Maigaro, a bush village about 15 miles from Bouar. Ten man-hours of interviewing produced information regarding 450 children aged 0 to 10 years. One hundred and fifty of these children were reported to have contracted measles during the epidemic; the remaining 300 supposedly had never been infected. However, the survey results were felt to be unreliable. Birth certificates were presented for only about one-third of the children; many contradictory answers were given by family members; numbers of deaths reported by health staff and village leaders could not be confirmed through interview. Two possible sources of information remained, the Bouar General Hospital and the Herman dispensary hospital. The Bouar General Hospital had few data. Inpatient cases are usually limited to persons referred by one of the town's dispensaries. There is no out-patient service. These two factors combined to limit considerably the number of patients on whom information could be gathered. Only 25 measles cases were admitted from December 1, 1968 to February 22, 1969, of whom 10 died. This high mortality rate is not surprising since, in general, only seriously ill patients are admitted to the hospital.

A better source of information was the Herman Dispensary Hospital. This facility has an active outpatient service, an MCH service and about 15 beds for maternity cases and minor illnesses requiring hospitalization. From September 29, 1968, to February 22, 1969, a period of 21 weeks, the outpatient service saw 419 measles cases, and the hospital section admitted 137 measles patients. (The figures are not additive since an unknown number of persons seen by the outpatient service were later admitted to the hospital).

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Of 419 outpatient cases, about 18% were 5 years old or older (table 2), in the Kouapouli epidemic of 1967, 40% of the cases were in this age range. Six patients, about 1% of the total, were 15 years of age or older. Of the 231 cases less than a year old, the number less than six months' old could not be determined.

Of the 137 children hospitalized with measles, 16% were five years old or older (Table 3). Nineteen deaths were recorded among the patients. The actual number may be higher because a few parents removed critically ill children from the hospital. Furthermore, a large number of bronchopneumonia deaths were recorded in the hospital during the epidemic, and a hospital nurse noted that several of the deceased had first had measles. Thirteen of the 19 known deaths occurred in children less than 3 years old.

There is a noticeable difference in the age distribution of hospitalized and outpatient cases in the 0-12 months age group. The number of children less than a year old constitute 55% of the outpatient cases but only 20% of the hospitalized cases. There are two possible explanations. Children less than a year old are not always hospitalized when medical care is needed because nursing mothers do not like to or cannot afford to be confined to a hospital with their children. This factor might limit the number of sick children who are actually hospitalized. A more likely explanation is the fact that all children less than a year old are seen as outpatients at the MCH center. This naturally tends to inflate the number of cases observed in this age group because these children appear weekly, well or ill, as regular participants in the MCH programme. Many of the cases occurred among children who came to the dispensary for their usual MCH visit and were coincidentally diagnosed as having measles.

TABLE 1

Reported Measles Cases, Bouar

March, 1966 - February, 1969

	<u>Herman Dispensary</u>	<u>Haussa Dispensary</u>	<u>Total</u>
1966 March	0	1	1
April	0	0	0
May	5	9	14
June	6	4	10
July	4	3	7
August	7	6	13
September	N.A.	N.A.	N.A.
October	5	5	10
November	3	9	12
December	0	9	9
1967 January	7	2	9
February	11	7	18
March	4	6	10
April	4	2	6
May	15	2	17
June	10	8	16
July	4	6	10
August	4	8	12
September	1	1	2
October	0	1	1
November	2	3	5
December	1	7	8
1968 January	0	0	0
February	1	1	2
March	3	0	3
April	0	1	1
May	1	1	2
June	1	1	2
July	0	1	1
August	1	0	1
September	1	1	2
October	20	5	25
November	194	28	222
December	170	65	235
1969 January	55	16	71
February	1	6	7

TABLE 2

Number of Outpatient Measles Cases by Age at
Herman Dispensary, September 29, 1968 to February 22, 1969

<u>Age</u>	<u>Number</u>	<u>Percent of Total</u>
Under 1	231	55
1-4	113	27
5-14	69	16
15+	6	1
Total	419	100

TABLE 3

Number of Hospitalized Measles Cases by Age Group
in Herman Dispensary
September 29, 1968 to February 22, 1969

<u>Age</u>	<u>Number of Cases</u>	<u>Percentage of Total</u>	<u>Deaths</u>
0-5 months	1	.7	0
6-11 "	27	20.0	4
1 years	33	24.4	3
2 "	24	17.8	6
3 "	19	14.1	1
4 "	10	7.4	0
5 "	8	5.9	2
6 "	6	4.4	0
7 "	2	1.5	0
8 "	2	1.5	0
9 "	0	-	0
10 "	1	.7	1
11 "	<u>2</u>	<u>1.5</u>	<u>1</u>
TOTAL	135+	100	18++