

ADVANTAGES AND DISADVANTAGES OF SPECIALIZED AND MULTI-PURPOSE  
MEDICAL TEAMS

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We have not had a great deal of experience in Chad in the operation of specialized teams concerned solely with the implementation of the smallpox and measles eradication programme. No such units exist, in fact, because such activities form an integral part, in all sectors, of duties performed by the multi-purpose medical teams.

Multi-purpose teams have been traditional in Chad. They were first introduced in 1946. According to an order published in January 1953, these units were charged with the responsibility for "improving the control of ... epidemics: cerebrospinal meningitis, smallpox, etc." The standard composition of such a team is as follows:

1. A team leader, who is responsible for supervision of the overall operations of the team and for making contact with local authorities on arrival at the site where vaccination is to be performed.
2. A secretary, who is responsible for preparing, for each person, a certificate bearing that person's name. This certificate must be produced and initialled whenever any procedure is carried out.
3. Four vaccinators.
  - a) The first performs smallpox vaccination by jet injection
  - b) The second performs BCG vaccination by jet injection
  - c) The third performs measles vaccination by jet injection
  - d) The fourth performs vaccination against yellow fever by means of a vaccinostyle, using the dried vaccine of the Pasteur Institute at Dakar.

Although vaccination constitutes the primary activity of such a team, the team also includes:

4. A person responsible for the detection of leprosy and trypanosomiasis.
5. Laboratory personnel capable of carrying out simple routine examinations (blood, feces, urine and cerebrospinal fluid examination).
6. Personnel responsible for treatment of the clinical manifestations of the most frequently encountered endemic diseases. The total staff normally consists of 12 male nurses, two drivers and two labourers.

The itinerary of the team is worked out in advance and communicated to the authorities early enough for the information to reach the lowest levels of the administration, who are responsible for alerting the population.

In contrast, the typical specialized team would normally consist of 4 or 5 persons.

1. A team leader, whose duties are the same as in a multi-purpose team;
2. One or two vaccinators to administer vaccine by jet injection;
3. A secretary;
4. A driver, who may possibly perform various other duties (police, helping the secretary, etc.).

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## ACTIVITIES OF THE MULTI-PURPOSE TEAMS IN CHAD

I should like first to discuss the results achieved over a number of years by the multi-purpose teams, for which, incidentally, smallpox vaccination has been an integral part of their activities since 1952 (Table 1). Between 1 January 1966 and 28 February 1969, a total of 3,944,868 smallpox vaccinations were given. This figure is actually greater than that estimated by the census - 3,115,860 inhabitants. Although comparison of these figures would suggest that total coverage had been achieved, this actually is not the case.

Unfortunately, there is a central zone constituting a kind of corridor extending from Libya in the north to the frontier of the Central African Republic in the south-east in which a very large proportion of the population has not been immunized. This was not a result of defective operations on the part of the teams but due to other causes which resulted in the cessation of all activities in these regions at the beginning of 1967. However, limited activities have recommenced in these prefectures beginning in February 1969.

Wherever activities can be conducted normally, very satisfactory coverage has been achieved. It is practically complete in south-west Chad, where the population density is greatest.

Coverage with respect to measles vaccination has similarly been good, if it is considered that 24% of the total population consists of children between six months and six years of age (Table 2). As may be seen from the table, several areas were poorly covered for the same reasons noted previously. Take rates in primary vaccinees have consistently exceeded 95% (Table 3) and in revaccinees, the take rates have never been less than 55%.

From these data it is clear that the smallpox and measles vaccination programmes have been successfully carried out by the mobile multi-purpose teams.

This integration has been greatly facilitated by the use of the jet injector, which has markedly increased the output of the vaccinators, while enabling their number to be reduced, thus freeing personnel for other duties.

### DISCUSSION

There are several advantages in using the multi-purpose teams in Chad:

1. The teams are well known, having been in action continuously since 1946.
2. The personnel are well trained. After they have left the National School of Nursing, they are given practical in-service training in the field and theoretical instruction so as to be able to perform any duty in the team. Thus a male nurse can change over without difficulty from the detection of trypanosomiasis to performance of vaccination.
3. By combining several functions, there is a decided saving in the number of vehicles required as well as fuel and spare parts. Additionally, fewer refrigerators are necessary, and since they are gas operated, their operational costs are also reduced.
4. With fewer teams, the required number of drivers is reduced. This is important both from the standpoint of funds but also because good driver-mechanics in Chad are difficult to find.
5. The existence, as a part of the team, of a treatment unit constitutes an important psychological factor in improving attendance.

On the other hand, smaller specialized teams would have greater mobility and would be more highly flexible. Their establishment, however, would give rise to a dispersion of both personnel and equipment such that, under the present circumstances, we would have to make a painful choice as to which of the present activities would need to be curtailed. Additionally, repeated summonses to villagers to attend for examination would almost certainly reduce the proportion of attendances.

#### CONCLUSIONS

In our view, the choice between multi-purposes and specialized teams must depend on:

1. Geographical characteristics of the state concerned (difficulty of surface communications, population density, type of habitat);
2. Facilities and availability for training of adequately qualified personnel;
3. Equipment, especially vehicles, and funds locally available;
4. Type of structure of the general health services in the country in which the eradication campaign is to be carried out.

In this connection, two cases may be considered:

- a) If no mobile services exist in a state, but only fixed health services, there are grounds for establishing small specialized teams for the eradication campaign;
- b) If there are specialized mobile teams, such as the Service des Grandes Endemies, for example, it would be preferable for the eradication operations to be integrated with this agency. The operations can actually be facilitated without interruption existing services, as the example of Chad has shown.

Should an outbreak occur, however, it should be possible for a specialized team to be established quickly so as to take effective containment measures.

Thus, wherever possible, the two systems should not be regarded as alternatives, but each should complement the other.

Table 1. Smallpox Vaccinations, Cases, Deaths - Chad - 1952-1966

Year	No. of Vaccinations	Cases	Deaths	Imported from
1952	313,947	2,789	609	
1953	376,349	680	226	
1954	671,485	518	112	
1955	941,638	259	55	
1956	709,686	51	2	
1957	539,457	54	3	
1958	938,034	15	0	
1959	516,479	17	1	
1960	643,953	2	0	
1961	810,641	502	62	Nigeria
1962	758,977	769	150	Cameroon
1963	593,922	10	1	
1964	559,974	5	2	
1965	1,089,406	73	10	Nigeria
1966	1,008,489	0	0	
Beginning of Eradication Campaign				
1967	1,386,215	86	23	Nigeria
1968	1,345,412	5	1	Nigeria

Table 2. Total Vaccinations - Measles and Smallpox  
January 1966-February 1969 Chad

Division	Population 1969 (by Census)	No. Smallpox Vaccinations	No. Measles Vaccinations
Chari Baguirmi	357,511	930,553	118,496
Mayo Kebbi	446,404	768,554	165,347
Tandjile	251,222	176,540	52,450
Logone Occidental	232,055	303,075	73,571
Logone Oriental	257,077	318,746	68,790
Moyen Chari	384,692	666,768	122,646
Salamat	67,675	24,968	34,187
Guera	171,571	79,122	26,641
Batha	260,336	131,097	23,674
Kanem	161,381	135,361	11,323
Lac	94,949	99,386	17,783
Ouaddai	248,385	178,462	6,539
Biltine	114,525	107,079	4,716
B.E.T.	68,077	25,157	3,766
<b>TOTAL</b>	<b>3,115,860</b>	<b>3,944,868</b>	<b>729,929</b>

Table 3. Vaccination Take Rates  
March - September 1968

Age Group	Primary Vaccinations	Percent	Revaccinations	Percent
	Number	Takes	Number	Takes
0-4	454	97.8	582	74.9
5-14	95	92.6	1,259	57.9
15-45	37	81.0	2,425	49.2
45+	11	100.0	321	48.2
<b>Total</b>	<b>597</b>	<b>95.9</b>	<b>4,587</b>	<b>54.8</b>