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SMALLPOX ERADICATION PROGRAMME IN THE REPUBLIC OF DJIBOUTI

6 November 1977 to 20 December 1977

Assessment of the present situation and implementation of surveillance activities

by

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Purpose of the visit

- To evaluate present smallpox activities
- To determine the presence or absence of smallpox in the country
- To initiate an active surveillance programme and search operations.

A visit of three weeks was originally planned but the consultantship was extended to six weeks to (a) further assist the Director of Health Services and the Chief of the Department of Hygiene and Epidemiology in the organization of the new surveillance programme, and (b) to recommend to WHO, at the request of Dr S.W.A. Gunn, WHO/HQ Emergency Relief Operations, eventual assistance to be given to the country in relation to the floods which occurred in October 1977. In this respect information was gathered and visits made to evaluate the situation as regards mainly the sewage, water supply, garbage disposal, abattoirs, communicable diseases and vaccination programmes, malaria control and malnutrition.

Besides the activities in relation to the surveillance of smallpox in the refugee population groups in Djibouti, the consultant was involved in other health aspects in connection with refugees and was, at the request of the Government, a member of the Sub-Commission of Health for the Assistance to Refugees.

CONCLUSION

Active surveillance, including house-to-house searches, was initiated in November 1977 in the most vulnerable areas of the country. Although a number of rumours of smallpox cases were reported and chickenpox outbreaks detected, no smallpox case was found. However, with the constant flow of refugees, nomads, travellers and caravanners crossing the borders daily, it is essential that surveillance measures be strengthened to ensure that a hidden focus or an imported case be rapidly detected before spread of the disease occurs.

RECOMMENDATIONS

1. Monthly house-to-house search operations should continue in Djibouti town and in the towns and villages throughout the country until the end of March 1978.

Following the evaluation of the epidemiological situation in Somalia and Ethiopia which will be made at the Smallpox Surveillance Meeting in Nairobi in April 1978, and depending on the data recorded in Djibouti since December 1977, a decision will be taken concerning the frequency of the search operations after April 1978.

2. A number of surveillance measures were initiated simultaneously in November/December 1977 to evaluate as rapidly as possible the presence or absence of smallpox. However, during the next three months priority should be given to the quality of work by further training and better supervision in the field of searchers, surveillance teams and other staff involved in smallpox surveillance. Any staff carrying out work of poor quality should no longer be engaged in smallpox activities.

3. In the second half of February 1978 an analysis of surveillance activities carried out during the previous six weeks should be made by the DHS in Djibouti, the Chief of the Department of Hygiene and Epidemiology and by the WHO staff in Headquarters (on the basis of reports received from Djibouti) so as to determine if WHO assistance is needed in the future. If so, it is proposed that a WHO consultant be sent at the beginning of March for approximately one week to assess the situation and to recommend WHO assistance, if needed, in the form of personnel, funds, or supplies and equipment.

4. The surveillance activities and the data collected by national staff* should be carefully checked and regularly analyzed during the next few weeks. This staff together with the surveillance teams are the main surveillance agents presently utilized for the detection of smallpox among nomads, caravanners and refugees crossing the border. Should this surveillance reveal itself to be of poor quality, other measures to control the nomad camping sites, water points and border posts must be taken.

5. The chickenpox survey should be strengthened throughout the country and it must be stressed to the staff that one specimen from at least one patient from each chickenpox outbreak must be collected.

6. As concerns the control of refugees at the border posts and in camps, all efforts must be made to implement the measures proposed by the Sub-Commission of Health for Assistance to Refugees.

*National staff include the officers being engaged in the "Groupement Nomadic" posts in the border areas.

1. Introduction

Geography and demography:

Concerning the population of Djibouti town and the five cercles (districts) figures vary considerably depending on the source of information. The following figures were obtained at the Department of Hygiene and Epidemiology:

Djibouti town	100 000 to 150 000	southern district
Djibouti district (rural area)	5 000	
Ali-Sabieh district	10 000 to 15 000	
Dikhil district	15 000 to 20 000	northern district
Tadjoural district	15 000 to 20 000	
Obock district	10 000	
TOTAL	155 000 to 220 000	

The four districts are administered through governmental officials in the four Chef lieux (main town/village of the district), Djibouti town acting as both Chef lieu of the district and capital of the country.

Number of localities in the districts

Djibouti districts	7
Ali-Sabieh	9
Dikhil	10
Tadjourah	8
Obock	6
TOTAL	40

The exact population of these localities is not known but the majority have a population between one hundred and a thousand.

2. Personnel used in the past for the control of smallpox

Until now no health staff was engaged full time for the control of smallpox.

The planning and organization of the smallpox activities throughout the country (vaccination campaigns, containment of outbreaks, smallpox control at the ports and border posts, etc.) have been the responsibility of the Chief of the Department of Hygiene and Epidemiology, Djibouti town (Dr B. Carteron). Staff from this department were periodically engaged full time on an ad hoc basis, assisted when possible, by the local district staff (see organigramme of the Department of Hygiene and Epidemiology - Annex 1).

The following personnel have been engaged full time in the surveillance of smallpox since December 1977:

(1) a sanitary inspector from the Department of Hygiene and Epidemiology to coordinate the smallpox programme under the direction of Dr Carteron (due to the very restricted number of physicians in the country no medical officer can assume this task).

(2) two mobile teams which will constantly tour the 5 districts.

(3) two teams to tour on foot the mountainous areas inaccessible to vehicles.

(4) a sanitary inspector for smallpox control of the refugee camps.

Staff of the dispensaries and the Groupement Nomade will be actively engaged in smallpox surveillance and vaccination. For the search operations, staff will be regularly recruited from the Djibouti dispensaries and hospital, and administrators will also be loaned on a temporary basis, to assist the staff of the Department of Hygiene and Epidemiology.

3. Epidemiological situation in the past years

The 1959 epidemic

The alert was provoked by the discovery of a smallpox case in Djibouti Town in September 1959. During the next two months, 109 cases were found in Djibouti Town and in settlements spread out along the railway line, notably in Chebelley and Holl-Holl.

Altogether 110 cases were counted, 13 of which were fatal. The mortality rate was 11.8%.

The 1966 epidemic

After a six-year respite, smallpox once again hit the southern part of the country. It broke out in February 1966 in the settlement of Dikhil. Thanks to the prompt application of containment measures, Djibouti Town was untouched.

This epidemic totalled 52 cases of which six were fatal, a mortality rate of 11.5%.

The 1971-1972 epidemic

Two cases were discovered on 13 and 16 November 1971 in the Cite Arhiba section of Djibouti Town, occupied exclusively by the ethnic Afar. The source of infection of these cases remains uncertain, but the probable origin of the case uncovered on 13 November was Ethiopia. This patient had arrived in Djibouti Town the evening before the onset of rash from Daimoli, a nomadic settlement in northwestern Djibouti close to the border.

A third case was uncovered on 18 November in the north at Dera on the road linking Tadjourah to Nanda in Ethiopia. The epidemic raged from 13 November 1971 to 29 February 1972 and totalled 104 cases with three deaths, a mortality rate of 2.8%:

adults	77	(74%)
children	27	(26%)

The majority of these cases were uncovered in different parts of Djibouti Town where, simultaneously, a chickenpox epidemic was raging: 13 unvaccinated patients contracted smallpox during their hospitalization at Peletier Hospital, and three of these died. There were two other outbreaks: (1) the interior - at Daodaouya among several tribes who met up on the road from Eli Daar in Ethiopia; and (2) in the north - at Adgueno next to Mt. Moussa Ali, 2 km from the border. All of the patients had not been vaccinated.

The strain of virus isolated from several specimens by Professor Netter in Paris revealed an intermediate virus, not very virulent clinically.

The 1973 epidemic

This epidemic was characterised by the sporadic appearance of 14 cases of smallpox during the last nine months of the year. These cases were discovered in different regions in Djibouti, in the north as well as the south: Dikhil, Nagad (near Djibouti Town), Arsali, Bal-Balla (suburb of Djibouti Town), Tadjourah and Guelileh. Ten cases were imported from Ethiopia, the original infection occurring in the towns in Harrar and Wollo Regions. The four other cases contracted the disease locally, three among hospital patients. There were no fatalities.

The 1974 epidemic

Twelve cases were counted with no deaths occurring. The source of infection of the first case, uncovered in Djibouti Town on 17 January, remains uncertain, whereas the second case, discovered 28 January at Dikhil, originated in Adigala Town, Harrar Region, Ethiopia. During March and April, the disease struck mostly children and adolescents in Djibouti Town, five of which were recent arrivals.

4. Vaccination

Vaccine

Lyophilized vaccine produced at the Pourquier Institute, Montpellier (France) has been used since 1969.

At the beginning of December there was a stock of 75 000 doses. A further 100 000 doses are to be sent in January by WHO.

The bulk of the vaccine is kept in the refrigerator ($\pm$ 4°C) of the Department of Hygiene and Epidemiology and appropriate quantities are periodically sent to the dispensaries of the Chef lieux of the four other districts.

Administration of vaccine by means of vaccinostyles (scratch method)

An attempt had been made some time ago to use the bifurcated needle, but it appeared that this method of administration had not been easily accepted by the population and the medical staff. In view of the priority to be presently given to surveillance, it was decided with the local authorities that health staff throughout the country would later initiate the bifurcated needle, probably after the second search had been carried out.

Vaccination policy

The vaccination policy is a nation-wide vaccination campaign carried out every three years.

With the exception of the 1973 outbreaks, containment of the 1966, 1971 and 1974 outbreaks was followed by a vaccination campaign carried out throughout the country.

Number of smallpox vaccinations performed in the Republic of Djibouti:

1966	114 853
1969	109 000
1971	101 385
1974	118 923
1977	126 282

The figure of 126 282 for 1977 is the provisional figure corresponding to the vaccinations in the three sourthern districts performed in the first half of the year. Vaccination was undertaken in late 1977 in Tadjourah district and the population of Obock will be vaccinated in January 1978.

Organization of the vaccination campaigns

The vaccination campaigns are planned and organized by the Chief of the Department of Hygiene and Epidemiology. The majority of staff involved are from this department and assisted when possible by the local staff. Vaccinators go from house to house in towns and from one village and one nomad camping site to the other to reach the greatest number of persons.

Persons vaccinated receive a small card bearing their name and the date of the vaccination.

In 1977 the population of Djibouti town and Djibouti districts was vaccinated (Annexes 2 and 3). Nine teams were responsible for the town, three mobile teams for the rural areas, and three other teams for the vaccination of the police, army, port and factory personnel.

Total population vaccinated: 101 000.

In June 1977 the two southern districts of Ali-Sabieh and Dikhil were tackled, and including the refugees of the camp in these districts, a total of 25 800 persons were vaccinated.

In between the campaigns, the dispensaries of the Chef lieux of the districts, and hospitals of Djibouti carry out vaccination.

Neonatal vaccination

The population on the whole welcomes smallpox vaccination. However, it has been the custom to exclude certain categories of the population, such as newborns and pregnant women; the earliest age at which vaccination is being given is approximately three months.

It was agreed that neonatal vaccination would be initiated and administered with the bifurcated needle in maternity wards of the Pelletier Hospital, where BCG is systematically administered to newborns. When the medical staff is assured that takes are successful in newborns this procedure would be extended throughout the country.

Vaccination in hospitals

All the staff, including sweepers, cooks, etc., of the two hospitals are vaccinated yearly and in future all patients entering the hospital, including suspect cases and chickenpox cases, will be vaccinated.

Vaccination of refugees, nomads, caravanners (see section on refugees)

- Vaccination scar survey (not been conducted in the past)

In December 1977, 1 517 persons of the different wards and suburbs of Djibouti town were examined for the presence or absence of a vaccination scar.

Age group	Total	Presence of scar	%
Under 1 year	145	126	63%
2 - 5 years	272	268	98.6%
6 - 15 years	391	372	95%
16 - 45 years	503	490	97.6%
Above 45 years	206	202	98.1%
	1 517	1 458	96.2%

From the data of this small survey the percentage of persons with a vaccination scar was high in all age groups with the exception of children under one year of age.

In the future, vaccination will be carried out on a continuous basis (a) at hospitals and all dispensaries; (b) at all the border posts including the 20 Groupement Nomade posts for the vaccination of travellers, nomads, caravanners and refugees; (c) in the camps of refugees when found during the search. Additionally, the four surveillance teams will vaccinate the nomads, caravanners and refugees encountered during their tour.

5. Surveillance

Reporting system

In the past, the district medical officers of the four districts did not send weekly reports for smallpox. Only monthly reports were dispatched, included in a report for cholera, plague, yellow fever and typhus. These monthly reports have been sent regularly except when posts of district medical officers were vacant.

Weekly reporting forms were therefore printed and distributed (Annex 4) to the district medical officers. The two hospitals in Djibouti, and the dispensaries (representing the primary medical reporting centres and through which the majority of patients present themselves before entering the hospital) also were given reporting forms to be sent weekly to the district medical officers. Due to the recent withdrawal of most of the district medical officers and the shortage of staff at the dispensaries, the flow of

reports from one level to the other is still poor but it is hoped that by the surveillance teams' repeated visits the procedure will be accelerated. It was agreed upon that the Chief of the Department of Hygiene and Epidemiology would send a weekly cable to WHO to report smallpox or nil cases, indicating the number of district reports received each week.

All chickenpox cases and deaths will also be recorded in dispensaries and in the hospitals.

Report of fever and rash cases

Until now no active search for smallpox cases was carried out in the country. However, in the past, a number of fever and rash cases (chickenpox and others) were reported to the Department of Hygiene and Epidemiology from different sources:

1) 80 paramedicals who continuously control the water and sewage in the towns and villages and carry out spraying for the control of mosquitoes and flies. They are therefore periodically in contact with a large proportion of the population.

2) Dispensaries to which patients come for not only major diseases but also for minor symptoms.

Number of dispensaries in Djibouti town: 5. One in each of the Chef lieux of the four districts (Ali-Sabieh, Dikhil, Obock, Tadjourah) which also hospitalize patients. 12 in the rural areas. Two Sanitary Control Posts situated at Galafi and Loyada. The number of personnel in the dispensaries varies from one to twenty, depending on the size of the dispensary and availability of staff.

3) The two hospitals in Djibouti town.

4) The Groupement Nomade posts (GN). There are 21 posts. The majority are near the border; two are along the northern sea coast. Approximately 400 men (10 per post). Local military staff comb the border and rural areas by jeep, camel or on foot to control all nomads, caravans, tradesmen and refugees in the country. Nomad camping sites and water points are systematically visited, and personnel stay several days at the water points when climatic conditions bring a large number of nomadic/caravan population to the site.

6. Special surveillance (search operations)

Methodology

1. Publicity of the programme and reward

An appeal from the President of Djibouti to the population to actively collaborate with searchers to detect smallpox cases and a reward of 5,000 DF was published in the local press and periodically read in French and the Afar and Issa languages over the radio.

The reward was printed on the African Mother and Child posters and they were distributed to administrative posts, Groupement Nomade posts, dispensaries, schools, markets, chiefs of villages and other sites where people gathered.

Handbills announcing the reward in French and Arabic were printed and distributed by the searchers.

A number of officials, responsible for considerable staff in the country, were personally contacted and their cooperation in the surveillance programme requested: the Commander in Chief of the Djibouti Army, the Commander in Chief of the French Army, the Commander in Chief of the Groupement Nomade, the 'Chef du Cabinet', the Ministers of Health, Agriculture (who is responsible for the refugees), Education, Interior and Defence, the Chief of the Medical Department of the French Army and the five District Chiefs.

Implementation of surveillance measures

Priority was first given to the border areas of the three southern districts of Djibouti, Ali-Sabieh and Dikhil which have borders with Somalia and Ogaden.

The personnel of Groupement Nomade posts throughout the country were instructed to report all suspect cases of smallpox, chickenpox, and fever and rash cases detected among the nomads, caravanners, travellers and refugees whom they control at the borders, water points, nomad camping sites and villages. While the house-to-house search was organized and implemented in Djibouti town, 13 out of the 15 border GN posts and the surrounding areas were visited; posters and recognition cards were deposited and instructions given to the staff.

House-to-house search

The search began in Djibouti town in view of the fact that the majority of the population of the three southern districts regularly visit the capital and the caravanners, tradesmen and refugees coming and going from the territory are found in considerable number in Djibouti town and its suburbs.

Personnel employed

At the start of the search 12 paramedicals (4 "agents d'hygiène" and 8 "controlleurs") of the Department of Hygiene and Epidemiology were used. These workers have been engaged full time for a number of years in the Department, participating in vaccination campaigns (smallpox, polio, etc.) and in the control of smallpox at the port or border posts near Djibouti.

They were briefed on the methodology of the house-to-house search (manner of questioning, showing the recognition card, informing about the reward) and were told that any suspect cases of smallpox, chickenpox or rash with fever were to be reported daily.

During two days teams of two workers were briefed on methodology. The average number of houses that could be searched by one team each day was determined to be 120.

Working hours were from 6 or 7 a.m. to 12 noon, resulting in approximately 5 effective working hours.

During the course of the search, further workers were recruited:

- 12 male nurses from the hospital
- 8 female and male nurses from Djibouti dispensaries

- 6 administrators from Djibouti district department

When the 26 new workers were recruited, the 12 staff of the Department of Hygiene and Epidemiology acted either as supervisors or were paired with the nurses/administrators.

Methodology of the Search

Djibouti is divided into 8 "quartiers" (wards) plus a commercial quarter, 3 suburbs (Einguela, Arrhiba and Bouloss) and 2 villages (Ambouli and Bel Bellah) situated on the outskirts of the town.

Every morning the daily schedule for the different teams was drawn up. In most instances all the teams worked in the same ward to facilitate the supervision.

Markets, Schools and Dispensaries

During the first search, which was carried out in a period of two weeks, all schools and dispensaries were personally visited by the Chief of the Department of Hygiene and Epidemiology accompanied in some instances by the WHO consultant. The staff was informed of the on-going search for smallpox and given mother and child reward posters and recognition cards to use. The teachers were asked to check the vaccination scars of the children until a control could be made by the health teams and to report all rumours obtained from the children to the Department of Hygiene and Epidemiology. Vaccinators were sent the following week to those schools where some children were found by the teachers to be unvaccinated.

There are four major markets in Djibouti which are functioning six days a week. Forms for market surveillance and the collection of rumours were printed and were used by special two-men teams who questioned all persons entering and leaving the markets, using mother and child reward posters and recognition cards. As the majority of the population buys its meat and vegetables in these markets, it was agreed upon that until the next search in Djibouti is carried out the four markets would be surveyed at least three days a week.

However, persons attending the smaller road markets in the town were questioned during the house-to-house search and this will be continued in the future.

Suburb village - Ambouli

Following a cable from WHO Headquarters informing that a message had been received from Ethiopia "smallpox suspected in place called Imbouli", teams were immediately sent from Djibouti town to the suburb of Ambouli as no locality Imbouli existed in Djibouti.

1 491 houses out of 1 533 houses were visited and of the 7 956 persons contacted, three were infected with chickenpox but no smallpox cases were found.

Suburb village - Bel Bellah

This is a "shanty" village on the outskirts of Djibouti where much commerce is carried out and where a number of refugees, caravanners and tradesmen are found. As during the search a number of persons were found to be unvaccinated, vaccination teams were sent the day following the search and 383 persons of a total of 1 131 were vaccinated, these being in the majority caravanners and refugees.

Results (Table 1)

The search in Djibouti was facilitated by the fact that the population is used to being frequently contacted and questioned by the Department of Hygiene and Epidemiology teams for regular house-to-house sanitation control, and in most cases welcomes the visit of health staff.

The search was begun before the special forms were printed. The search workers therefore noted the name of the street, the number of each household, the number of inhabitants per house (in nearly all instances members of the same family, with the exception of the refugees), the number of refugees in each house, the number of persons questioned, the presence during the last two months of smallpox cases and chickenpox deaths, and the number of active chickenpox cases. Cases of fever and rash were to be reported during the search to the supervisor or to the Chief of the Department of Health and Epidemiology the same day. When refugees were found, they were vaccinated unless they presented a vaccination scar. If at the time of the vaccination of individual refugees, local Djiboutians requested vaccination, this was carried out, but otherwise no vaccination of the population was associated with the search, with the exception of Bel Bellah suburb.

The population figure of Djibouti is estimated at between one hundred and one hundred and fifty thousand. The figure of 73 000 persons questioned is satisfactory considering that this was the first search undertaken in Djibouti. Several workers only indicated the number of persons living in the houses visited, and not the number of persons questioned and therefore the figure of 73 000 is lower than the actual number of persons questioned.

The number of refugees found, i.e. 2 268, is probably low as persons were not always willing to admit they were refugees or sheltering refugees. Of the 1 346 persons vaccinated during the search the great majority were refugees which indicates that approximately 50% of the refugees in Djibouti were not vaccinated.

Assessment

For the search of Djibouti town, 2-man teams from the Department of Hygiene and Epidemiology first carried out a small assessment of the search in Djibouti town a week after its termination. Samples of the population of all wards and suburbs were assessed. Of 308 houses visited and 611 persons questioned:

- persons who have seen the searcher 517
- persons who have seen the recognition card 448
- persons who knew where to report 420
- persons who knew of the reward 507

- refugees questioned 41
- persons who have been vaccinated by the searcher during the search 38

It was agreed that constant assessment of the surveillance would be made in the future. An assessment form was printed and will be used in future.

House-to-house search in the villages of the rural area

After the completion of the search in Djibouti town, the best teams were sent to the three southern districts, i.e. Djibouti, Ali-Sabieh and Dikhil, to continue the search in the "Chef lieux" and villages.

At the time of the departure of the consultant, four of the six town/villages in Dikhil district and five of the 10 in Ali-Sabieh district had been searched whilst the search in all nine villages in Djibouti district was completed (Tables 2, 3 and 4).

By the end of December all villages in the three southern districts had been searched. The search in Dadjourah was begun in December 1977 and it was planned that during the third week of January 1978 the search of all localities of the two northern districts would also be completed.

Mobile surveillance teams

Two teams were created to conduct continuous surveillance throughout the country. Four members of the Department of Hygiene and Epidemiology were chosen to form teams and two chauffeurs were employed for the two Toyota jeeps provided by WHO. One team of the Afars staff is responsible for the areas populated by the Afars (Dinkali), i.e. the two northern districts of Tadjoural and Obock and the north eastern area of Dikhil district; the second team, Issas personnel, is in charge of Djibouti and Ali-Sabieh districts as well as the south western area of Dikhil district.

The teams' primary task is to motivate the staff working in the area of their responsibility, to regularly control their smallpox activities, and carry out surveillance of the nomad, refugee and caravanner population. In summary, they are to check the water points, nomad camping sites and refugees in the areas of their responsibility, to visit all the GN posts, dispensaries, villages, schools in this area and to question all persons involved directly or indirectly with smallpox surveillance, such as health staff, school teachers, village headmen, etc., controlling the reporting files, the rumour registers, the presence of reward posters and vaccine, etc. (detailed instructions Annex 5).

A form was drawn up for the teams in which is to be noted a brief description of their daily work on the field, the locality of their night halt, the consumption of petrol and the number of kilometers covered daily.

Although some field training was given to the Afars team, the Issa team leader was only available at the end of the consultant's visit and received only verbal instructions concerning his daily work. Further training of the teams and a regular check of their work is therefore essential.

Surveillance teams in inaccessible areas

Although the two mobile surveillance teams will on many occasions have to walk to visit nomad camping sites and water points, there are two large areas which are completely inaccessible to vehicles: (1) the mountainous Goda area which stretches between the Assal Lake and Tadjourah town; (2) the mountainous Mabla area between Tadjourah and Obock towns.

Two more surveillance teams, each consisting of two paramedicals (who know and have previously walked through these areas to vaccinate nomads) were formed. The teams will make periodic 2-3 week visits to these areas. Surveillance activities will be associated with the vaccination of the nomadic population.

Active involvement of the Groupement Nomade (GN) in the search for smallpox, chickenpox and fever and rash cases in the collection of rumours of fever and rash cases

As stated previously, the GN staff was instructed, in November 1977, to carry out smallpox surveillance, as they are continuously checking nomads, caravanners, refugees and travellers over considerable areas. It was difficult to engage health staff, with the exception of the surveillance teams, to undertake these activities and it was thought that the quality of their work at the border, in nomadic populated areas and at water points, would be inferior to that of the GN staff. At a later stage it was decided in agreement with the Chief of the GN to request the staff to record their findings on special forms and instructions were printed and distributed to all the GN posts. (Annex 6). A weekly summary of the activities carried out at each of the 20 posts will also be drawn up by the Chief of the GN of each post and sent to the Department of Hygiene and Epidemiology.

A sanitary inspector of the Department of Hygiene and Epidemiology and the two mobile surveillance teams are responsible for briefing the GN staff in the use of the forms and checking their work and findings.

7. Refugees

Refugees, mostly from the Ogaden region, have been entering Djibouti during the past several months. The main localities from where the refugees originally came are Aichaa, Chimilea, Dire Dawa, Haddagala, Harawa, Ourso, Errer and Afdan. Two camps have been created for them; one at Ali-Sabieh and one at Dikhil. There is also a third camp, established in 1975, for Eritrean refugees at Bouloos, in the suburbs of Djibouti. The total number in the country is not known; however, the estimated figure is at least 7 000. The census of the camps made by the smallpox team gave the following figures:

Camp	No. of Adults	No. of Children	Total
Ali-Sabieh	779	1 389	2 168
Dikhil	714	1 223	1 937
Eritrean (Bouloos)			482
		TOTAL ...	4 587

Refugees living outside the camps (found during the house-to-house search)

Djibouti town and suburbs	2 268
Ali-Sabieh and Dikhil villages (near the camps)	150 and 56 respectively
In 16 (out of a total of 27) villages searched in the three southern districts	97

In November/December 1977 the majority of refugees entered by the border post of Guelileh, Ali-Sabieh district, in small groups or up to 450 at a time. Two paramedical staff stationed at Ali-Sabieh (which is a short distance from Guelileh) are sent to the border post upon the arrival of refugees and have instructions to vaccinate each refugee regardless of the presence of a vaccination scar. A form for each family recording the name, age, date of entrance, and the home town or village of the members of the family, is drawn up; only in a minority of these forms is the date when vaccination was carried out indicated. Some of the refugees go directly to Djibouti from Guelileh whilst the majority are taken to the neighbouring Ali-Sabieh camp once they have been vaccinated.

The refugees at the camps of Ali-Sabieh and Dikhil live in tents provided by the US AID, corrugated iron houses, or in the characteristic Djibouti "toukouls" (stone houses); small tents or houses harbour one family while bigger ones harbour up to 80 persons.

In trying to evaluate the number of refugees and especially their vaccination status the following difficulties were encountered:

(1) the forms were not classified by name in alphabetical order, numerical order, nor by the date of their arrival;

(2) the majority of the forms did not indicate if the family had been vaccinated at the border post; in Dikhil camp a small piece of paper indicating that the family has been vaccinated is given to the family chief, but in a number of cases this paper was lost;

(3) the tents and "toukouls" were not numbered in Dikhil, and only the small tents were numbered in Ali-Sabieh;

(4) the forms did not indicate in what tent each family is living;

(5) the refugees are permitted to leave the camp at any time (for a short period or definitively) and no record was made on the form if and where they had departed.

Action taken - first phase

A team of four paramedicals from Djibouti, Department of Hygiene and Epidemiology, carried out the following:

(1) Each house, tent and "toukoul" in the two camps was numbered with paint;

(2) Each shelter was then visited and on a form, which was drawn up for smallpox control ("Fiche de control des réfugiés"), the following information was noted: (a) the number of the shelter (b) the name of each member of the family in the shelter (c) the date of arrival in Djibouti; if the family had arrived less than two months previously, their knowledge of smallpox cases and if so where and when (d) the home town/village and (f) the date of vaccination, and the date of the control of the vaccination take for each individual.

While this form was filled in a search for smallpox, chickenpox or fever and rash cases was carried out.

During this first phase, the unvaccinated refugees (for example pregnant women who had refused vaccination on arrival, babies below three months and some others who had escaped vaccination at Guelileh, etc.) were vaccinated. All the vaccination takes were verified and the exact number of refugees was established.

No cases of smallpox, chickenpox or fever and rash were detected during this first phase.

As the refugee population in Dikhil camp is more or less stable, which only a few arrivals every week, the paramedical in charge has been able to control all the newcomers during his periodic visits to the camp. On the other hand, change-over of refugees in the Ali-Sabieh camp, with a regular flow of newcomers, the departure of others, and with the other responsibilities that the two paramedicals were given, resulted in poor supervision. It was therefore decided to engage a sanitary inspector whose sole responsibility is to visit 5 days a week every refugee shelter in Ali-Sabieh, to assure the smallpox surveillance of the camp, control vaccination takes, collect rumours of smallpox cases and report any fever and rash cases (Annex 7, Detailed instructions). He will carry out the work of completing the forms already drawn up, filling in new forms with the information concerning all newcomers, and at each shelter visited will note the date of visit with his signature for that particular shelter.

Besides Guelileh, refugees enter the country at other border posts, the most important being Loyada, situated at a short distance from Djibouti town, where hundreds of persons (refugees, tradesmen, etc.) cross the border in both directions. Although personnel previously had been instructed and paid by the Department of Hygiene and Epidemiology to control the vaccination of all newcomers at this post, a visit revealed that persons entered or left Djibouti territory without any vaccination control.

The Commander of the Groupement Nomade was contacted and it was agreed that two members of the GN would be designated full-time to control vaccination certificates and scars, vaccinating when these were absent.

At the other border posts, few refugees are recorded (for example about two hundred per month at Assamo) but all the border posts are now being provided with vaccine and newcomers will be checked and vaccinated when necessary.

Action taken - second phase

At the time of the completion of the census and examination of the refugees in the camps, it became apparent that further steps had to be taken, in coordination with the local authorities, due to the increase in the flow of refugees arriving at Guelileh:

1. Sufficient tents were not available to house all the refugees and they therefore squatted at Guelileh, at Ali-Sabieh town and at Ali-Sabieh camp which made their regular control very difficult;

2. A number of refugees - more than a hundred at a time - were leaving Guelileh for Djibouti on the day of their arrival at the border post, before their vaccination could be assured;

3. When four to five hundred refugees arrived simultaneously at Guelileh no shelter was provided for them and systematic vaccination was difficult to carry out by the two paramedicals, who had to cope with several hundreds of refugees squatting under the trees.

As these problems were among the many other health problems related to the refugees (malaria, inadequate water supply, food, etc.) it was proposed that a meeting be held with the governmental and local officials, health staff, representative of the International Agencies and Embassies who were involved in the assistance given to the refugees. At this meeting sub-commissions were established among which was a health sub-commission. During the two successive meetings of the sub-commission, the following action was taken and recommendations sent to the Government: (Annexes 8 and 9).

Summary of decisions taken and proposals made to the Government

- All refugees should be vaccinated before entering the country:
- Further sanitary inspectors to be recruited for Guelileh post.
- More personnel from the police to be stationed at Guelileh to assist the sanitary inspectors in the organization of vaccination.
- Tents to be provided at Guelileh to shelter the refugees and thus facilitate the systematic examination and vaccination of the refugees. One tent for Loyada post.
- A 10-days quarantine of all refugees at the time of their arrival to ensure (a) successful vaccination (b) that no refugee departs during the incubation period of the disease.
- Provision of sufficient tents to the camps to house all the refugees.
- A sanitary inspector (a) to be engaged full time for the smallpox control of the Ali-Sabieh and Dikhil camps (b) an Eritrean male nurse to be engaged full time for the control of smallpox and other diseases at the Eritrean camp. A request was made by the Representative of the UNHCR to his Headquarters in Geneva to fund the salaries of the two paramedicals (US$200 per month).
- Refugee forms drawn up at the different borders and camps to be standardized.
- All persons entering Djibouti (nomads, tradesmen, caravanners) to be checked by the GN staff at the borders. Those having no vaccination certificate to be vaccinated by the GN.

8. Specimen collection and laboratory diagnosis

In previous years specimens collected were sent to France for laboratory examination and only in recent years to WHO/HQ. No specimen was collected in 1977 until the active surveillance was initiated in November.

WHO specimen containers were distributed to the hospitals in Djibouti and to those dispensaries where there is either a physician or a reliable nurse (chef infirmier) and the technique of collection was personally explained to these personnel.

The sanitary inspectors and supervisors of the search operations, the staff of the Groupement Nomade dispensaries, the members of the two surveillance teams and the sanitary inspector of the refugee camps of Ali-Sabieh and Dikhil will be also responsible for the collection of specimens.

The personnel were requested to collect specimens from:

- suspect smallpox cases
- chickenpox cases (one specimen from each outbreak)
- chickenpox cases without vaccination scar
- severe chickenpox
- chickenpox deaths
- any disputed case of fever and rash

After the reward had been initiated and during the search operations, chickenpox cases were detected and several of these patients were reported to the Department of Hygiene and Epidemiology as being smallpox cases or suspect smallpox cases. These were often severe chickenpox in adults but also a variety of other infections such as heavily infected scabies.

From 26 November to 19 December 1977, ten specimens were sent to WHO (nine patients from Djibouti or its suburbs and one from a patient in Galafi, near the border in Dikhil district). On examination, chickenpox virus was found in two specimens, one was negative for virus, and results were awaited for the seven others.

As health staff both in the urban and rural areas are not used to reporting chickenpox cases unless they are severe cases, and have not reported chickenpox cases in the past, the organization of the chickenpox survey and collection of specimens of chickenpox outbreaks should be strengthened.

9. Rumours of fever and rash cases. Rumour registers

Several rumours of fever and rash were reported to the Department of Hygiene and Epidemiology and other centres. These cases were checked but not systematically recorded.

A rumour register was therefore printed and is being distributed to hospitals and dispensaries.

Acknowledgment

The writer is grateful for the assistance and cooperation given by Dr Warsama, Director of Public Health, Dr Carteron, Chief of the Department of Hygiene and Epidemiology and his staff. Special thanks are due to the Chargé d'Affaires, Mr Clarke, of the US Embassy and his staff, who arranged communications between the writer and WHO.

TABLE 1. ACTIVE SEARCH FOR SMALLPOX - DJIBOUTI TOWN

Quarter	No. of houses visited	No. of houses closed	No. of inhabitants questioned	No. of refugees	No. of vaccinations performed	No. of smallpox cases	No. of chickenpox cases
Q.1	707	56	2 812	95	72	-	-
Q.2	957	44	3 822	120	86	-	1
Q.3	1 139	10	5 283	115	46	-	-
Q.4	1 235	9	5 514	222	107	-	-
Q.5	964	48	5 400	31	27	-	2
Q.6	1 766	33	9 336	368	190	-	2
Q.7	2 825	50	16 528	502	346	-	2
Q.7 b	1 213	31	6 177	56	51	-	-
Einguela	623	43	3 296	89	27	-	-
Arrhiba	925	22	5 745	15	10	-	7
Business quarter	261	8	1 062	2	1	-	-
Ambouli	1 491	42	7 956	63	50	-	3
Bel-Bellah	-	-	921 (+ 210 caravan members)	108	333	-	-
Refugees/Bouloos	-	-	-	482	-	-	-
	14 106	396	73 852	2 268	1 346	-	17

TABLE 2. DJIBOUTI DISTRICT

Population centre	No. of houses visited	No. of inhabitants questioned	No. of refugees	No. of vaccinations performed	No. of smallpox cases	No. of chickenpox cases
Loyada	-	454	3	3	-	-
Damerjog	-	251	0	0	-	-
Atar	-	65	0	0	-	-
Douda	-	229	0	30	-	-
Nagad	-	17	0	0	-	5
Oueah	125	454	1	1	-	-
Arta	157	685	13	30	-	-
Doralle	63	330	0	2	-	4
Chebelley	-	70	0	2	-	-
	345	2 555	17	68	-	9

TABLE 3. DIKHIL DISTRICT

Population centre	No. of houses visited	No. of inhabitants questioned	No. of refugees	No. of vaccinations performed	No. of smallpox cases	No. of chickenpox cases
Dikhil	776	3 620	56	50	0	-
Gorabous	-	157	0	0	0	-
Galafi	-	103	0	0	0	-
Yobocki	-	744	69	0	0	-
	776	4 624	125	50	0	-

TABLE 4. ALI-SABIEH DISTRICT

Population centre	No. of houses visited	No. of inhabitants questioned	No. of refugees	No. of vaccinations performed	No. of smallpox cases	No. of chickenpox cases
Ali-Sabieh	627	3 329	150	84	-	-
Goubetto	-	116	0	1	-	-
Oued Boule	-	52	0	39	-	-
Holl-Holl	205	833	1	3	-	-
Dasbyo	73	317	0	0	-	-
	905	4 647	151	127	-	-

STRUCTURE OF THE DEPARTMENT OF HYGIENE AND EPIDEMIOLOGY

SENIOR MEDICAL OFFICER
+
ASSISTANT MEDICAL OFFICER

(Duties are divided between these 2 medical officers with respect to coordinating the work of the various technical and administrative departments. The Senior Medical Officer is responsible for all matters pertaining to hygiene, epidemiology, prophylaxis, biology and health surveillance at frontiers.)

1 TECHNICAL ASSISTANT

Bacteriological and parasitological diagnosis section

(in charge of the Laboratory at the Peltier Hospital and responsible for preliminary epidemiological surveys on cases detected at Peltier. Performs all biological tests requested by the various hospital departments)

- 7 laboratory technicians (male)
- 1 laboratory technician (female)
- 4 laboratory auxiliaries
- 1 secretary

1 TECHNICAL ASSISTANT

Hygiene/Epidemiology/Prophylaxis section

(responsible for hygiene and vector control, epidemiological surveys and prophylactic missions. Coordinates the work of the hygiene workers stationed at posts in the interior).

- 12 antilarval teams
  - 38 hygiene workers / hygiene workers' aides
- Thermal fogging team
  - 12 hygiene workers / hygiene workers' aides
- Antilarval surveillance team
  - 6 hygiene workers
- Department of Hygiene team for the interior
  - 21 hygiene workers / hygiene workers' aides

1 ADMINISTRATIVE ASSISTANT

(responsible for administrative matters relating to the budget, payroll, promotion, accounting (billing, tenders)). Also acts as Treasury intermediary.

- 2 secretaries/accountants
- 1 secretary

1 laboratory technician, in charge of the Department of Hygiene Laboratories

(venereal diseases, food inspection, water analyses, entomology)

- 3 laboratory technicians (male)
- 1 laboratory technician (female)
- 2 laboratory auxiliaries
- 2 labourers

1 executive secretary (Office of the Senior Medical Officer)

- 1 messenger
- 1 telephone operator

1 SANITARY INSPECTOR

(responsible for supervising the vaccination, venereal disease and leprology departments, the Prophylaxis Centre and the quarantine station and for the maintenance of the department.)

- Maintenance
  - 7 labourers
- Vaccinations
  - 3 secretaries
  - 1 vaccinator
- Venereal diseases Leprology
  - 1 secretary
  - 1 male nurse
- Prophylaxis Centre
  - 1 male nurse
  - 1 female nurse
  - 1 nursing aide
  - 1 secretary
  - 2 unskilled workers
- Quarantine station
  - 1 male nurse

1 SANITARY INSPECTOR

(responsible for supervising the quarantine department, bars/restaurants and food sellers. Issues charges for breaches of the Hygiene Regulations (sworn official)).

- Port quarantine department (q.d.)
  - 4 surveillance workers
- Airport q.d.
  - 4 surveillance workers
- C.E.F. q.d. (Guelieh)
  - 1 surveillance worker
- Ethiopia road q.d. (Galafi)
  - 4 surveillance workers

1 CHIEF OF EQUIPMENT

(responsible for the supervision and maintenance of vehicles and thermal fogging equipment. Runs the spare parts' store and the fuelling posts)

- 7 drivers/repairmen
- 2 assistant mechanics
- 1 equipment maintenance man

N.B. - Where necessary (mass vaccination campaigns, community preventive measures, etc.) mobile teams are made up by taking the staff required (vaccinators, secretaries, tablet distributors) from among the health surveillance workers of the quarantine departments, hygiene workers from town quarters, the secretaries in the various departments. Such campaigns are few in number and of short duration. The work does not require full-time special teams.

ANNEX 2

TRIENNIAL SMALLPOX VACCINATION CAMPAIGN IN DJIBOUTI DISTRICT

The smallpox vaccination campaign in Djibouti district began on 7 February 1977 and ended on 26 February 1977. The week of 7-12 February was spent in other population centres in the district and vaccination in Djibouti town itself took place between 14 and 26 February.

This campaign had no epidemiological context (there were no smallpox cases in the Territory) and was carried out in conjunction with the polio vaccination campaign for children aged three months to 10 years. Smallpox vaccination was administered to these children at the same time as the second dose of oral polio vaccine.

(1) Vaccine

Freeze-dried vaccine from the Pourquier Institute at Montpellier (Batches 838 and 850).

(2) Vaccination technique

Scarification with a vaccinostyle.

(3) Means of action

9 teams, each made up of a nurse/vaccinator and two secretaries were located in different parts of the town (Place Ménélik - Avenue 13 - Avenue 26 - rue des Issas - Boulevard Guelleh Batal - Place de la Mosquée in Quarter 7 - Maison des Jeunes in Quarter 7b - dispensaries at Ambouli and Arrhiba).

3 mobile teams, also made up as above, were responsible for vaccination in the administrative services, schools and the Territorial Guard and in other population centres in Djibouti district (Arta - Oueah - Doralle - Gaan-Maan - Khor-Ambado - Loyada - Damerjog - Douda - Nagad and Chebelley).

The S.M.I. carried out vaccinations in private undertakings.

The Port Quarantine Service vaccinated the Port employees.

Dr Lassauvagerie completed vaccinations among the Gendarmerie and the Groupement Nomade Autonome.

(4) Results

Team No. 1 (Hall de l'Information, Place Ménélik)	10 461
Team No. 2 (Avenue 13, former 1st Arrondissement)	11 404
Team No. 3 (Avenue 26, near the mosque)	11 021
Team No. 4 (Rue des Issas, Dara Waiss mosque)	11 724
Team No. 5 (Boulevard Guelleh-Batal, Lehr housing complex)	8 507
Team No. 6 (New Mosque, Quarter 7)	7 520
Team No. 7 (Arrhiba)	5 589

Team No. 8 (Maison des Jeunes, Quarter 7b)	4 381
Team No. 9 (Ambouli dispensary)	5 721
Mobile teams, Djibouti (schools + administrative services + Port)	14 663
Gendarmerie and Groupement Nomade Autonome (Dr Lassauvagerie)	300
Dr Gelot (agencies affiliated to the S.M.I.)	2 998
Mobile team responsible for population centres in the interior	4 255

as follows:

Arta	628
Oueah	355
Doralle - Gaan-Maan	212
Loyada - Damerjog	625
Douda - Nagad - Chebelley	535
Bal-Ballah - P.K. 20	1 900

Total: Djibouti town and population centres in the interior	98 544

as follows:

Djibouti town	94 289
Population centres in the interior	4 255

(5) Remarks on the campaign

The vaccine used during the campaign was quite effective. When we revisited schools for the purpose of cholera vaccination three weeks later we found that a high percentage of vaccinations (about 80%) had taken among the pupils.

In contrast to our experience in previous campaigns, we saw no significant secondary reactions, and in particular no ulcerations.

The campaign reached 94 289 persons in Djibouti town, which is a respectable figure when persons with a valid smallpox vaccination at the time of the campaign are taken into account (Europeans, local people who had been travelling during the summer holidays). In all probability this figure represents nearly 80% of the population of the town, which is estimated at 150 000 inhabitants.

Approximately 4000 more persons were vaccinated than in the 1974 campaign, which took place during a minor epidemic in Djibouti. This figure does not reflect the increase in the population of Djibouti town during that period, which is proportionately considerably higher. The attendance figures we obtained are therefore not as good as those in 1974. This is explained by the fact that this campaign had no epidemiological context and therefore the population had no incentive to come forward for vaccination.

The figures reached by teams in different vaccination centres show considerable variations in attendance.

Centres No. 2 (Avenue 13) and No. 3 (Avenue 26) which in theory covered Quarters 1, 2, 3 and 5 and part of Quarter 4 were not well enough attended (22 425 persons vaccinated).

Centre No. 4 (Dara Waiss mosque) which covered Quarter 6 and part of Quarter 4 also had too low a score (11 724 persons vaccinated) in view of the high population density of Quarter 6.

Centres Nos. 5 and 6 (Boulevard Guelleh-Batal and the Mosque in Quarter 7) in Quarter 7 reported a total of 16 027 vaccinations, which probably represents reasonable coverage of this particularly crowded Quarter.

Centre No. 7 at Arrhiba vaccinated 5589 persons. This housing complex, which was planned to take 4000 inhabitants, may be considered to have received proper vaccination coverage.

Centre No. 8 in the Maison des Jeunes in Quarter 7b vaccinated 4381 persons. This figure is undoubtedly too low.

Centre No. 9 at Ambouli vaccinated only 5721 persons whereas 8526 vaccinations were carried out by this centre in 1974.

In population centres in the interior, the figures reached (4255 vaccinations) may be considered respectable. It should be noted that Bal-Ballah and its immediate surroundings (refuse dump) is as populous as ever with approximately 1800 inhabitants, who are as anxious as ever to receive vaccination cards.

Dr Bernard Carteron
Chief Medical Officer
Director of Public Health

ANNEX 3

REPORT ON THE SMALLPOX VACCINATION CAMPAIGN CARRIED OUT IN THE ALI-SABIEH AND DIKHIL DISTRICTS IN JUNE 1977

The occurrence of a sizable epidemic of smallpox in the Democratic Republic of Somalia impelled us to resume vaccination of the populations of Dikhil and Ali-Sabieh districts. This campaign was carried out in June 1977.

I. ALI-SABIEH DISTRICT

(1) Vaccine

Freeze-dried vaccine from the Pourquier Institute in Montpellier (Batches 838 and 850).

(2) Vaccination technique

Scarification with a vaccinostyle.

(3) Means of action

Two teams from the Department of Hygiene took care of vaccination in encampments in the bush.

One team from the Ali-Sabieh dispensary vaccinated the inhabitants of the town of Ali-Sabieh.

(4) Results

Ali-Sabieh	:	4 500 persons vaccinated
Encampments in the interior	:	3 600 persons vaccinated
Total for the whole district	:	8 100 persons vaccinated

(5) Remarks

The total of 8100 persons vaccinated undoubtedly represents a very good protection rate for the population.

Vaccination has still to be carried out in the Kaba-Kaba region and a military helicopter is to be made available to us for this purpose.

II. DIKHIL DISTRICT

(1) Vaccine

Freeze-dried vaccine from the Pourquier Institute at Montpellier (Batches 838 and 850).

(2) Vaccination technique

Scarification with a vaccinostyle.

(3) Means of action

Two mobile teams.

The first team was provided by the CP Faure and was responsible for the As-Eyla region and the Gcbaad plain.

The second team was created by the Department of Hygiene and carried out vaccinations in the Galafi, Yobocki, Daoudaouya, Bondara and Sankal regions, the Gagade plain, west Hallambelley, Grand Bahra and Petit Bahra.

Vaccinations in the town of Dikhil were carried out by local staff of the Department of Hygiene assisted by a team from the Department of Hygiene in Djibouti. This team made house-to-house visits to achieve as high a coverage as possible.

(4) Results

Team 1	:	1 376 persons vaccinated
Team 2	:	6 958 persons vaccinated
Dikhil team	:	3 304 persons vaccinated
Total for the district	:	11 638

(5) Remarks

Here again, the results appear to be excellent and would seem to indicate good vaccination coverage of the population.

Only two places do not seem to have been reached by our teams:

The Yaguer mountains region

The Agna and Oudguini region on the Kenle plain - because of flooding.

A military helicopter would be very useful for reaching these population groups.

The figures given do not include vaccinations carried out among refugees in these two districts. At the time of writing, up to a thousand vaccinations had been carried out among this temporary population, 660 of them at Dikhil.

Dr Bernard Carteron
Chief Medical Officer
Director of Public Health

ANNEX 4

REPUBLIQUE DE DJIBOUTI

PROGRAMME NATIONAL D'ERADICATION DE LA VARIOLE

ORGANISATION MONDIALE DE LA SANTE

PROGRAMME MONDIAL D'ERADICATION DE LA VARIOLE

BULLETIN HEBDOMADAIRE - VARIOLE

DESTINATAIRE : **Le médecin-chef du Service de l'Hygiène et de l'Epidémiologie - Djibouti.**

CERCLE : .....

SEMAINE. N° .....

SEMAINE TERMINEE LE ....
jour mois année

Nom du village infecté	Nombre de	
	Cas	Décès

Signature ..... Date .....
(MEDECIN DU CERCLE)

1. **Ce bulletin doit parvenir au médecin-chef sans faute, chaque mercredi.**
2. **Si aucun cas ni décès n'a été signalé cette semaine, ce bulletin doit être envoyé avec la mention « néant».**
3. **Veuillez noter tout cas non signalé ces dernières semaines sans tenir compte de la date d'apparition de ces cas.**
4. **Veuillez envoyer ce bulletin complété, chaque semaine, au médecin-chef et garder une copie au centre médical.**

5 Districts

ANNEX 5

DAILY DUTIES OF THE SURVEILLANCE TEAM

When setting out from Djibouti take the following with you: vaccine (20 000 doses), weekly reporting forms for the main towns (chefs-lieux) and the dispensaries, posters, specimen containers, forms for case-finding in rural areas and a register for nomads.

(1) Visit the dispensary for the region and:

Look through the file of weekly smallpox reporting forms. Check that one of the two copies of the weekly reporting form has been sent to the District Medical Officer and the other filed in the dispensary.

Check the register of fever and rash cases. Make a note of those cases entered in the register that have not yet been examined by dispensary staff. Discuss each case entered in the register and make sure that the dispensary has taken all necessary action (samples?, diagnosis, etc.).

See whether there is a reward poster on the wall of the dispensary and whether the dispensary still has a stock of specimen containers, weekly reporting forms, recognition cards and vaccine.

Deliver a supply of vaccine once a month and make sure that the refrigerator in the dispensary or village is working. Make a note of the number of vaccinations carried out since your last visit and remind the nurses to ask each patient whether he has seen any fever or rash cases. Remind them to vaccinate any non-vaccinated patient who comes to the dispensary.

(2) Visits to villages

Contact the village chief and ask him whether he has seen any cases of smallpox, chickenpox or fever and rash in the last few weeks. Ask where the waterholes, nomad encampments and caravan routes are and whether there are any refugees in or near the village. Ask the chief to go with you when you visit waterholes, encampments, refugees or members of caravans. Make sure that the chief is aware of the 5000 DF reward.

Contact the school and, using the recognition card, question the teacher(s) and pupils in each class. Tell them about the reward. Make sure there is a reward poster in the school. Hand out recognition cards to the teachers and ask them to question the children at regular intervals (with the help of the recognition card) about any cases of smallpox they may have seen.

Visit each house and see whether there are any cases of smallpox, chickenpox or other fever and rash. Question people in the market, by the mosque and in shops as well as floating population groups (nomads, refugees, members of caravans, etc., seen in the streets or around villages) and enter any cases you find in the form for case-finding in rural areas.

Contact those cases of fever and rash that have been entered in the register of fever and rash cases at the dispensary you have visited, but which have not yet been examined by the medical officer or nurse. Contact and examine the cases of fever and rash reported to you during your house-to-house search for cases in villages or during your round in the district. From such cases take a specimen for the Laboratory and make a note of the name, age, sex and address of the patient, the date the rash began and the patient's vaccination status. If you think that the case may be smallpox report it immediately to the Senior Medical Officer of the Department of Hygiene and Epidemiology at Djibouti. All information you obtain on fever and rash cases should also be entered in your register of fever and rash cases.

(3) Priority should be given to the search for cases of smallpox (and to the search for information on cases of smallpox in the region) among the following population groups: nomads, members of caravans and refugees.

Question each nomad or member of a caravan that you meet on your way and, in particular, visit all nomad encampments, caravan routes and waterholes. Village chiefs may be able to give you information on the sites of the various waterholes, caravan routes and nomad encampments. Ask the village chief to go with you to show you the way or, when this is not possible, find somebody else in the village to act as a guide. Most of your time should be spent in questioning these floating population groups. Introduce yourselves to them as surveillance workers from the Department of Hygiene.

Ask whether there are any people in the encampment suffering from fever and rash.

Show them the recognition card and ask whether they recognize the smallpox rash. Tell them that there are cases of smallpox in Somalia and possibly in Ethiopia and tell them the risk this entails for Djibouti. Ask them whether they have seen any cases of smallpox in Djibouti, Somalia or Ethiopia. Tell them about the 5000 DF reward and the need to report any case of smallpox to the nearest dispensary. Give out some handbills.

Check the vaccination status of each nomad, member of a caravan, or refugee (and any other persons whom the vaccination team would have difficulty in contacting) and vaccinate those who do not have a recent scar.

If you find a suspected case of smallpox, contact the Senior Medical Officer of the Department of Hygiene and Epidemiology as soon as possible, leaving one surveillance worker with the patient. If you think the patient is likely to leave the place where you examined him within 48 hours try as far as possible to take him with you to the dispensary in the main town (chef-lieu) for examination.

Specimens should be taken from any patient with fever and rash. In any place where there are several cases of chickenpox, take a specimen from one severe case of chickenpox and a specimen from one unvaccinated case.

(4) Visit all Groupement Nomade posts

Check that such posts have a supply of posters, handbills, case-finding forms, report summaries and recognition cards.

Check that each surveillance worker at the post is completely familiar with the methods for looking for cases of smallpox and for obtaining information on cases of smallpox. Check that the results of their search are properly written up and check the weekly summaries. Make sure that suspected cases and information on fever and rash cases have been examined and if not, make the examination yourself by going to see these cases.

REPUBLIQUE DE DJIBOUTI

PROGRAMME NATIONAL D'ERADICATION
DE LA VARIOLE

ORGANISATION MONDIALE DE LA

PROGRAMME MONDIAL D'ERADICATION DE LA
VARIOLE

EQUIPE DE SURVEILLANCE DES CERCLES DU SUD. . . . . NORD. . . . . .

RAPPORT MENSUEL DE SURVEILLANCE

Mois. . . . . .

Année . . . . . .

DATE	HALTE POUR LA NUIT	ESSENCE EN LITRES	KMS PARCOURUS	BREVE DESCRIPTION DU TRAVAIL JOURNALIER

ANNEX 6

GROUPEMENT NOMADE - SMALLPOX SURVEILLANCE

As a result of the fight, unprecedented in the history of preventive medicine, that has been waged for the last two years to eradicate smallpox from the world by means of active surveillance (i.e. by the search for smallpox cases by medical personnel with the assistance of the whole population), this deadly disease has been disappearing from one continent after the other.

The only cases now known to exist are those which have been reported in Somalia, although the possibility of some foci in Ethiopia cannot be excluded.

In view of the fact that many people, particularly refugees, nomads and members of caravans are crossing its borders every day, the Republic of Djibouti may be in danger of admitting cases of the disease among such population groups. For this reason an appeal has been made to the members of the Groupement Nomade to assist the country in smallpox surveillance.

Instructions

(1) Whenever you meet refugees, nomads or members of caravans, or whenever you are carrying out surveillance among people in villages, encampments or at a water hole, enter in the first column, beside the date on which surveillance was carried out, the category of population group examined (nomad, caravan member or refugee) and write down the approximate number of people questioned.

(2) Write down in the second column the place from which the persons concerned have come, i.e. whether they have come from Somalia or Ethiopia, and write down the town nearest to their point of departure.

(3) Write down in the third column the place at which your examination was made (name of the water hole, etc.).

(4) Write down whether the person examined is suffering from smallpox or chickenpox, or has fever and rash (columns four, five and six).

Note down on the back of the form the name, age, sex and address of the sick person. If you think the person concerned will remain in the same place for 24-48 hours, report the case on the same day to the head of your post and also to the senior medical officer of the district so that he can come and examine the case. If the patient concerned is a nomad who may not be available for examination within 24 or 48 hours, escort him when possible to the dispensary in the main town or to the nearest dispensary, where he will be examined by the medical staff.

(5) Show the recognition card to the people you question and ask them whether they know what disease the child in the photograph is suffering from: if they do not know tell them that the disease is smallpox. Ask them whether they have seen any cases of smallpox, chickenpox or other fever and rash at Djibouti, or in Somalia or Ethiopia. If so, take down all the information available on such cases (name, age, sex, full address) on the back of the surveillance form.

(6) A reward of 5000 DF will be given to anyone reporting a laboratory-confirmed case of smallpox, regardless of whether the person reporting is a nomad, refugee, member of the Groupement Nomade or a nurse. Ask those you question whether they know about the reward and tell them that they should report any information on a case of smallpox to the nearest dispensary.

Give the report(s) to your head of post on your return to your post.

GROUPEMENT NOMADE — RÉPUBLIQUE DE DJIBOUTI

CONTROLE DE LA VARIOLE

NOM DU CONTROLEUR : .... TITRE : .... LIEU D'AFFECTATION : ....

Date de contrôle Nomades Caravaniers Campements Réfugiés Points d'eau Autres (spécifiez)	Provenance des nomades, etc.	Lieu de contrôle	Suspects de variole *	Varicelle *	Autre éruption avec fièvre *	Connaissance de cas de variole			Connaissance de la récompense de 5.000 FD
						en Ethiopie	en Somalie	à Djibouti	

* Toute personne suspecte de variole ou ayant une éruption avec fièvre doit être escortée dans la mesure du possible, au dispensaire le plus proche, et le chef de poste informé. Tout cas suspect de variole doit être également signalé immédiatement au médecin chef du Service d'hygiène et d'Epidémiologie, Djibouti-Ville.

Le nom, âge, sexe, adresse de cas suspects de variole, varicelle ou toute autre fièvre avec éruption doivent être inscrits au verso. Tout renseignement de cas de variole dans la République de Djibouti, en Somalie ou en Ethiopie doit également être inscrit au verso.

REPUBLIQUE DE DJIBOUTI

GROUPEMENT NOMADE

RAPPORT HEBDOMADAIRE — CONTROLE DE LA VARIOLE

DESTINATAIRE : **LE MEDECIN-CHEF DU SERVICE D'HYGIENE ET D'EPIDEMIOLOGIE DJIBOUTI - VILLE**

Date : ..... **Semaine terminée le :** ..... **Poste GN :** .....

jour mois année **Cercle :** .....

Nombre de personnes interrogées Nomades Caravaniers Campements Points d'eau Réfugiés Autres (spécifiez)	Nombre de cas suspects de variole	Nombre de cas de varicelle	Nombre de cas de fièvre et éruptions	Nombre d'informations de cas de variole/ varicelle/autres cas de fièvre et éruption	Noms des dispensaires ayant reçu les malades suspects ou les renseignements concernant : variole, varicelle, fièvre éruptive

Nom et signature du chef de poste,

Date : .....

ANNEX 7

SMALLPOX SURVEILLANCE IN REFUGEE CAMPS
SURVEILLANCE WORKER'S DAILY DUTIES AT ALI-SABIEH AND DIKHIL

Ali-Sabieh camp

(1) Whenever refugees arrive at Guelileh, make sure that none of them leave Guelileh for the camp or for Djibouti without being vaccinated.

(2) Whenever refugees are being vaccinated by the staff of the Department of Hygiene at Guelileh, use the recognition card to question the refugees for any information they can provide about smallpox in Somalia or Ethiopia and at the same time make sure that none of them are suffering from fever and rash. Any refugee with fever and rash should be reported to the medical officer at the Centre on the same day and should be isolated.

(3) Wherever possible, get officials to give you each day the names of the families leaving Guelileh for Ali-Sabieh camp and the number of the tent/house that has been assigned them.

(4) With the help of the record forms previously made out by the Department of Hygiene make a daily check on each tent/house and write down the date of your visit on the form entitled "daily visit to refugee camp".

Make sure that the number of persons in each tent/house corresponds to that on the form. When the family in a tent changes, fill in a smallpox surveillance form for them (names of adults and children, date of vaccination, date of arrival in the camp, provenance, and whether the family knows of any cases of smallpox in Ethiopia or Somalia or among the refugees in Djibouti).

Check whether each member of the family has been vaccinated. If a refugee has not been vaccinated at Guelileh or another frontier post, carry out the vaccination yourself.

(5) Make sure that the vaccination of any refugees vaccinated at the border has taken. If not, revaccinate the refugee concerned.

(6) Check whether any refugee shows signs of fever and rash. If so, notify the camp medical officer that day. Take a specimen for laboratory tests and send it to the Department of Hygiene and Epidemiology at Djibouti.

(7) List all refugees with fever and rash and attach a copy of the surveillance form with details of the patient's family. The list should be given each week to the Sanitary Inspector of the Djibouti Department of Hygiene for the Senior Medical Officer.

(8) Make a list of the vaccinations you have carried out (with name, tent number, etc.). The list should be given each week to the Sanitary Inspector of the Department of Hygiene and Epidemiology at Djibouti.

(9) If a family leaves the camp permanently to return to Somalia/Ethiopia or to go to Djibouti, write down the date of departure and, if possible, the family's destination. The family's record form should be handed over to the Sanitary Inspector of the Department of Hygiene.

(10) Write down in the register of fever and rash cases at the Ali-Sabieh dispensary any information on fever and rash cases that you have obtained from refugees.

Dikhil

Until further notice, visit the refugee camp one day a week (follow instructions 3-9).

ANNEX 8

MINUTES OF THE MEETING OF THE MEDICAL AND PARAMEDICAL SUBCOMMITTEE ON REFUGEES

The Medical and Paramedical Subcommittee on Refugees met on Sunday 11 December 1977 at the Ministry.

The following were present:

Mr Abdi Noel - Member of the National Committee for Assistance to Refugees.

Mr Ngandu - Representative at Djibouti of the United Nations High Commissioner for Refugees.

Dr Ahmed Absieh Warsama - Director of Public Health.

Dr Grasset - Smallpox eradication campaign, WHO, Geneva.

Dr Perrin - Peripatetic Medical Officer, in charge of the Ali-Sabieh refugee camp.

Chief Pharmacist Perroux - Chief Pharmacist of the Pharmacy Supply Office of the Republic of Djibouti.

Dr Carteron - Senior Medical Officer, Chief of the Department of Hygiene and Epidemiology.

The agenda:

provided for examination of staff, equipment and drug requirements for health surveillance activities and treatment of the sick in Ali-Sabieh and Dikhil refugee camps and for the forthcoming requirements to be met at Yobocki for refugees from Eritrea and Haoussa.

At this meeting, attention was also drawn to other matters relating, among other things, to hygiene, prophylaxis, maternal and child health (MCH), health education and shelter.

The working group made the following recommendations with regard to the various matters discussed:

I. Personnel

After a rapid review of the numbers of public health staff in the districts of Ali-Sabieh and Dikhil, it was unanimously agreed that one medical officer and one or two nurses were required to supervise each camp in addition to the existing district medical staff. The refugees' medical team would need, for technical and political reasons, to work in close collaboration with the local health service in order to avoid any differences in the quality of treatment given to refugees and to the local population.

For the present, the requirements were set out as follows:

One medical officer and two nurses at Ali-Sabieh.

One medical officer and one nurse at Dikhil.

In theory, these requirements will be met for approximately six months.

The question of replacements will come up in the second half of 1978.

II. Equipment and drugs

On the suggestion of Chief Pharmacist Perroux, it was agreed to concentrate on medical equipment, which is at present in short supply, rather than on drugs. As far as these were concerned, it was proposed to keep to a restricted list and to avoid duplication of the drugs in stock at the Pharmacy Supply Office of the Republic in order to avoid waste. All the members of the Subcommittee felt that the drugs offered by international agencies should not be reserved strictly for refugees but should form part of the drug pool of the country in order to harmonize the resources of the Public Health Service and the resources made available to the refugees in the interest of all. These two sources of supply should be complementary.

It was to be noted that at present the operation of health services in the camps is largely dependent on supplies of gifts in kind from a number of countries, in particular the Federal Republic of Germany, the United States of America, the French Republic and the United Arab Republic (Egypt), and also in part on equipment and drugs supplied by the local Public Health Service.

The recommendations made on this topic were as follows:

The erection of four tents fitted out for the provision of emergency medical and surgical care in the camps at Ali-Sabieh, Dikhil, Yobocki and Guelileh.

The erection of enough small tents to house all the refugees in Ali-Sabieh, Dikhil and Yobocki camps.

The erection of five large tents at Guelileh. These are essential for the medical screening of refugees crossing the border.

Proposals for ordering drugs and equipment would be made by the Chief Pharmacist of the Pharmacy Supply Office in agreement with the medical officers looking after the camps. Orders would be made on an annual basis and restricted to a few broad categories of essential drugs.

As far as the Department of Hygiene was concerned, a number of products and equipment were proposed (see annexed list). The order would be prepared by Dr Carteron. The insecticides and disinfectants would be sufficient to meet the needs of the four camps for one year.

III. Hygiene, prophylaxis, MCH, health education

Water supply appeared to be the problem of greatest priority at Ali-Sabieh and Dikhil. People in those two places are at present using polluted water that is most probably the cause of the many cases of diarrhoea reported by Dr Perrin. From information provided by the Departments responsible for the repair of the pumping stations at Dikhil and Mouloud it appeared that the problem would soon be solved.

Supplying the camps with electricity also seemed a desirable measure to enable the medical officers to provide care at night and to keep a number of medicinal products, including vaccines, under refrigeration.

The medical officers of the camps will shortly receive:

Smallpox vaccine from WHO

BCG vaccine from the C. P. Faure Tuberculosis Centre.

DPT injectable vaccine and oral polio vaccine from the United States Embassy.

A supply of cholera vaccine would be held on call at the Department of Hygiene in Djibouti.

Smallpox surveillance should at present be the main concern of the medical officers in charge of the camps. Whenever refugees are received from Guelileh, Ali-Sabieh and Dikhil, the following action should be taken:

(1) All new arrivals should be vaccinated without exception.

(2) They should then be kept in quarantine for about 10 days to make sure they are not incubating the disease and to make sure the vaccination has taken.

Ali-Sabieh camp should be checked over daily by a person recruited by WHO or UNHCR, who would be responsible in particular for filling in the family medical record forms, checking that vaccinations have taken and looking out for any smallpox rash developing among the refugees.

Any member of a family or any complete family leaving the camp should be reported at once to the camp medical officer with, where possible, the address of their destination.

It appeared that some people crossing the frontier at Guelileh were not refugees but ordinary travellers who did not meet vaccination requirements. It was necessary to make sure that such people were in possession of an international certificate of vaccination, otherwise they would have to be kept in quarantine like the refugees.

This measure, which would be difficult to apply, would require additional police assistance at the Guelileh checkpoint. The problem is not specific to Guelileh but occurs at all frontier posts, where the same policy should be followed.

In the case of malaria, which is normally not found in the Republic of Djibouti, the steady influx with the refugees of the parasites responsible for the disease is likely to set off a disastrous epidemic among the country's inhabitants who have no immunity to malaria. To avoid this risk the following action would have to be taken:

(1) To take a thick and a thin blood film for examination for malaria parasites from all persons with a case of fever. The slides should be sent for reading to the Department of Hygiene at Djibouti. Until the results are received, the persons concerned should be given nivaquine.

(2) Control of the Anopheles vector should be strengthened throughout the country, in particular at Ali-Sabieh and Dikhil. It should be carried out by a special team from the Department of Hygiene, which would be set up as soon as the question of vehicles for the transport of staff and equipment has been settled.

Cholera should also not be neglected since there were rumours of this disease in certain areas of Ethiopia.

Any suspicious case of diarrhoea should therefore be subjected to bacteriological examination. Stools should be sent to the Department of Hygiene at Djibouti in a transport medium obtainable from the senior medical officer of the district.

With regard to maternal and child health, it was recommended that two tents be provided, one for Ali-Sabieh and the other for Dikhil, in which to keep equipment, drugs and special foods. A list of the requisite equipment, drugs and foods is annexed.

A short health education programme on a number of topics (smallpox, tuberculosis, malaria, water use, diet) might be provided with the help of flannelgraphs.

Lastly, it appeared that the immediate provision of two vehicles (type R4) for the two peripatetic medical officers at Dikhil and Ali-Sabieh would be extremely useful, if not essential, for their travel and for regular contacts with the various administrative and medical services at Djibouti.

ANNEX 9

The constant flow of refugees to our borders exposes the population to serious epidemiological risk.

The three following diseases, which do not at present affect our population, may break out at any moment:

(1) Smallpox. Smallpox surveillance is being carried out throughout the country under WHO auspices as part of the WHO Global Smallpox Eradication Programme. Refugees arriving from areas where there has been no health surveillance for several months may bring in cases of the disease and extreme vigilance is required.

(2) Malaria. In the last few weeks there has been a massive influx of refugees carrying malaria parasites. The existence of the formidable vector Anopheles gambiae, for example at Dikhil and possibly also at Ali-Sabieh where entomological investigation is not yet complete, is likely to lead to epidemics with a high death toll among our unprotected population unless stringent measures are taken at once. Subsequently these epidemics could lead to the establishment of endemic malaria, which Djibouti has never experienced. In view of the fact that these refugees are moving about freely, other foci apart from Ali-Sabieh and Dikhil could also appear in other parts of the country, such as at Bondara-Cheketi, As-Eyla, Yobocki, Galafi, Gorabous, Holl-Holl, Guchamale, Damerjog, Atar, Douda and Ambouli, where the vector is also known to exist.

(3) Cholera. There are rumours that this deadly disease, which the people of Djibouti know well, has appeared in some areas of Ethiopia and it too should be carefully looked for whenever refugees are admitted.

Measures must be taken to allow cases to be detected on arrival and to prevent the spread of these diseases. Such measures which unfortunately are not always easy to apply in view of their political repercussions, are:

(1) For smallpox:

The need to vaccinate without exception all refugees crossing our borders. The need to keep them in quarantine for about 10 days to make sure that they are not incubating the disease and to check that their vaccinations have taken. This period of quarantine would also be useful for detecting incubating cases of cholera and finding cases of malaria.

The need to require all travellers and members of caravans crossing our borders to be in possession of a smallpox vaccination card. The card would be issuable at all frontier posts, which would be supplied with vaccine for this purpose.

(2) For malaria:

The systematic taking of a thick and a thin blood film from all cases of fever in order to detect carriers of the malaria parasite.

Control of the Anopheles vector in all breeding sites now listed and investigations to detect any increase in the distribution area of this vector.

(3) For cholera:

Bacteriological investigation of any suspicious case of diarrhoea with isolation of the patient until the results of stool culture have been obtained.

If these measures are approved by the authorities, additional resources will be needed to carry them out properly.

(1) Personnel

The police force, at Guelileh in particular, will have to be strengthened to allow health surveillance to be carried out under the most favourable conditions. At the same time, the number of health surveillance workers will also have to be increased.

Groupement Nomade units at all frontier posts will have to be requested to check the vaccination status of people crossing the border and be asked to vaccinate such people where necessary.

Ten hygiene workers will have to be recruited as soon as possible for a special anti-malaria team.

(2) Technical equipment and insecticides, such as Swing-Fog thermal foggers for regular disinsection of camps and a non-toxic larvicide, such as Abate, to control Anopheles breeding sites.

Cross-country vehicles: two vehicles are required - a Land Rover (or Toyota) station wagon with a long chassis and a Land Rover (or Toyota) pick-up for carrying equipment (thermal foggers, sprayers, shovels, picks, rakes, etc.) and the 10 persons assigned to the special anti-malaria team.

The two Toyota vehicles purchased by WHO will be in full-time use for smallpox surveillance and cannot be used for any other purpose.

* * *