

THE SURVEILLANCE SYSTEM AND METHODS USED TO IMPROVE REPORTING

II. DAHOMY

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Smallpox control has entered a new phase as progress to date causes us to believe, without undue optimism, that we really are on the way towards eradication.

STATUS OF SMALLPOX IN DAHOMEY

Dahomey is one of the countries of Africa in which the incidence of smallpox before the campaign was still relatively high, despite immense efforts made by the Government since independence. The situation was better in towns, but troublesome in rural areas because of:

- 1) Lack of hygiene and crowded living quarters, which provide optimum conditions for uninterrupted transmission
- 2) The practice of variolation by some religious sects
- 3) The great number of temporary farm settlements which are frequently overlooked by administrative censuses and escape medical inspection.

In addition to these difficulties, there was opposition to vaccination by some ethnic groups, a shortage of executive personnel, and insufficient financial resources.

Dahomey, which has a population of about 2.5 million, is divided into 32 "health areas", each corresponding to political boundaries. It is further subdivided into sectors. Semi-mobile operations supplement those of the exclusively mobile services. The health areas and sectors are usually run by physicians but occasionally by senior nurses. There are, in addition, 174 rural clinics. These all took part in smallpox control by giving vaccinations, exercising surveillance over areas for which they are responsible, notifying cases by telegram and immediately applying the initial preventive measures before any action was taken by the mobile teams. Such was the organization in Dahomey on the eve of the great measles/smallpox campaign in Africa.

NEW ARRANGEMENTS DURING THE ERADICATION CAMPAIGN

Since the beginning of the eradication campaign, operations have been exclusively carried out by the mobile teams of the Service des Grandes Endemies. Special procedures have been established for medical districts, hospitals, out-patient medical posts and dispensaries, both official and private, and all rural and mobile units as follows:

- notification by telephone of suspected cases of smallpox is required within 24 hours after detection.
- clinical cases must be confirmed in a weekly report.
- the person in charge of a health area is required to make a post-infection vaccination test. This test consists of

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vaccinating any confirmed or suspected case during convalescence. The reaction five to eight days after the vaccination confirms or invalidates the clinical diagnosis.

In addition, an action team of three persons have been formed in each of the three mobile unit sectors into which the country is divided. The duty of the team is to supplement the medical district's vaccination activities and to carry out epidemiological investigations to detect the source of infection, contacts and the villages through which a case has passed and put them under surveillance. This team, which has other duties as well, is required to be ready to act immediately after notification.

In addition, a monthly news publication for health personnel was initiated. Teachers, agricultural instructors, missionaries, and peace and progress volunteers were requested to notify cases. Finally, health units were required to submit a standardized monthly report, one copy of which is sent directly to the central office and the other to the person in charge of the area to enable him to compile an overall monthly summary.

Following the systematic, vaccination programme, additional studies were conducted to determine regional morbidity rates in order to define the geographical zones where strict surveillance was necessary and to determine particularly susceptible groups and areas where immunity was low. Among other things, these surveys showed that in certain areas one-third of the population had been absent from their villages when vaccinations took place and that over half of this group of absentees consisted of children 1 to 4 years of age. The programme of surveillance and continuing vaccination was drawn up in the light of these data.

#### SURVEILLANCE BY HOUSE-TO-HOUSE VISITING

Apart from the surveillance exercised by mobile teams, the rural health services, teachers and agricultural workers, there are 12 health visitors in Dahomey who have been specially trained for house-to-house visiting and whose job includes the active detection of cases of smallpox in zones where the situation gives cause for anxiety and the vaccination in these areas of all children from 0 to 4 years of age and all persons not bearing vaccination scars. The health visitors travel by motor bicycle and carry with them the freeze-dried vaccine and bifurcated needles. They wear a small apron around their waist with compartments for sterilized needles, for used needles and for vaccine. When vaccination has been performed, the used needle is placed into one of four compartments representing 1) primary vaccinees - 0 to 4 years of age, 2) revaccinees - 0 to 4 years of age, 3) primary vaccinees - 5 years of age and over, 4) revaccinees - 5 years of age and over. Vaccinations performed during a day by age and vaccination status can be easily determined by counting the needles in each pocket.

Visits are made early in the morning when everybody is in the village. The afternoon is utilized for publicity and health education in the villages to be vaccinated on the following day. Priority in visiting is assigned to areas which are inaccessible during the rains. An evaluation team determines the level of immunity before and after visits to the villages. The evaluation team also controls vaccination techniques and supervises the punctuality of personnel.

Vaccinations and surveys under this programme were carried out from 11 March to 26 April 1969 in one of the areas where endemic smallpox has always been a matter of concern. During this period, 23 villages were visited and 22,356 persons were vaccinated, including 4,351 primary vaccinees. No cases of smallpox were detected.

This pilot programme confirmed the importance of the approach in troublesome areas. The bifurcated needles were found to be especially useful. It was found that about

70 vaccinations could be performed daily by each vaccinator at a cost of 92 CFA per vaccination.

#### CONCLUSION

It is clear that the continual evaluation and improvement of operational methods, the organization of surprise visits, the strict application of measures decided on, and the active and systematic search for cases and for unvaccinated persons are the only roads to final victory over smallpox and measles.

The strengthening and improvement of our system of surveillance and case-finding led initially to the recording of an alarming number of cases, which was erroneously considered to be a recrudescence of smallpox, in Dahomey. However, as against 802 cases in 1967, there were only 431 cases in 1968 and three cases during the first quarter of 1969.

The unique experiment described, combining active case detection and selective vaccination, was carried out in one of the largest smallpox foci in Dahomey. Not a single case has been notified there for more than four months.

It is still too soon to speak of success but for us, knowing of the difficulties of access in this area, the problems of variolation and the hostility of the population, it is an unprecedented victory, all credit for which must be given to the organizers of the campaign and to the representatives of the National Communicable Disease Centre serving in Dahomey.