The SEP Report, Volume IV, Number 1. Proceedings of the Seminar on Smallpox Eradication and Measles Control in Western and Central Africa. Lagos, Nigeria, May 13-20 1969. Part I.

USE OF HOUSE-TO-HOUSE SURVEYS IN FINDING SMALLPOX CASES

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Early in the autumn of 1968, a letter was sent from the National Communicable Disease Center to 9 countries of West Africa where smallpox was endemic suggesting methods by which smallpox transmission might be rapidly halted. The approach which was outlined has come to be referred to as "Eradication Escalation".

At early planning meetings for the Eradication Escalation activities, the first conclusion reached was that we, in Togo, did not have enough personnel to carry out such a programme. We were about to enter the dry season after a long and very wet rainy season which had entirely interrupted the mass campaign and put it considerably behind schedule. Wishing to take advantage of the dry season for mass campaign activties and to avoid additional set-backs in the campaign schedule we could hardly afford to use any of the personnel from our vaccination teams for fire-fighting or active surveillance work. Our three vaccination teams consist of a total of only 12 people.

If we were to carry out Eradication Escalation activities effectively, we knew, we would first have to extend and reinforce our surveillance network. In fact, actions had already been taken to do just that, and we actually found ourselves in the uncomfortable position of having created enthusiasm among the many people recruited to look for and to report cases while being without the means to provide an immediate response to their reports. In other words, we had succeeded in extending and reinforcing only half of the surveillance programme, that of reporting. Should we be unable to respond to case reports with fire fighting teams we felt that enthusiasm among the volunteer reporters would soon decline.

This argument was used to reinforce our request for additional personnel. For active surveillance as well as fire-fighting activities, we also felt that it would be in our interest to have personnel who were directly under our control and who could report regularly whether or not cases of smallpox were occurring in their areas. Two separate and unrelated events occurred, however, which enabled us to have, temporarily, the additional people we needed.

First a large smallpox epidemic developed in September in Anecho Health Sub-Division. This Sub-Division is in the southeast corner of Togo and is a densely populated agricultural area with about 175 persons per square kilometre. It is also the pilot area of the WHO Basic Health Services Project and the demonstration zone of the Malaria Programme. Anecho has a group of some 15 itinerant health workers assigned to the Basic Health Services Project, whose job it is to visit every village, hamlet and farm in their respective districts once a month. Because of the gravity of the smallpox epidemic they were put at our disposal.

These health workers were trained in multiple puncture vaccination with the bifurcated needle and were directed to carry out a systematic house-to-house vaccination programme. I might add, parenthetically, that Anecho had been vaccinated during the mass campaign, but for several reasons, primarily the coincidence of annual tax collection with the campaign and resistance of some people to vaccination, the coverage was less than 50%. (The overall vaccination scar rate was, however, much higher).

During the months of October, November and December 1968, the months when the itinerant health workers were carrying out their vaccinations, 89 cases of smallpox were detected in Anecho. All 89 were found by these men either during the house-to-house vaccination programme or in case investigation.

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During the next month, October, we were informed that spraying activities carried out by the malaria programme were temporarily interrupted and that we could employ these personnel for smallpox work until the end of December. With the additional personnel, we were able to (a) increase the size of our regular mobile teams, (b) establish an assessment team with bicycles purchased from the Ministry of Health smallpox budget, (c) field 8 teams of 6 people each to carry out house-to-house vaccinations and smallpox search and (d) establish one highly mobile fire-fighting team. We were also given the whole of the malaria programme supervisory staff to supervise and to co-ordinate activities.

Their activities were many. Teams were put into areas reporting smallpox to vaccinate the surrounding area after the immediate contacts had been vaccinated by the fire-fighting team. Teams on bicycles conducted mass campaigns in one Circumscription, a mop-up campaign in another, and active surveillance and maintenance vaccination in the rural areas of Lome.

Everywhere they worked, they went from door-to-door and looked for smallpox. During October, November and December they performed over 75,000 smallpox vaccinations. Perhaps more important, however, the temporary staff found three-fourths of the total reported smallpox cases. In December, for example, they found 80 of the 84 total cases during the month.

Although we were originally told that we could employ the malaria staff only through the end of December, they were in fact with us until mid-February. From October 1 until their various dates of return to their regular activities the temporary staff vaccinated 352,363 people including 40,866 primary vaccinees. In carrying out the house-to-house search for smallpox, they found 226 cases, slightly over 80% of the total during the period.

I would, however, offer a word of caution to anyone who may contemplate using a system involving house-to-house visits. Close supervision is required. In Anecho, supervision was not adequate and in April of this year, we suffered the consequences-an outbreak of 45 cases, including 8 deaths. These cases were found by the supervisor of the itinerant health worker who was responsible for vaccinating the area concerned. The supervisor heard a rumour that smallpox was present in this area. He himself found the cases, having been unable to locate the itinerant agent whom he had not seen for two months. Apparently, this was a unique situation; surrounding areas appeared to have been better vaccinated. The epidemic is believed to have been stopped by the rapid and responsive action taken by this supervisor. No cases have been found with an onset date later than April 10, although it was only a week earlier that the first case was discovered.

We have seen in Togo that, provided there is adequate supervision, one can make good use of temporary and auxiliary personnel in smallpox surveillance. The value of a house-to-house search for smallpox in suspect areas seems obvious. Had it not been for this particular approach, Togo would not have recorded a record number of smallpox cases in 1968 and, in fact, we would have noted a marked decline in reported cases during the final quarter of 1968. Of the 207 cases reported only 34 were detected by the normal surveillance network.

Having noted the lack of sensitivity of the normal surveillance network, we somehow sleep better at night when we know that someone will be out tomorrow, knocking on doors, looking for that last case of smallpox.