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Smallpox Vaccination through Local Bodies in East Pakistan(1961-68).

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ntroduction

East Pakistan, 55,134 Square Miles in area, lies between 20° N. and 7° N. latitude and 83° E. longitude. The climate is humid with temperature anging from 50° F. in winter to 102° F. in Summar. Rainfall varies from 5" to 150". According to 1961 census the total populatiom of East Pakistan as about 50.9 million. Now it is estimated that the population has ncreased to 70 million. The density of population per square mile is about 200.

East Pakistan had always been one of the highly endemic region or Smallpox in the Sub-Continent and attacks and deaths caused by this isease continue to be a major health problem. During the last few decades pidemics have occurred in our country at intervals of 4 to 6 years reaching eak of incidence in the month of March and April. The last major epidemic ccurred in the year 1057-58 recording about 1,03,980 cases and 77,040 eaths (Table 1).

Table - 1.

No. of cases and deaths due to smallpox in East Pakistan from 1951 to 1960.

Year	Cases	Deaths
1951	38,871	30,341
1952	10,490	8,053
1953	1,102	788
1954	445	188
1955	1,926	979
1956	4,962	3,173
1957	24,920	18,149
1958	79,660	58,891
1959	15,048	9,508
1960	1,805	1,271

Organisation in East Pakistan for Preventive aspect of Health Activities.

Administratively East Pakistan is divided into 4 divisions, 18 Districts, 54 Sub-divisions, 409 Thanas and 4061 Unions. As it exists now Public Health Activities in East Pakistan are joint responsibilities of both the Government and the Local Bodies and the services are manned by both Government and Local Bodies at different levels. Local bodies are semi-authnomous organisations having a number of civil functions including Public Health Activities. Their activities are supervised by the Government who help the Local Bodies financially by lump grants as well as with technical advice when requested. Local Bodies consist of two main components, viz., Municipalities at the Urban areas and District Councils at the Rural level. In Urban areas entire Public Health activities are organised by Municipal Health authorities. In the Rural areas, however, the Government shares these responsibilities with the District Council Authorities. An attempt was made to take over the Health Services of the Rural areas of the

5 districts completely by the Government and in that process the Health Services of 5 districts out of 18 have so far been brought under full administrative control of the Government, These five districts are called "Provincialised Districts" while the other 13 districts, known as "Non-provincialised Districts" are still under dual control of District Councils and the Government.

The organisational set up which carried out the mass vaccination campaign in rural areas since 1961 is given in Table 2.

Table -2.

Organizational set up for mass vaccination campaign in Rural Areas of East Pakistan since 1961.

dministrative Level	No.of Unit.	Staff. Designation	Govt.	Local Bodies	Total
edical Staff.					
rovincial Level.	1	Director of Health Services.	1	-	1
ivision Level.	4	Deputy Director of Health.	4	-	4
istrict Level Non-Provincialised)	12	Civil Surgeon/ Dist.Health Officer.	12 -	 12	12 12
ist.Level Provincialised).	6	Chief Medl.Officer of Health.	6	-	6
ub-division level.	54	Sub-divisional Medl. Officer of Health.	54	-	54
ield Staff.					
hana Level.	409	Sanitary Inspector	150	259	409
nion Level.	4061	Vaccinators.	3681	1084	4765

Organization and staff in Urban areas varied according to the opulation of the Municipal area concerned. Usually every municipality has ne Health Officer under whom there are a number of Sanitary Inspectors, ealth Assistants, and Vaccinators.

Procedure for mass vaccination.

(i) Recruitment of staff :- The basic Health Staff for both the Rural and Urban areas were already in existence as described above. However, any shortage of field staff was made up by additional recruitment so that there was at least one health assistant in each union. They were trained in vaccination techniques, recording etc. before being sent to the fields.

(ii) Vaccine :- Freeze Dried Smallpox Vaccine manufactured in the Institute of Public Health, Dacca, was used in the campaign. Supply was made from the Institute according to requirements of the area concerned direct to the Sub-divisional Medical Officers of Health who distributed it to the vaccinators through the Sanitary Inspectors.

(iii) Transports :- Transports were arranged for the Supervisory Officers at the district and Sub-divisional Level. A few country boats were arranged on hire basis for the field staff but the number of boats engaged was not adequate.

(iv) Vaccination and Recording :- House-to-house vaccination method was adopted using rotary lancet and the records were maintained in family-cards system using separate cards for each family. Informations regarding vaccinations were recorded in these cards showing address, name, sex, date of vaccination or re-vaccination and results. These records were submitted by the Health Assistants every week to the Sanitary Inspectors for compilation of data for onward transmission to the Provincial Head Quarters through their respective district health authorities.

(v) Legislation for Compulsory Vaccination:- By promulgation of an ordinance both primary vaccination and re-vaccination every three years were made compulsory under law.

(vi) Reporting of Cases :- The village Chowkiders and the Health Assistants were the reporting agents for smallpox cases occurring in their jurisdiction.

laintenance Phase.

Although attack phase of the campaign was planned to be completed etween 1961 and 1963 and maintenance phase was intended to be started from 964, it was found that only 65% of population was covered by vaccination y the end of 1963. So the methodology adopted during the proposed mainteance phase was almost same as that of attack phase for covering the unrotected persons as well as re-coverage of the already immunised persons. owever, the essential components of maintenance phase viz. case detection stablishment of adequate reporting system and containment measures could ot be enforced to a desirable extent due to certain administrative and inancial difficulties. As a result, although the number of smallpox cases ame down dramatically by 1964, it started rising again gradually which can e seen from Table 3.

Table - 3.

No. of cases and deaths due to smallpox and vaccination in East Pakistan from 1961 to 1968.

Year	Cases	Deaths	Vaccination.
1961	660	409	2,78,00,338
1962	610	379	2,85,85,153
1963	4,212 4,212	2,856	2,24,77,907
1964	72	42	1,98,40,374
1965	316	142	1,92,29,008
1966	3,217	1,429	2,83,37,68
1967	6,648	3,456	2,64,74,860
1968	9,039	4,032	3,28,26,474

he difficulties experienced in this phase are summarised as follows:-

i) Administrative:- Staff engaged for supervision and field work were under lual control of Local Bodies and Govemment Field Workers of one organisation ould not be administratively controlled by the supervisory staff of the

her. Due to lack of direct line of command there was practically no co-eration leading to inefficient discharge of duties by many members of the aff.

i) Delay or lack of case detection :- As is usually practised, village owkiders, who are quite often ignorant of the importance of reporting and e not under administrative control of the Health Department, are primarily sponsible for reporting cases. However, non-governmental sources e.g. ws paper reporters, School Teachers, Private Practitioners, also inform e health authorities about the outbreak of Smallpox at their own initiative.

As reports from the village Chowkiders and non-Governmental agencies re neither regular nor reliable and the Government reporting agents could t be posted in every village and also as the guardians of the patients re reluctant to notify smallpox cases in spite of statutory provisions, rveillance system was extremely inadequate. Even when cases were detected villages the information reached the next higher level of the Health sistants i.e. the Sanitary Inspector in Thana level or the District thority quite late due to inadequate means of communication in the rural eas and necessary measures could not be taken in due time.

ii) Delay in taking containment measures :- Once the case report reached e Thana level the Sanitary Inspector could report this to the Sub-division District Headquarters for necessary help or he himself could organise ams by pooling resources within his own jurisdiction. But as again the ans of communication is slow, especially during the monsoon floods, cessary help from the Thana or Sub-division/District could reach the llage after several days by which time the patient had already infected the sceptible contacts. Isolation of the smallpox patient is difficult in llages as most of the families have only one/or two rooms which are usually ercrowded and it is difficult to spare an entire room for the patient.

(iv) Utilisation of Health Assistants for purposes other than Vaccination:-

In the maintenance phase, quite often, the vaccinators were simultaneously engaged for some other health activities like anti-cholera inoculation, sanitation etc. leading to diversion of their attention from the main objective and often work of vaccination against smallpox suffered.

(v) Enforcement of Vaccination Laws :- Authorities for enforcement of laws and imposition of punishment to those who resist vaccination cannot take prompt action against them due to existing time-consuming procedural formalities making the statutory provisions for compulsory vaccination ineffective.

(vi) Registration of Births :- Although there is a regulation for compulsory registration of births, this is seldom enforced. This has made finding out new-born infants for immunisation difficult. Village Chowkiders are supposed to collect vital-statistical data but these low-paid and ignorant personnel do not understand the importance of these reports and quite often fail to report births and deaths.

(vii) Lack of adequate statistical organisation :- There is only a small nucleus of statistical unit under the Directorate of Health Services, for statistical work. At present the main function of this unit is to compile data received from the districts. The data received from the districts are most often incomplete and unreliable. This makes any organised and planned work difficult.

(viii) Floating Population :- In East Pakistan there are about one million people who constantly move from place to place for work and livelihood. They do not have any fixed address and since they are constantly moving about it is difficult to find them for immunisation. Most of them use country boats as means of communication and often live on these boats. Dissemination of infection by these people is not uncommon.

ix) Supply of Vaccine :- Freeze Dried Vaccine once re-constituted cannot be used in the field after 24 hours due to deterioration of potency. Sometimes vaccinators cannot utilise the entire quantity of vaccine in a container within 24 hours. But since the local bodies have to pay for the vaccine, the wastage sometimes becomes very uneconomic. Hence the local bodies often insist that the vaccinators must fully use the vaccine of each container. This often leads to use of reconstituted vaccine even after 24 hours leading, sometimes to use of impotent vaccine.

x) The immediate supervising staff over the Health Assistants are the Sanitary Inspectors. As these Sanitery Inspectors are responsible for all public Health Activities in his thana jurisdiction which includes sanitation, food hygiene, notification, communicable disease control, vital statistics, etc. they cannot give full attention to smallpox vaccination campaign.

To prevent the difficulties mentioned above the following remedial measures appear to be necessary :-

(i) Abolition of dual administration in Health Administration.
Health administration in all the districts should be brought completely under one authority for smooth administrative control of workers in the field.

(ii) Supply of vaccine:- Regular supply of potent vaccine, free of cost, to the Local Bodies for vaccination compaigns has to be ensured.

(iii) Encouragement to Field Workers:- In order to implement the Programme, sincere and devoted field workers are needed. So, to encourage the field workers, some incentive in the shape of financial help and appreciation for their sincere services are required. Proper office and residential accommodation of the field workers in rural areas should be arranged.

(iv) Health Education Programme should be strengthened so that illiterate and ignorant villagers become conscious about importance of Health measures and willingly co-operate with Health Department workers.

(v) In the rural areas the Union Committee is the primary unit of the Local Bodies. The Chairmen and the members of this Committee have got great influence over the general mass. So the services of these people are more useful for any programme conducted in rual areas. In this connection the help of the district and sub-divisional administrative authorities is necessary. They also may be of assistance in collection of vital statistical data, enforcement of regulations on compulsory vaccination and in arranging accommodation for the staff in the field. Co-operation of these officials should be ensured.

vi) Provision for adequate transport should be arranged.

vii) Collection of vital statistical data should be given its due emphasis by organising a good system under the control of Health Department.

The failures in these mass vaccination campaigns have provided us with experience of mass vaccination and brought to light the difficulties hitherto not known to us. Being enriched with these experiences and information an eradication campaign for the entire country has been planned under the auspices of the W.H.O. and it has been launched already in two sub-divisions of Dacca District. It is expected that the eradication programme will be completed by the year 1973.