



WORLD HEALTH ORGANIZATION
ORGANISATION MONDIALE DE LA SANTÉ

SMALLPOX ERADICATION SEMINAR

Kinshasa, 19-26 November 1968

STATUS OF SMALLPOX ERADICATION ACTIVITIES

COUNTRY ZAMBIA1. Demographic data1.1 Estimated population (1967)

<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
0-4	<u>380 000</u>	<u>376 400</u>	<u>756 400</u>
5-14	<u>519 400</u>	<u>518 200</u>	<u>1 037 600</u>
15 and over	<u>1 092 000</u>	<u>1 128 000</u>	<u>2 220 000</u>
TOTAL	<u>1 991 400</u>	<u>2 022 600</u>	<u>4 014 000</u>

1.2 Proportion of population which is nomadic Nil %2. Smallpox incidence and vaccination data2.1 Annual smallpox incidence by Province/Region (1958-1967) - (Table 1)2.2 Monthly smallpox incidence (1964-1968) - (Table 2)2.3 Smallpox cases by age, sex and vaccination status - 1967 - (Table 3)2.4 Vaccinations performed by Province/Region (1966-1968) - Table 4)3. Vaccine3.1 Liquid vaccine

Amount of liquid vaccine still being used (% of total) - 1967	<u>42</u>
1968	<u>Nil</u>

3.2 Freeze-dried vaccine

<u>Sources (producers) - 1968</u>	<u>Amount</u>
<u>USSR</u>	<u>1 000 000 doses</u>
<u>Swiss</u>	<u>450 000 doses</u>

3.3 Vaccine storage

3.3.1 All vaccine at the central depot continuously stored at less than 10°C

Yes

No

3.3.2 Adequate refrigeration facilities in the interior of the country to permit storage at less than 10°C

Yes

No

3.3.3 All vaccine used less than 30 days after removal from refrigerated storage

Yes

No

4. Vaccination

4.1 Personnel engaged in vaccinations:

4.1.1 Vaccinators	200
Other field staff, including recorders, drivers, etc. . .	30
Supervisory personnel (paramedical)	30
Supervisory personnel (medical officers)	8

4.1.2 Organization of vaccination effort

<input checked="" type="checkbox"/> House to house:	<input checked="" type="checkbox"/> Collecting points
<input checked="" type="checkbox"/> Vaccinators working alone;	Border posts
<input checked="" type="checkbox"/> Vaccinators working in teams	Campaign
<input type="checkbox"/> Other	<u>Health institutions</u>

4.1.3 Number of vaccinators directly supervised by one supervisor 8 - 14

4.1.4 Average number of vaccinations performed daily by each vaccinator or team 50 per vaccinator

4.1.5 Vaccination targets by Province/Region, 1968-1970 - (Table 5)

4.2 Technique of vaccination used now:

Percentage performed
by this method

4.2.1 Multipuncture (bifurcated needle)	<u>80%</u>
Ped-O-Jet	<u>Nil</u>
Other (specify) <u>Scratch</u>	<u>20%</u>

4.2.2 Usual preparation of skin before performing vaccination, (i.e. water, nothing, etc.) Soap and water if dirty, otherwise nothing

4.2.3 Method of sterilization of vaccination instrument

Boiling Flaming None

4.3 Reconstituted vaccine used only on the day on which it is reconstituted

Yes

No

4.4 Method for recording of vaccinations (please attach sample of sheets used for recording of vaccinations)

Tally sheet (vaccinees recorded only by age, vaccination status)

Yes

No

Other registry system (specify) _____

4.5 Youngest age for beginning vaccination

Birth Yes _____

Three months _____

Other _____

4.6 Contra-indications to vaccination other than severe, acute illness

No

Yes - specify _____

5. Programme

5.1 Supervision

5.1.1 Proportion of time spent in field by supervisory staff checking directly on the work of vaccinators and lower level supervisors

- | | | | |
|--|----------------------------|----|---|
| (a) By staff at | District level | 70 | % |
| (b) By staff at | Provincial level | 20 | % |
| (c) By staff at National level | 15 | % | |

5.1.2 Measures taken when vaccinator performance is unsatisfactory (e.g. reprimand, suspension, dismissal) Reprimand; if persistent may be followed by dismissal

5.2 Assessment

5.2.1 Vaccine "take rates"

Proportion of primary vaccinations in 0-4 year-old children which are checked after seven days to determine takes 10 % or more'

Steps taken when the proportion of successful primary vaccinations falls below 95% Check on vaccination technique, potency of vaccine.

5.2.2 Vaccination coverage

5.2.2.1 Vaccinations performed in each village or area are compared with population estimated to be in area (e.g. village register, census data, other)

Yes

No

5.2.2.2 Assessment of coverage regularly performed in a sample of the population

Yes

No

When coverage in the 0-4 or 5-14 year age-group is less than 85%, the following steps are taken: Team revaccinates the same area.

5.3 Surveillance

5.3.1 Notification of smallpox cases

5.3.1.1 Notification sites

(a) Number of sites which may notify cases of smallpox (e.g. hospitals, health centres, health posts, dispensaries) 461

(b) Number which report at least every two weeks whether or not smallpox cases were observed Nil

(c) Other specialized programmes which report cases (e.g. malaria, yaws, etc. - specify) Nil

(d) Other persons or groups who have been requested to notify cases (e.g. teachers, village headmen, etc. - specify)

Village Headman; District Secretaries; School Teachers.

5.3.1.2 Proportion of cases for which age, sex and vaccination status are recorded 100 %

5.3.1.3 Best estimate of the percentage of cases which are reported

More than 90% Yes

75-90%

50-75%

Less than 50%

5.3.2 Case investigation and containment measures

Case investigation - containment teams ("fire-fighting" teams) have been established in each Province/Region

Yes

No

Proportion of cases in which containment action (verification, vaccination, isolation, etc.) taken within 48 hours after notification 100 %

Proportion of cases routinely investigated to determine the origin of infection 100 %

5.4 Legislative provisions

Vaccination compulsory: Yes No

Enforcement of compulsory vaccination is carried out: Legislation introduced in 1967.

at the time of birth (if born in hospital) _____

at the time of school entry _____ Only now being enforced

at the time of hospital admission _____

Other (specify) _____

Isolation of cases enforced through the time when all scabs have separated

Yes No

Variolation prohibited by law

Yes No

6. Year in which the last endemic cases of smallpox are expected to occur 1968

Describe briefly (two pages) the administrative organization and method of execution of the programme with organizational chart. Discuss specifically with reference to component activities in Table 6. (Attach samples of posters and pamphlets being used in programme.)

1. Background information. The Smallpox Eradication Programme commenced in 1966 and is organized on a Provincial basis whereby a third of each province is vaccinated every year. Before this, however, the vaccination campaigns had been intensified during the smallpox epidemics of 1963 and 1964, and the policy of eradicating the disease by total vaccination of the entire population dates from then. In fact although we are in the third year of the Attack Phase (Phase I) seven provinces - Luapula being the exception - conform to the definition given in Table 6 for the Consolidation Phase (Phase 2).

2. Administrative Organization of Medical Services (Development)

2.1 At central level the Deputy Director has as part of his responsibilities the Smallpox Eradication Programme. This specific responsibility is delegated to the Epidemiologist and the Chief Health Inspector, who has a Deputy to assist him. The WHO Senior Medical Officer/Epidemiologist advises and assists us in the eradication programme.

2.2 In the provinces a Senior Medical Officer, called Provincial Medical Officer, is responsible for the programme, but he delegates the administration and supervision of the programme to his Senior Health Inspector.

2.2.1. In the Municipalities, the Medical Officers of Health and Municipal Health Inspectors organize the vaccination campaign.

2.3 The actual vaccinations are carried out by vaccinators and Health Assistants under the supervision of Health Inspectors, Senior Health Assistants and experienced and trustworthy Health Assistants.

3. Vaccination

3.1 The districts to be vaccinated each year are determined in advance at central level, but the actual programme for each district is worked out by the Senior Health Inspector in each province and submitted to Ministry Headquarters for approval.

3.2 The vaccination team consists of 8 to 14 vaccinators and usually has 2 Land Rovers, tents and other field equipment and the vaccination kits. The team then divides into sub-teams of 3 to 4 vaccinators operating from the base established by the team. An experienced senior health assistant is usually a team leader. (A follow-up team checks the takes after 1 week in about 10% of the vaccinees, and also carries out vaccination where necessary).

3.3 The bifurcated needle is now used for vaccinations, sterilization is by flaming the needles.

3.4 In some provinces the teams give smallpox and BCG vaccinations simultaneously, and in one district of the Luapula Province Smallpox/BCG/Measles vaccination is being tried.

3.5 Vaccinations are also being carried out at Rural Health Centres and Urban Clinics, and special efforts are being made to vaccinate the under five children.

4. Surveillance

4.1 Staff at basic health centres and all health institutions report any suspected

7. (continuation)

case of smallpox to the nearest district hospital or to district Health Inspector. The latter, in turn, notifies immediately the Provincial Health Inspector and proceeds to investigate the suspected case and ensures that adequate containment measures have been taken.

4.2 The Provincial Medical Officer and Health Inspector notifies Ministry Headquarters by telegram and later submits a written report.

5. Laboratory

5.1 Scabs and skin scrapings are taken from every first suspected case and sent for laboratory examination.

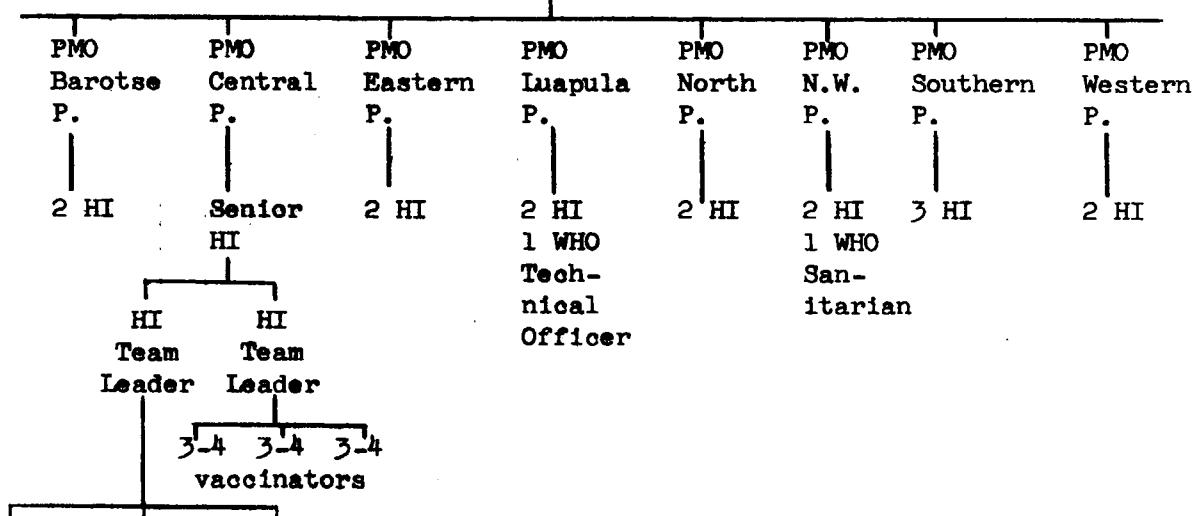
6. Containment

6.1 Every suspected case is isolated, contacts are vaccinated and kept under observation for 2 weeks. Terminal disinfection is performed. An epidemiological investigation is carried out by the Health Inspector to determine the source of infection in every case.

6.2 When it is found that the herd immunity is not high enough, a team is sent to the area to carry out intensive vaccination.

SMALLPOX ERADICATION PROGRAMME
ADMINISTRATIVE ORGANIZATION

CENTRAL LEVEL (DEPUTY DIRECTOR OF MEDICAL SERVICES (DEVELOPMENT)
(EPIDEMIOLOGIST + (WHO SMO/EPIDEMIOLOGIST)
(CHIEF HEALTH INSPECTOR



PMO - Provincial Medical Officer

HI - Health Inspector

2.1 Annual Smallpox Incidence
Incidence annuelle de la variole

TABLEAU 1
(1958-1967 annual figures) (1958-1967 chiffres annuels)

Province (or major administrative area)	Number of cases Nombre de cas						
	1958	1959	1960	1961	1962	1963	1964
Province (ou autre grande subdivision administrative)							
Barotse					3	1	-
Central					43	294	41
Eastern					7	31	4
Luapula					120	289	26
Northern					1 562	1 222	154
North Western					14	1	9
Southern					15	12	1
Western					117	364	293
							37
							1
TOTAL	210	178	350	233	210	1 881	2 214
						528	63
							47

TABLE 2 - Smallpox Incidence by month or four week period
TABLEAU 2 - Incidence de la variole par mois ou période de quatre semaines

YEAR ANNÉE	Jan. Jan.	Feb. Fév.	Mar. Mars	April Avril	May Mai	June Juin	*	July JUIL.	Aug. Août	Sept. Sept.	Oct. Oct.	Nov. Nov.	Dec. Déc.	Total
Weeks Sémanes	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	41-44	45-48	49-52	
1964														2 214
1965	100	87	36	18	36	46		39	21	18	24	61	29	515 (+13)
1966	25	18	3	2	1	1		2	-	2	6	2	1	63
1967	-	1	1	2	-	7		6	15	-	4	10	1	47
1968	-	5	1	2	8	1		-	4	2				23
TOTAL	125	111	41	24	45	55		47	40	22	34	73	31	2 875

* Use this column only if reporting by four week periods

* N'utiliser cette colonne que si les chiffres correspondent à des périodes de quatre semaines

2.3

TABLE 3. CASES BY AGE, SEX AND VACCINATION STATUS - 1967
TABLEAU 3. CAS DE VARIOLE PAR AGE ET SEXE, ET PAR ETAT DE VACCINATION - 1967

- I. Check this box if there were no smallpox cases during 1967.
 Cocher cette case s'il n'y a pas eu de cas de variole en 1967.

II. SMALLPOX CASES BY AGE AND SEX, AND VACCINATION STATUS
 CAS DE VARIOLE PAR AGE ET SEXE, ET PAR ETAT DE VACCINATION

Number vaccinated before exposure
 Nombre de vaccinés avant l'exposition

Age Group Groupe d'âge	Number of cases - Nombre de cas					Vaccinés Non vaccinés	Not vac. Antécédents vaccinaux inconnus
	Male Sexe Masculin	Female Sexe Féminin	Unknown Sexe non précisé	Total			
< 1	9	6		15		-	10
1-4	10	6		16		-	11
5-14	4	6		10		-	7
15+	6	-		6		2	2
Unknown Age inconnu	-	-		-		-	-
TOTAL	29	18		47		2	30
							15

- 10 -

If detailed information is not available for all cases, complete as far as possible.

En l'absence de renseignements détaillés sur tous les cas, remplir la formule dans toute la mesure du possible.

TABLE 4 : TABLEAU 4
 VACCINATIONS PERFORMED (1) : VACCINATIONS PRATIQUEES (1)

Province (or major administrative area)	Population (estimate for 1966)	1966				1967				1968 (2)			
		Primary vaccination	Revac-cination	Total	Primovac-cination	Revac-cination	Total	Primary vaccination	Revac-cination	Total	Primovac-cination	Revac-cination	Total
Province (ou autre grande subdivision administrative)	Nombre d'habitants (chiffre estimatif pour 1966)	Primovac-cination	Revac-cination	Total	Primovac-cination	Revac-cination	Total	Primovac-cination	Revac-cination	Total	Primovac-cination	Revac-cination	Total
Barotse	399 600	30 657	71 952	102 609	34 185	65 609	99 794						25 408
Central	561 400	35 378	220 582	255 960	20 033	110 465	130 498						64 028
Eastern	536 900	15 274	108 418	123 692	9 596	79 287	88 883						26 283
Luapula	393 600	11 966	193 104	205 070	16 407	288 719	305 126						31 260
Northern	620 000	72 798	242 787	315 585	92 896	237 586	330 482						137 759
North Western	229 800	13 834	36 307	50 141	22 083	40 009	62 092						3 138
Southern	516 300	27 143	155 582	182 725	14 569	47 584	62 153						1 516
Western	636 800	66 806	233 156	299 962	30 183	74 625	104 808						46 161
TOTAL	3 894 400	273 856	1261 888	1535 744	239 952	943 884	1183 836						335 553

(1) If data regarding primary and revaccinations are not specifically available, please provide information as to total vaccinations performed.

Si l'on ne possède pas de renseignements précis concernant les primovaccinations et les revaccinations, indiquer le chiffre total des vaccinations pratiquées.

(2) January through June - janvier à fin juin.

4.1.5

TABLE 5 : TABLEAU 5
 VACCINATION TARGETS : VACCINATIONS PREVUES

Province/Region	Number of vaccinations planned - Nombre de vaccinations prévues							
	1968		1969			1970		
	Total	Jan.-Mar.	April-June	July-Sept.	Oct.-Dec.	Total	Total	
Barotse	98 390					166 602	136 614	
Central	71 843					416 665	123 769	
Eastern	134 366					270 398	134 530	
Luapula	95 722					110 689	198 701	
Northern	197 633					275 393	161 481	
North Western	96 444					87 523	91 665	
Southern	182 485					210 802	141 748	
Western	62 268					624 635	108 760	
TOTAL	939 151					2 162 707	1 097 268	

TABLE 6

	ATTACK PHASE (PHASE 1)	CONSOLIDATION PHASE (PHASE 2)	MAINTENANCE PHASE (PHASE 3)
DEFINITION	Endemic areas with an incidence of smallpox of five or more cases per 100 000 population per year and with less than 80% of all segments of the population showing scars of primary vaccination.	Areas with an incidence of smallpox of less than five cases per 100 000 and in which over 80% of all segments of the population show scars of primary vaccination.	Areas free from endemic smallpox for more than two years but geographically situated in an endemic continental area, presently Africa, Asia or South America.
VACCINATION	Systematic mass vaccination.	Continuing maintenance vaccination.	Continuing maintenance vaccination.
SURVEILLANCE	<u>Reporting</u> Establish prompt and regular reporting of smallpox by existing health facilities.	<u>Reporting</u> Extension of case detection system to assure reporting of all suspect smallpox in all segments of the population.	<u>Reporting</u> Extension of case detection system to assure reporting of all suspect smallpox in all segments of the population.
LABORATORY	Establish techniques and methods for the submission and examination of specimens for confirmation of diagnosis.	Specimens studied from all isolated cases and representative samples from each outbreak.	Specimens studied from every suspect case.
CONTAINMENT	Localized, intensive vaccination in community where cases or outbreaks occur. Isolation of cases if feasible.	Vaccination and observation of case contacts. Isolation of cases and appropriate disinfection. Localized, intensive vaccination in community.	Vaccination and observation of case contacts. Isolation of cases and appropriate disinfection. Localized, intensive vaccination in community.
ACTIVITIES			