



TRAINING SEMINAR ON SMALLPOX ERADICATION

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THE PROBLEM OF VARIOLATION RELATING TO THE
SMALLPOX ERADICATION PROGRAMME IN AFGHANISTAN

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The National Smallpox Eradication Programme in Afghanistan has now been in progress for more than three years. Though there has lately been a general decrease in the incidence of the disease because of our systematic mass vaccination and surveillance activities, we are still far from the objective of obtaining a nil smallpox incidence. One main obstacle to the success of the programme has been and continues to be the dangerous practice of variolation prevalent in some parts of the country.

Nature and Extent of the Problem

During May 1970, the people of Peka, a remote village in Achin woleswali of Nangarhar Province, feared that smallpox might spread to their village from nearby Tangai area where a large number of cases were said to have occurred and sent for a variolator operating in a neighbouring woleswali. This man came and variolated more than one hundred children 0 to 14 years of age. The result: five typical smallpox cases - one death. One of these cases transmitted the infection to a sibling. When our team went to investigate the outbreak neither the name of the variolator nor his whereabouts was revealed. Ironical when you think the reported outbreak in Tangai area turned out to be measles and not smallpox!

In February 1971, an outbreak of smallpox in five villages in Qaisar woleswali of Faryab Province was reported to the programme staff. The outbreak containment team that visited a nearby area the previous month did not reach these villages and the people sought the assistance of a local variolator. The unfortunate result was 23 cases of typical smallpox.

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In September 1971, immediately following on the heels of the vaccination teams in Lal Sar Jangal woleswali of Ghor Province, three variolators operated a kind of mopping-up activity, variolating all those missed by the programme staff. The result: 31 cases, seven deaths. Investigations revealed that one of these variolators obtained his material from a fellow variolator who was spreading the disease with impunity in Gezab woleswali of neighbouring Urozgan Province. Nomads infected in the Lal Sar Jangal outbreak moved to Baglan province and were the cause of another outbreak.

Numerous instances such as the above could be cited. However, the real magnitude of the problem posed by the variolators can be seen from Tables 1 and 2.

Table 1

	<u>1970</u>	<u>1971</u>	<u>1972</u> (1 Oct)
Outbreaks initiated by variolation	23	21	2
Total outbreaks	83	107	39
Percentage due to variolation	28%	20%	5%

Table 2

	<u>1970</u>	<u>1971</u>	<u>1972</u> (1 Oct)
Cases directly due to variolation	120	200	12
Cases indirectly due to variolation	213	158	nil
Total of cases directly or indirectly due to variolation	333	358	12
Total of cases during the year	1 044	736	206
Percentage of cases related to variolation	32%	49%	6%

The locations of the outbreaks and the number of resulting cases, for the years 1970, 1971 and 1972 (as of 1 October), are shown in Figure 1, and the distribution of cases by age and variolation/vaccination status in Table 3.

Variolation Practice

The practice of variolation has been in vogue in Afghanistan for centuries. In the past, professional variolators could be found in any part of the country and people willingly accepted variolation for want of anything better to deal with the scourge of smallpox. Even now, ignorant people in remote areas believe that variolation has advantages over vaccination. The fact that variolation can spread smallpox and thus be the cause of severe epidemics is not generally known.

One experienced variolator had this to say about his practice. Variolation was his profession, as it was that of his father and also that of his forefathers. He charged 10 Afghanis, (equivalent to .13 \$US) for each variolation. He was operating in Doshi woleswali of Baglan Province, but when the provincial vaccinators started working in that area, moved to Andreb woleswali where, because of its remoteness, vaccinators had not infiltrated to compete with him and where still there was a demand from the people for variolation. His variolation technique was as follows. He would first grind the smallpox crusts which he carried in a small tin or bottle into powder using a small mortar and pestle. Then he would add a little luke-warm water to the powder to make a paste. A tiny portion of this paste was placed by means of a small scoop on the skin of the dorsum of the left hand of the recipient and multiple punctures into the skin through the paste would then be made using four or five needles of any kind tied together in a bunch. Blood must ooze a little to be sure of a successful operation. Then a bandage was applied over the area. In nine out of ten instances, the variolated person would develop fever and just a few eruptions on his face and extremities in three to four days, thus indicating a 'take'. The eruptions matured and crusts fell off in another four days. According to him, no one suffered from serious disease after variolation. As he pointed out, variolation gave life-long immunity whereas vaccination had to be repeated!

Another variolator we met used a different variolation technique. With a pen-knife he made three linear scratches on the dorsal aspect of the left fore-arm of the recipient, each scratch being half an inch long at right angles to the axis of the limb and then rubbed a few smallpox crusts into the wounds thus caused. A bandage was applied over the area and left for three days. According to this variolator, one in five or one in ten variolations did not 'take'. If more than 20% of the variolations showed no 'take' he obtained new crust material either from a natural case of smallpox or from a variolated case.

The crusts used by variolators are not stored in any special way. The material is kept in a small bottle or tin or even in a paper packet which is then placed in any convenient place in the house. The variolators know by experience that the 'crusts' definitely retain their potency for three months, but at times for longer periods - perhaps up to nine months or one year.

How the Problem is being Tackled

Fortunately, this practice of variolation is nowadays confined to a very few remote areas. Mass vaccination has been extended to these areas with simultaneous health education of the people that one can get protection against smallpox without getting the disease itself, i.e. by vaccination.

Also, the programme staff have been making efforts to contact the variolators wherever possible and persuade them to give up their dangerous practice and to take up, if necessary, vaccination work. So far, 30 male and 2 female variolators have been made to stop their practice by giving them monetary grants or by providing them with bifurcated needles and arranging a regular supply of vaccine so that they can carry on henceforth as vaccinators.

However, there are still a few variolators hiding in remote corners of the country and practising in secret. Thus, besides persuasion, government pressure is also being brought to bear on the variolators. It is felt that as better vaccination coverage of the population, particularly in the 0-4 year age group, is obtained and maintained in these areas, and as the local people get to know the danger of variolation to themselves and to the community, the variolators, finding their practice no longer extensive or lucrative, will automatically give up their present profession and take up alternative means of livelihood.

Additional measures that have lately been adopted are frequent visits by the surveillance teams to the concerned areas as well as the positioning of vaccinators in extremely remote places to serve as listening posts for obtaining early information of any variolation activity. Should variolation be detected as the source of an outbreak, efforts continue to be made to identify the variolator responsible and to induce him to terminate the practice.

Conclusion

The practice of variolation, though diminishing, still poses a problem for the achievement of smallpox eradication in Afghanistan. But with intensified surveillance and vaccination programmes, particularly in the affected areas, it is believed that variolation will cease to be a threat to the success of the programme in the not too distant future.

Table 3

DISTRIBUTION BY AGE AND VARIOLATION/VACCINATION STATUS OF SMALLPOX CASES IN AFGHANISTAN

<u>AGE</u>	<u>TOTAL CASES</u>	<u>1970</u>			<u>UNKNOWN</u>	<u>DEATH</u>
		<u>VARIOLATION/VACCINATION STATUS</u>				
		<u>Variolated</u>	<u>Vaccinated</u>	<u>Unvaccinated</u>		
< 1	53 (5%)	6	-	47	-	14
1 - 4	406 (39%)	58	3	345	-	71
5 -14	444 (43%)	44	29	371	-	49
15+	128 (12%)	7	27	94	-	26
Unknown	13 (1%)	5	-	-	8	12
	<u>1 044</u>	<u>120 (11%)</u>	<u>59 (6%)</u>	<u>857 (82%)</u>	<u>8(1%)</u>	<u>172(16%)</u>

<u>AGE</u>	<u>TOTAL CASES</u>	<u>1971</u>			<u>DEATH</u>
		<u>VARIOLATION/VACCINATION STATUS</u>			
		<u>Variolated</u>	<u>Vaccinated</u>	<u>Unvaccinated</u>	
< 1	54 (7%)	25	-	29	10
1 - 4	270 (37%)	72	2	196	36
5 -14	339 (46%)	90	5	244	28
15+	73 (10%)	13	6	54	5
	<u>736</u>	<u>200 (27%)</u>	<u>13 (2%)</u>	<u>523 (71%)</u>	<u>79 (11%)</u>

<u>AGE</u>	<u>TOTAL CASES</u>	<u>1972</u>			<u>DEATH</u>
		<u>(as of 1 October)</u>			
		<u>VARIOLATION/VACCINATION STATUS</u>			
		<u>Variolated</u>	<u>Vaccinated</u>	<u>Unvaccinated</u>	
< 1	7 (3%)	-	-	7	-
1 -	54 (26%)	4	-	50	9
5 -14	111 (54%)	4	2	105	15
15+	34 (17%)	4	4	26	8
	<u>206</u>	<u>12 (6%)</u>	<u>6 (3%)</u>	<u>188 (91%)</u>	<u>32 (15%)</u>

FIGURE 1

**AFGHANISTAN
OUTBREAKS AND CASES DUE TO VARIOLATION
1970 - 1972 (1 October)**

