From: Chief, Smallpox Eradication 16 January 1973

To: Smallpox Staff

Subject: Target Zero - Progress Report 3

1.0 Introduction

A total of about 65 000 smallpox cases will have been reported during 1972 when all reports are finally tabulated. The total is about 13 000 cases more than 1971 reflecting primarily the increased incidence in India (12 000 cases) and Pakistan (1 200 cases) and the unanticipated reinfection of previously smallpox free areas - Bangladesh (10 500 cases) and Botswana (1 000 cases). The total is far higher than that forecast a year ago but, as I review last January's predictions, I find that we were unduly optimistic in essentially all endemic areas.

Predictions for 1973 are in order at this time. Such predictions are, I believe, useful as they serve to gauge one's degree of familiarity with the problems in each area, the rate of progress being made or anticipated in resolving such problems and one's understanding of the epidemiological situation. The following estimates for 1973 are proposed based on our present appraisal of the situation here in HQ and discussions with many of those responsible for programmes at the national level.

	1972*	1973 *
Ethiopia	16 976	4 000
Sudan	827	200
India	25 902	17 000
Pakistan	7 046	4 000
Bangladesh	10 540	5 000
Others	2 109	500
	63 400	30 700

* Data as of 15 January

The estimated total of 30 700 cases during 1973 would be approximately the same number as was recorded in 1970 but hopefully in 1973 reflecting far more complete reporting. Your comments and suggested revisions in regard to these estimates would be welcomed.

2.0 Progress at national level

The continuing sharp decline in smallpox incidence in recent months in the remaining endemic African countries - Botswana, Ethiopia and Sudan is clearly the most gratifying development of the past year. It is noted that the last cases detected in Botswana occurred at the end of October - only six months after intensified control measures were first inaugurated. In Ethiopia and Sudan, a sharply declining curve of incidence during the September - December period when normally there is a seasonal increase in incidence is a startling development. A similar phenomenon was observed in the West African countries in 1969 and in South America in 1970. In both of these areas, transmission was interrupted less than 12 months later. Obviously, a great deal of hard work lies ahead, especially in the active search for cases and hidden foci. However, the reversal of a normal seasonal trend provides strong indication that the surveillance teams and the programmes as a whole are operating effectively. Both would appear able to meet the goals established.

Nepal and Afghanistan continue to record small numbers of cases resulting from importations from India and Pakistan respectively. This, too, is a remarkable accomplishment as in both countries, there are considerably more formidable problems of logistics, transport and communication than in several of those countries which are still endemic. Since both countries now have surveillance activities which extend throughout their respective countries and since both have been able to document all cases during the past 6 months or more to be directly or indirectly due to importation, Nepal and Afghanistan will henceforth be regarded provisionally as "non-endemic" and beginning in March will be so shown in the tables in the WER - assuming, of course, that this situation still prevails.

Programme developments in Bangladesh are likewise encouraging. Twenty-one surveillance teams have now been established and a surveillance report is now being published. Although smallpox incidence remains high, problems and problem areas have been reasonably clearly defined and active measures are being taken to cope with them. The 31 March objectives and the objective of a nil incidence by the time of the rainy season will be difficult to achieve but these are still in view.

Pakistan and especially India appear now to be the most problematical countries and the two least likely to meet the established targets. In Pakistan, comparatively few cases are being reported from the two northern provinces (Punjab and NWFP). While both appear to be on the verge of interrupting transmission, the persistence of outbreaks which are traced to continuing endemic foci in both provinces is disturbing. Little information is available from Baluchistan regarding the sources of infection of outbreaks and in Sind, endemic smallpox is widespread with comparatively few Districts yet functioning satisfactorily. In India, the problems are more serious and of increasing concern to us all. The reporting system, although better than a year ago, again shows signs of deterioration (see Section 4.0). Extensive outbreaks are *now occurring in Jammu and Kashmir, previously considered to be smallpox-free*

and Punjab and Haryana are reporting increasing numbers of cases. Widespread outbreaks are occurring in Uttar Pradesh and neighbouring districts of Madhya Pradesh and now appear to be spreading southwards in Madhya Pradesh. Health staff in Bihar have been on strike and reporting is recognized to be grossly deficient. The comparative absence of cases in the southern states, the absence of reported cases (but also reports) from the eastern states and an acceleration of efforts in West Bengal may be regarded as hopeful signs. However, the prospects for reaching the agreed 31 March deadlines appear very doubtful indeed. Unless increasingly forceful measures are taken in India, it would seem not unreasonable to expect that 80 to 90 percent or more of the world's cases during the latter part of 1973 would be in India.

3.0 Technical note

In an article in Lancet (18 November, 1972), Dr Derrick Baxby reports having identified three strains of poxvirus from camels in Iran whose properties he states are indistinguishable from strains of variola isolated in East Africa. The article is to be regretted as three other investigators have examined these and other camelpox virus strains and all agree that they can readily be distinguished from variola virus. Neither we nor any of our collaborating laboratories, including the WHO International Reference Centre, consider these isolates to be as Dr Baxby has described them nor do we consider them of any practical epidemiological significance.

The 9 December issue of Lancet (also quoted in Time) carries an article which describes the apparently successful treatment of several smallpox patients in Bangladesh with cytosine - arabinoside (Ara-C). In brief, seven of nine patients treated beginning about the sixth day of illness had a satisfactory outcome with an abnormally rapid or abortive evolution of rash and systemic symptoms. The description of the observations sounds most persuasive and sufficiently striking to warrant further trials, assuming these can be arranged. This is now being explored. I believe, however, that we can only regard these observations as hopeful and the results must be interpreted with caution pending further, careful confirmatory studies. It must be noted that a considerable number of anti-viral drugs have been developed and subjected to experiment in the past but few have even begun to fulfill their original promise. Perhaps Ara-C may be different but further studies will certainly be required.

4.0 Reporting

Reporting from all areas except India is increasingly prompt. By 9 January, reports from all areas should have been received by WHO through week 52. Except for Bangladesh (received 14 January), reports were received from all areas except those in India. Regretably, the status of reporting in India continues to show deterioration. It is noted that the cumulative number of weeks for which all states were delinquent was 34 per Report 1; 40 per Report 2; and, for this Report, 58. This is most disturbing and deserves urgent attention.

The following endemic areas were in default:

	No. of weeks
Bangladesh	1
India - Arunachal Pradesh	3
Assam	2
Manipur	6
Meghalaya	4
Nagaland	8
Tripura	2
Chandigarh	4
Delhi	1
Haryana	1
Himachal Pradesh	7
Jammu & Kashmir	3
Punjab	1
Rajasthan	1
Bihar	3
Madhya Pradesh	2
Uttar Pradesh	1
West Bengal	2
Kerala	3
Goa	3
Maharashtra	1

5.0 Target areas

5.1 Cases occurring within target area	Oct.	Nov.	Dec.
Ethiopia	383	217	272
Pakistan	142	457	582
India	341	986	1 819
Bangladesh	295	608	260

Cases occurring outside target area but specifically traced to importations	Oct.	Nov.	Dec.
Afghanistan	5	0	8
Fr. Terr. of the Afars and Issas	1	0	0
Somalia	0	5	0
Nepal	0	21	5
Sudan	0	0	1

Total of all cases in category 5.1	Oct.	Nov.	Dec.
	1 167	2 294	2 947
Percent of world total cases in category 5.1	51	53	66

5.2 Cases occurring outside target area	Oct.	Nov.	Dec.
Botswana	50	0	0
Sudan	5	16	18
Ethiopia	384	481	304
Pakistan	246	112	213
India	308	692	634
Bangladesh	113	715	321
Total of all cases in category 5.2	1 106	2 016	1 490
Percent of all cases in category 5.2	49	47	34

Note: Data as of 9 January 1973