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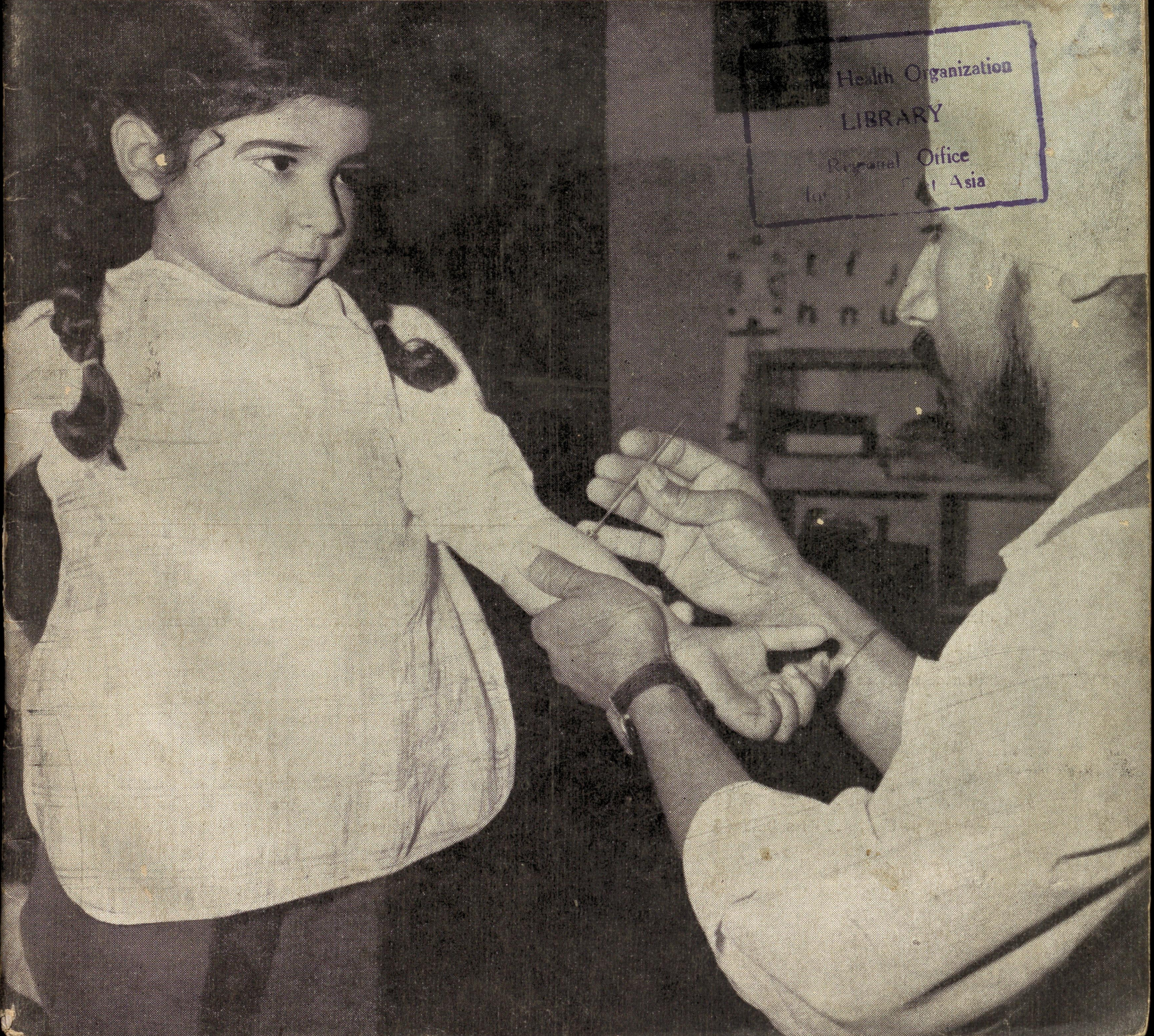
Swasth Hind

SEPTEMBER 1964

SMALLPOX ERADICATION NUMBER



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SWASTH HIND

Objectives

Swasth Hind (Healthy India) is a monthly journal in English published by the Central Health Education Bureau, Directorate-General of Health Services, Ministry of Health, Government of India, New Delhi. Some of its important objectives and aims are to :

REPORT and interpret the policies, plans, programmes and achievements of the Central Ministry of Health.

ACT as a medium of exchange of information on health activities of the Central and State Health Organizations.

FOCUS attention on the major public health problems in India and to report on the latest trends in public health.

KEEP in touch with health and welfare workers and agencies in India and abroad.

REPORT on important seminars, conferences, discussions, etc., on health topics.

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Articles on health topics are invited for publication in this journal. State Health Directorates are requested to send reports of their activities for publication.

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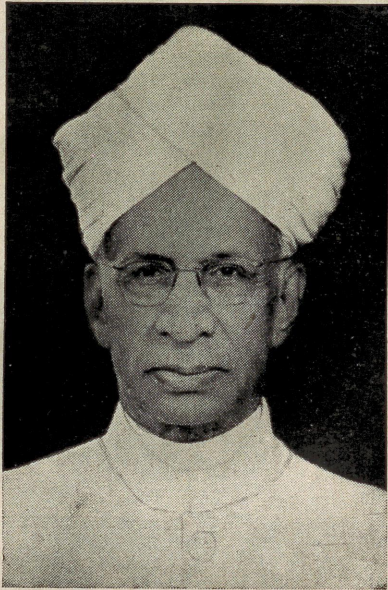
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OUR COVER

Smallpox has been eradicated from many countries. This achievement was possible by vaccination and re-vaccination in a systematic manner of the population.

India has launched a national programme to rid the nation of this disease. And this objective can be achieved only if all the people are successfully vaccinated and re-vaccinated. Every year the Smallpox Eradication Day is observed to focus attention of the public and to educate the people on their role in the implementation of the programme. *Our Cover* shows a child being vaccinated.



RASHTRAPATI BHAVAN
NEW DELHI-4

I am glad to know that Smallpox Eradication Week is again being observed this year from 25th September to 1st October. In recent years the programme has made a good headway and 274 millions of people have been vaccinated resulting in significant reduction in the number of cases of smallpox. Much more, however, remains to be done. It is necessary to vaccinate the entire population and to maintain the high immunity level during successive years, if smallpox is to be wiped out completely. To achieve this, cooperation from all sections of the community is essential and I trust it will be forthcoming in abundant measure. My best wishes for the success of the Week.


(S. RADHAKRISHNAN)



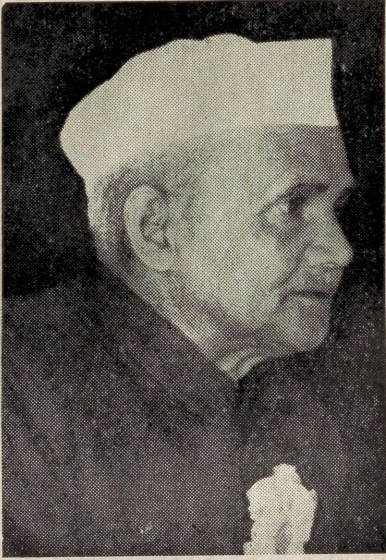
VICE-PRESIDENT
INDIA
NEW DELHI

I am glad to know that the Ministry of Health is again celebrating Smallpox Eradication Week from 25th September to 1st October. Smallpox Eradication Programme has been under implementation for nearly two years and it is gratifying to learn that by now more than half the country's population stands vaccinated and that there has been sizable reduction in the incidence of smallpox this year.

I wish every success to the Ministry of Health in achieving their target of eradication of smallpox.

A handwritten signature in dark ink, appearing to read 'Zakir Husain'. The signature is written in a cursive style with a long horizontal line underneath.

(Zakir Husain)



PRIME MINISTER'S HOUSE
NEW DELHI

Smallpox is a terrible disease and the effort to eradicate it is no doubt laudable. It is good to know that more than 60 per cent of our population has already been covered. I want to convey my good wishes for the success of this Smallpox Eradication Programme.

Lal Bahadur

(Lal Bahadur)



MINISTER FOR HEALTH
INDIA
NEW DELHI

I am very happy that this year also a Smallpox Eradication Week is being observed all over the country from 25th September in order to review what has been achieved and how to increase the tempo of smallpox eradication campaign for the early elimination of smallpox from our land.

We are entering the third year of the implementation of National Smallpox Eradication Programme. I understand that nearly 274 million people have been vaccinated, *i.e.*, 62.6 per cent of the population stands vaccinated and this has been responsible for appreciable reduction in the incidence of smallpox this year. But we must cover the remaining 37.4 per cent as soon as possible.

It is most important to ensure that in the areas covered, there is not a single case of smallpox and if a case occurs, it is immediately investigated and cordoned off by intensive vaccination all round so that 100 per cent of the population in all sections is successfully vaccinated. All newborn children should be vaccinated within the first six months and revaccinated on admission to schools. Immigrants and floating population has also to be vaccinated and measures initiated for rapid control of any localized outbreak or sporadic cases of smallpox.

I am convinced that eradication of smallpox is attainable because the only reservoir is man, infection is manifest, carriers do not exist and successful vaccination provides effective immunity for a reasonably long period.

I appeal to all sections of the people to extend their active cooperation to smallpox vaccination teams in their respective areas so that smallpox disappears from India and the present stigma on the fair name of our country is removed.

Social and Preventive Medicine Departments should help the teams by vaccinating large numbers with the help of medical students and interns. Let there be intensive mopping up operations so that covered areas at least are made completely safe as a result of the work done during the Week.

Sushila Nayar

(Sushila Nayar)

PROGRESS IN SMALLPOX ERADICATION

Dr K.M. Lal

Smallpox has continued to be a major epidemic disease in India in spite of the knowledge for the last two centuries that vaccination affords protection. The Government of India in 1962 launched a national programme for the eradication of this disease and although only 60 per cent of the population has been covered, sizable reduction in the incidence of the disease has taken place. The author in this article details (1) the different aspects of the programme, progress made so far and what remains to be done in the years to come to achieve the goal of eradication and (2) the ultimate eradication can be achieved only if there are no indigenous cases for three years in succession after the attack phase.

SMALLPOX stands foremost amongst epidemic diseases in tenacity and malignity with which it has pursued human race for centuries. It has claimed millions of lives every year and has caused considerable suffering to those that have survived its onslaught. It is an anachronism that smallpox still exists with us for the means of prevention have been known to medical profession since the end of eighteenth century.

GLOBAL SITUATION TODAY

Europe, North America and Oceania are free from smallpox, having eradicated it by sustained public health efforts, that is, vaccination, re-vaccination, isolation of cases, mass vaccination of contacts and maintenance of an efficient surveillance machinery. Even those Continents that are free

from disease are becoming increasingly liable to the importation of infection from persons incubating the disease or suffering from mild attacks, as has been shown by recent experiences in England, West Germany, Poland and Sweden. The disease is still endemic in most countries in Asia and Africa and has not been completely eradicated from Latin America. Some countries like Argentina, Bolivia, Cambodia, Ceylon and Thailand have succeeded in controlling the disease in the recent years.

In Asia, the principal endemic areas are India and Pakistan. In the epidemic of 1951, out of nearly five lakh cases reported throughout the world, 2.5 lakh cases were from India alone. The same picture was repeated in the epidemic of 1957-58, in which India accounted for nearly two lakh cases out of four lakh cases, thus clearly indicating that our country was responsible for nearly 50 per cent of the total cases

reported in the world in the two previous epidemics. The reported cases, however, represent only a fraction of those that occur.

The number of reported cases in the world in the years 1958-62 is given in the table below, which highlights that Asia is the biggest reservoir of smallpox.

CASES OF SMALLPOX REPORTED IN THE WORLD

	1958—1962				
	1958	1959	1960	1961	1962
Africa	14,403	14,155	15,851	24,146	23,984
America	4,334	4,899	3,090	1,923	3,029
Asia	227,229	58,487	39,241	52,342	46,629
Europe	12	14	47	25	136
Oceania	—	—	1	—	—
TOTAL	245,978	17,555	58,230	78,430	73,778

INCIDENCE IN INDIA

In India, 31,052 cases were reported in 1960, 44,537 in 1961 and in 1963 the number went up to 69,768 which indicates the return of the epidemic cyclicality (epidemic years during 1963-64). The incidence of smallpox in India is given in the table below :

SMALLPOX INCIDENCE AND DEATHS IN INDIA

Year	1950—1964	
	Cases	Deaths
1950*	1,57,487	41,201
1951*	2,53,332	64,580
1952	74,836	17,116
1953	37,311	9,072
1954	46,619	11,375
1955	41,887	8,598
1956	45,109	10,931
1957*	78,666	23,150
1958*	1,64,403	45,014
1959	45,115	11,595
1960	31,052	7,876
1961	44,537	12,313
†1962	55,719	15,750
†1963*	69,768	21,341
1964* (upto 31 July)	26,178	7,276

*Epidemic Years

†Figures for 1962 and 1963 are provisional

Eradication Programme

Taking note of the periodicity with which epidemics were occurring in the country, the Government of India, Ministry of Health first appointed a Central Expert Committee in May 1958 to examine the question of smallpox in all its aspects and to suggest ways and means for its eradication. Acting on the recommendations of this Committee and on the recommendations contained in the Pilot Project Committee report, the National Smallpox Eradication Programme was launched in October/November 1962 with the object of eradicating smallpox by successfully vaccinating the entire population with a potent vaccine, after undertaking a preparatory phase which included recruitment and training of staff and purchase of vehicles and equipment. An expenditure of nearly Rs seven crores was sanctioned by the Planning Commission for this programme.

In the two years that the programme has been in operation, good progress has been achieved. One hundred and fifty-six eradication units are now operating in the country and by now 273 million population has been vaccinated, *i.e.*, 62.6 per cent of population stands covered.

Impact of the Programme

There has been a marked reduction in the incidence of smallpox during the current year of periodic cyclicality (November 1963 to May 1964) as compared to the same period during the two previous epidemics of 1950-51 and 1957-58 as is evident from the following figures:

SMALLPOX CASES AND DEATHS DURING EPIDEMIC

	Cases	Death
1950-51 (Nov.-May)	224,510	57,305
1957-58 (Nov.-May)	141,920	37,488
1963-64 (Nov.-May)	26,077	7,124

It may be stated that if 100 deaths occurred during the first epidemic of 1950-51, 65 deaths occurred during the second epidemic of 1957-58 and 13 deaths occurred during the third epidemic of 1963-64, that is, there was a reduction by 35 per cent in the second epidemic when compared to the first and there has been reduction of 81 per cent when the figures of the present epidemic are compared with the figures of the last epidemic of 1957-58.

Assam, Gujarat, Kerala, Mysore, Orissa and Punjab have recorded a very sizable reduction in the number of cases and deaths. There has also been a very significant lowering of incidence in Andhra Pradesh, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh. Madras city and Chingleput district in Madras State have been responsible for a large number of cases in Madras State, whereas Madras State as a whole has shown sizable reduction in the number of cases. Same picture is seen in the case of West Bengal, where all districts have shown less incidence barring Burdwan district (which includes Asansol Mines Board area), districts of 24 Parganas, Bankura and Murshidabad. Bihar has, however, recorded the largest number of cases during 1964 and the districts responsible are Bhagalpur, Hazaribagh, Santhal Parganas, Gaya, Patna and Muzaffarpur. Main reservoirs are the big cities which are densely populated and it is there that smallpox is getting its shelter. Statistics of smallpox incidence, when projected for a six-year period (1958-1963) indicate that Madras city in Madras State, Bombay city in Maharashtra State, Patna and Gaya in Bihar, Calcutta in West Bengal, Hyderabad in Andhra Pradesh and similarly the other big cities in other States have been reporting smallpox cases for 50 to 100 per cent of total weeks, clearly demonstrating the persistent endemicity level in big cities.

Vulnerable age-groups that fall victims to smallpox are age-groups 0-4, 5-10 and 15-29 which means that sizable pockets of infants escape primary vaccination and there has been no systematic revaccination at age five or six when the child enters primary school and at age eight or 10 when the child goes from primary school to a secondary school.

Evaluation of the Programme

Smallpox eradication programme has been subjected to an independent assessment and evaluation

in several parts of the country. Such assessments have brought to light the shortcomings and difficulties responsible for the continuance of smallpox even after 80 per cent overall coverage was obtained. First assessment was carried out by a Special Committee in March 1963 in Delhi and the lacunae responsible for the occurrence of cases were highlighted in the report and the Delhi authorities are busy in plugging the lacunae vividly brought out in the evaluation report. This is reflected in the marked reduction of incidence during 1964 inasmuch as during the first six months, only 73 cases out of which 50 were imported, were reported from Delhi as against 508 during the same period in 1963. Similar assessments and evaluations have been carried out in Mysore district (Mysore State), Chingleput district in Madras and Palghat district in Kerala. Benares district in U.P. is being evaluated at present by the authorities of the National Institute of Communicable Diseases. State health authorities have also been

All—young and old—need protection against smallpox



asked to conduct concurrent assessment on the guidelines supplied to them.

Our Targets

(a) *Attack Phase* : At the time of launching of the programme, it was envisaged that at least 80 per cent of all sectors of the population would be successfully vaccinated during a period of two years. As coverage of only 80 per cent of population has

(b) *Maintenance Phase*: The maintenance phase of the programme which includes vaccination of all the newborns, re-vaccination of the school-going population, re-vaccination of immigrants and floating population and re-vaccination of all the contacts on the occurrence of an imported case must go on simultaneously in those areas which have been covered, and continued indefinitely in all parts of the country after the attack phase.



Vaccination of children in the schools is also organized

been found to be unsatisfactory and pockets of population remain unvaccinated, it has been decided that hundred per cent of all sectors of population should now be successfully vaccinated. To achieve this, the attack phase of the programme, during which mass vaccination and mopping up operations have to be carried out, will be continued till the end of Third Plan period, *i.e.*, for a period of three years.

Three Essential Fundamentals

Three essential fundamentals for the success of this programme are being constantly kept in mind.

- (i) Effective administration which includes integrity of the staff in correct recording of the results of vaccination and at the same time using correct technique of vaccination.

- (ii) An adequate supply of potent vaccine which will remain stable in hot climate.
- (iii) People's acceptance of the programme.

Smallpox Eradication Week

A whole week beginning 25 September, 1964 is being observed again this year to arouse consciousness amongst the people that vaccination against smallpox affords sure protection and to carry out mass vaccination programme in slums and in pockets of the population not earlier covered thereby giving increasing tempo to the programme. Cooperation from all Governmental, non-Governmental and voluntary agencies is being secured to prepare a climate favourable for the acceptance of vaccination in the hard core of the population, a section of which still believes in superstitions and age-old dogmas and are not receptive to vaccination.

Ultimate Goal

The ultimate goal of eradication of the disease can only be reached when for three years in succession after successful completion of the attack phase, no indigenous case of smallpox is reported and on occurrence of an imported case, there is an effective machinery for mass vaccination of contacts of cases (both inner and outer ring contacts).

As the only source of virus responsible for the disease is man and vaccination provides good pro-

tection for a number of years, eradication of smallpox is well within the campus of modern preventive medicine and affords challenge to all medical men and auxiliary personnel not only engaged in the preventive field but also those engaged in the curative field of modern medicine.

International Assistance

The Government of the USSR is assisting us with the free supply of 450 million doses of freeze-dried vaccine, out of which nearly 350 million doses have already arrived and the balance will be received in instalments of 10-11 million doses per month. We have also received nearly seven million doses of freeze-dried vaccine through World Health Organization from the Governments of the United Kingdom, Switzerland and the Netherlands.

WHO and UNICEF are assisting us in the manufacture of freeze-dried smallpox vaccine, both by training our personnel and with the supply of the latest type of equipment at all the four institutes. For storage of vaccine, deep freeze cabinets, and for propaganda and publicity, megamikes have been supplied by UNICEF.

USAID assistance, amounting to Rs 10 million was received in 1962-63, and further assistance totaling Rs 77.4 million has been made available under P.L. 480 Funds for this programme during 1964-65.

More Smallpox Cases in 1963

The International Quarantine Committee of the World Health Organization (WHO) meeting held from 10 to 14 February, 1964 in Geneva learned that, according to report received by WHO in 1963 there were more cases and more deaths than in 1962 from three of the major quarantinable diseases, smallpox, cholera and yellow fever. Cases and deaths from plague, however, were only one-half the 1962 figures.

WHO learned that from 1 January to 29 November 1963, 88,442 cases of smallpox occurred in the world with 25,544 deaths, of which the large majority was in Asia. For the whole of 1962 the totals were 73,728 cases and 14,737 deaths. In Europe four cases were imported during 1963 and 141 secondary cases and 11 deaths occurred.

The Quarantine Committee devoted much effort to an attempt to improve the International Certificate of Vaccination against smallpox as a measure to help prevent cases from being imported from endemic areas into smallpox-free countries. However it was realized that the main effort in preventing smallpox would have to be made by public health authorities in the countries where the smallpox cases originate.

—WHO Press Release

SMALLPOX ERADICATION PROGRAMME

ENTERING MAINTENANCE PHASE

Dr G.P. Chakravarti

THE question, when can we enter into the "Maintenance Phase", assumes immediate importance when the attack phase is completed, either in the whole or in a part, of different States depending on their size and population. Entry into the maintenance phase arises only after the eradication of smallpox has been achieved.

There are certain criteria by which we can know whether the goal of eradication has been achieved. According to the criteria laid down by WHO Expert Committee Report on Smallpox, the term "Smallpox Eradication" implies the elimination of the disease on a world-wide basis. The Report also says that it can as well be applied to the elimination of the disease from a continent or large regional areas, but it is not applicable to individual countries, especially if they are contiguous with countries, where the disease is endemic. For such countries the term "National Smallpox Control" should be used. The Committee further observed that successful 'control programme' shall be said to have been achieved in a country if no indigenous case has occurred for three years in succession and if such local outbreaks as may occur from imported cases have been rapidly controlled.

In view of the above, it is difficult to say that we have even achieved a successful control programme not to speak of eradication, which according to the Expert Committee's criteria cannot be applied to a single country but must include all countries in a region. After a hurried mass campaign within a limited period in this vast country, it is extremely difficult to vouchsafe an achievement of effective control programme, as envisaged in the aforesaid criteria. By this, it is, however, not meant that such

a mass scale immunization against smallpox has not shown any results. There is no doubt a striking reduction in the number of smallpox cases and deaths in the country, as is evident from the following figures:

<i>Year</i>	<i>Cases</i>	<i>Deaths</i>
November 1950-May 1951	2,24,510	57,305
November 1957-May 1958	1,41,920	37,488
November 1963-May 1964	26,077	7,124

The above reduction in the incidence and deaths of smallpox is certainly due to mass vaccination of nearly 256 million people in different States and Union Territories. Therefore, the achievement at present can be said to be limited only to the reduction of the disease incidence and thus it may be premature for the nation to declare that the goal of eradication has been reached.

Effective Coverage

Furthermore, from the results of evaluation of the programme so far conducted, it has been found that the reported "mechanical" or "over-all coverage" does not mean the "effective coverage" or conferring biological protection against this disease to that extent. There can be several fallacies with regard to the successful vaccination operations performed under this programme. Some of these are: loss of potency of vaccine under field conditions; faulty technique practised by some temporary workers employed under this scheme after a brief training; washing away of the site of vaccination by the people due to ignorance and for fear of reaction and wrong entries and incorrect reading of results. In addition, rapid mass campaign does not permit comprehensive and uniform coverage at village and family level,

which is so essential to achieve affective coverage of 100 per cent population for eradicating smallpox. Thus pockets of susceptible population in a block, district and State are bound to be left out unless further efforts are made within a reasonable period to remove such deficiencies. All these have to be taken into account before arriving at the conclusions of our real achievements.

In this context, it is worth while to recall the experiences of the Pilot Projects conducted in 1960-61. Although in some of the pilot projects a coverage of more than 80 per cent was achieved, yet there was recurrence of smallpox outbreaks. Evidently, the reason being that the coverage in these districts was not effective and without giving an opportunity of removing deficiencies of attack phase and then stabilizing the immunity level so attained, immediate entry into the maintenance phase was made. Such an experience brings out the imperative need of checking, rechecking and cross-checking of the achievements by direct and indirect methods before taking a decision to enter into the maintenance phase. Since the Pilot Projects were meant to show us the right way, the experiences gained therein should be made use of in the nation-wide programme.

Conditions in India

Sometimes we are tempted to apply the experiences of other countries to our programme. It may be possible that in certain small countries eradication of smallpox has been achieved by one round of mass campaign and thus they could afford to enter into the maintenance phase straightaway. But have we considered the conditions prevailing in such countries with regard to its population, density, level of education, awareness of the people towards the consequences of this disease and thus their keenness for vaccination and the quantum of infection? If we do so, we will find that the experiences of such countries cannot possibly be applied in full for a large country like ours with over 430 million population and where there is low level of education with prejudices and beliefs against acceptance of vaccination. Heavy quantum of infection also matters a lot as it necessitates building up of a higher level of immunity to interrupt smallpox transmission. For instance, the original thinking at the outset of this programme in India was that before transmission of this disease can be interrupted successfully immunity

must be obtained over 80 to 85 per cent of the population. This was based on the experiences of several other countries which had shown that wherever a minimum of 80 per cent coverage has been achieved in all areas with a potent vaccine, there has been interruption of transmission. But such an experience of other countries did not apply to the Indian conditions as will be evident from the following extracts of the Report of the Committee constituted by the Government of India in 1963 to independently assess and evaluate the Smallpox Eradication Programme in the Union Territory of Delhi. The Report says:

“In view of the continued occurrence of smallpox cases even after the overall immunity level has been 84 per cent in the Union Territory of Delhi and also in view of the high endemicity of smallpox in the country, this committee feels that the

Dr K.M. Lal, Deputy Director General of Health Services (Smallpox), supervising a vaccination campaign in the field



standard of 80 per cent level of herd immunity even if uniformly distributed in all the sectors may not be sufficient to prevent the continuance and transmission in the community. If the eradication has to be reached, the aim should be to reach 100 per cent level."

Consolidation Phase

The above points amply justify to have an intervening phase, which may be called "Surveillance"

also to pass surveillance or consolidation phases before taking up its maintenance programme. During the consolidation phase under this programme, the immunity level attained in the attack phase has to be raised further by covering the left-overs in deficient pockets, 100 per cent vaccinations of all new-borns and also that of the immigrants. Besides this, a strict vigilance has to be kept for any smallpox outbreaks and to take all measures to cordon off the disease. In this manner after three years of vigilance



A mother is happy that she is protecting her child against smallpox by vaccination

or "Consolidation" phase, between the attack and the maintenance phases, in order to put the eradication programme on more scientific lines. In fact, it should have been included in its Master Plan as was done in the case of Malaria Eradication which had

in the covered areas, if no indigenous smallpox cases occur, the criteria of eradication shall be deemed to have been achieved and the districts can only then be declared to pass into the maintenance phase.

(Continued on page 315)

HEALTH EDUCATION FOR MASS VACCINATION

—A REVIEW OF PALANI PROGRAMME

PALANI Municipality, an important pilgrim centre, lies in Palani Taluk of Madurai District in Madras State. It has a population of 39,500 according to 1961 census. A number of pilgrims from Kerala and other districts of Madras State visit Palani almost every day, in addition to the vast congregations that gather for the six major festivals spread over the year. Smallpox cases occur almost every year and it was, therefore, thought desirable to protect the entire resident population of Palani as part of the National Smallpox Eradication Programme. Normally, Palani Municipality would have been taken up for vaccination under the smallpox eradication programme after April 1964, when the team of vaccinators working in the Madurai South Development district switch over to the North Development district. But it

was decided to take up Palani Municipality earlier as it was thought that the programme operation would also provide opportunities for the students of the Sanitation Faculty at Gandhigram in getting trained in the methodology of carrying out similar mass campaigns especially in organizing the educational component of the programme.

The mass vaccination campaign was organized in the Palani Municipality during the period 14 to 24 December, 1963.

Objectives

The main objective of the programme was to organize a mass vaccination programme in the Municipal area to get a high percentage of coverage in a short period by mobilizing all the available staff. The Programme had also other limited objectives in (1) working out a methodology of operation for small urban areas, (2) evolve and carry out an effective educational programme for such a mass campaign, (3) assess the effectiveness of such a campaign, and (4) identify the groups through which educational campaigns could be organized.

The campaign was also to be utilized to train the 32 students of the Sanitation Faculty, Gandhigram in the methodology of organization and education. The students had their preliminary training in the technique of vaccination, before they were introduced to the Municipal area. Each one of them had carried out over 100 vaccinations during the preliminary training period itself.

It has been the experience in India that cooperation of the people for the smallpox eradication programme was not forthcoming in an abundant measure. At many places, especially in urban areas, resistance to vaccination was encountered due to indifference and at other places due to ignorance and wrong beliefs. All this has indicated the need to intensify health education measures through all possible means in such mass campaigns and assess their effectiveness.

Agencies Involved

The programme was launched as a joint venture of four different agencies. The District Health Officer, Madurai, was the prime mover in the programme and leader of the organizational

group. The staff and students of the Sanitation Faculty, an institution for training health inspectors and the staff of the Pilot Health Project, another institution working on the action-research programmes in involving a methodology of work for public health programmes and the public health staff of the Municipality worked with the District health staff in organizing and implementing the programme. The four agencies worked as a well-knit team in the programme, organization and execution.

Operation of the Programme

The strategy adopted was to employ large number of vaccinators and cover the population in a short time. Each vaccinator was given 1000 population for enumeration, education and vaccination. The organization of a mass educational programme formed an important part of the campaign and all organized groups like the teachers group, religious institutions, government officers, professional groups, *matharasangham*, etc., were involved in the educational work. Family education was carried out along with enumeration. In addition a number of small group meetings were held. The percentage of coverage is 80.8. There were continuous requests from the population for attention to reaction cases and the supervisory staff and vaccinators spared no efforts in seeing the reaction cases and distributing A.P.C. tablets and boric-zinc powder. The Municipal Chairman and Councillors, the Commissioner and the Public Health Staff extended full support and cooperation in organizing and executing every aspect of the programme, and this more than any thing else contributed to the success of the programme. The method can be tried in other municipal areas with suitable variations.

Pre-planning

The campaign was carefully planned and was conducted in an organized manner. In the pre-planning stage the Municipal authorities were involved. The programme was planned with the help of the Chairman of the Palani Municipal Council, Commissioner and other health staff. The local people were involved in fixing the dates to suit their convenience as it was thought this procedure would help in enlisting their support and cooperation for the programme.

The programme was organized as a one-shot process. It was decided to cover the entire popula-

tion of the Municipality within a period of eight to nine days. Each vaccinator was given a population of approximately 1000 covering 200 households. There was a total of nine Health Inspectors to supervise the work of 41 vaccinators. There was no difficulty in finding the equipment and materials available with all the four agencies.

Programme Implementation

The Programme started with the special meeting of the Municipal Council convened on 10 December, 1963. The staff of the Sanitation Faculty, Pilot Health Project and the District Health Officer attended the meeting. The question raised by the Councillors were answered and their help was sought to make the programme successful.

The areas for vaccination were allotted to the 41 vaccinators who were to work simultaneously. The timings of vaccination were also fixed. The vaccinators were given instructions and were specially asked to spend a few minutes in each house explaining the need for vaccination as a preventive to smallpox.

Enumeration and Education

Three days were allotted to complete enumeration of households and to carry out the education campaign. The working hours varied between vaccinations depending on the locality. The vaccinations were carried out in two sessions—one in the morning and the other late in the evening.

The information session with the Municipal Councillors and detailed talks with the Sanitary Inspectors had given an idea of the major task to be faced in the educational campaigns so that the misunderstandings and doubts in the minds of the people might be removed.

Regular meetings of all the supervisory staff were held once-a-day. During these meetings, the up-to-date progress was discussed and difficulties experienced were solved. The resistant cases were contacted and persuaded to get themselves vaccinated. The concurrent educational programmes organized and conducted during the progress of the vaccination work especially directed towards the resistant groups seem to yield valuable results in the success of the total Programme.

The experience arising out of the operation of the mass vaccination programme could be broadly discussed under (1) Methodology of operation and (2) Educational.

Methodology of Operation

The methodology adopted in Palani was to organize an intensive programme and execute it over a short period of time. Vaccination is a one-shot process and once a person has been motivated to accept it, it is better to avoid any time-lag before vaccinating him. The use of a potent lymph will produce reaction among the non-immune groups which might keep some out of work for one or two days. There is a possibility that this might deter some of those initial acceptors to keep away from getting vaccinated. This might also hamper further educational activity, in the sense that educational work will become more difficult since the immediate effect in terms of loss of wages and forced absence from work become more perceptible in the people's eyes than the distant objective of not getting smallpox. It is true that this may apply only to a small percentage of the population but in a mass vaccination programme where we are attempting at a high percentage of coverage, even this minority is important. Moreover this group might possibly happen to be the one which might have resisted vaccination over a period of time on account of fear of reaction, etc. When once this group accepts vaccination due to the pressure of social forces generated by an affective educational approach they should be vaccinated without any time-lag.

The methodology now adopted in Palani area is not without precedence. The National Smallpox Eradication Programme of the Madras State adopts the same methodology of work for villages. Here too a group of vaccinators move to a village and complete the work there in a week's time before moving to another village. The B.C.G. organization had also adopted similar method.

The adoption of such method of work has advantages from the point of view of economical utilization of personnel and their time for educational work.

The National Smallpox Eradication Programme does not employ trained health educators and depends upon the existing staff for the educational component

of their programme. It is difficult to expect the existing public health staff in a Municipal area to carry on the educational aspects of smallpox programme over a period of months. In a crash programme like this, all the staff could concentrate their full energies over a short period of time for the educational and organizational aspects of the programme. During this period they will attend to other unavoidable item of work only.

A problem to be faced in this connection is the mobilization of large number of vaccinators for such short periods. There are only a few towns or municipalities with a population of over a lakh. An ordinary district employs even now 70-100 vaccinators under the eradication programme and the entire group might be mobilized for shorter periods for urban areas, before their dispersal in the rural areas. About 100 vaccinators might cover a lakh population in about ten days, while the same number could cover three lakh population in a month's time.

Educational Programme

In the educational methodology the main stress was to build up public support for the programme through group contacts. Only those educational techniques which could be easily reproduced in a mass programme like this by ordinary workers were tried.

The main principle on which the whole educational programme was based was the involvement of the leaders in all stages of programme planning and execution. The Municipal Chairman, Councillors and the Commissioner participated right from the beginning in all aspects of decision making. The dates were fixed according to their convenience, the programme was tailored to suit people's needs, and even the time of vaccination was fixed in consultation with the councillors.

The leaders had a say even in the choice of the educational methods to be used. For example even though we suggested group meetings in some cases, ultimately 'family contacts' were made in place of group meetings and the leaders took full responsibility in making these contacts.

This had a snow-ball effect and resulted in the involvement of many more leaders and people than

what we could have achieved through restricted group meetings.

There was a lot of initial resistance to the use of Russian vaccine. Some people thought that the programme itself may not succeed if dry lymph was used. Hence in the educational strategy great emphasis was laid on the advantages of using Russian vaccine and people were told that development of some reaction is good, as that alone would mean the conferring of full immunity to the non-immune or partially immune groups. After getting correct information, the leaders themselves in turn, told people that immunity against smallpox, is not conferred unless there is a successful reaction. The experience leads us to the fact that in an educational approach for such programmes, it is more conducive to explain to the people the facts and then take them into your confidence.

Another educational point which contributed to the success of the programme was the adjustments made, based on requests by the people. For example adjustments like vaccinating the members of some large families in two batches, vaccinating the school children who had to write examinations towards the end, vaccinating half of the hotel employees alone in the first attempt, etc., helped in making the people accept the programme unreservedly. In fact in some of the group meetings especially in mosques, the leaders were encouraged to come out with suggestions for tailoring the programme to their needs, without at the same time sacrificing any of the programme objectives.

The simultaneous enumeration and education has also contributed to the success of the programme.

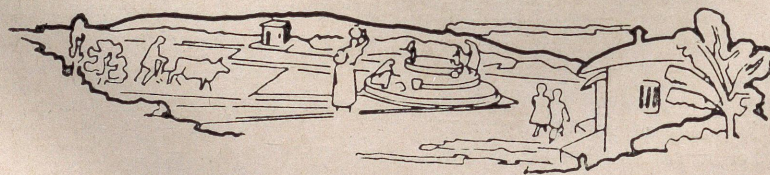
This gave an opportunity for each family to discuss the programme with the person who is going to vaccinate them.

The experiences have also clearly brought out that the health inspectors could undertake responsibility and carry out the major educational component of the programme by themselves. The health educator was mainly helping the programme personnel in carrying out the educational work by giving them guidance and support.

The vaccinators and supervisory health inspectors carried out most of the educational work in this programme at the family level, at small group meetings and in schools, while the District Health Officer and others concentrated their efforts at Institutional levels, in contacting important leaders and building up public support.

The main findings of the experiences at Palani in running a Smallpox Eradication Programme are : (1) Organizing an intensive programme of work over a short period of time (preferably a week) is an effective procedure in obtaining good response from the public; (2) Educational process should precede and also form part of the programme. Identification of all formal and informal groups and obtaining their support, to the programme is a necessary element for the success of the campaign. This should be taken up by senior health personnel while individual house to house education could be done by vaccinators at the time of enumeration; (3) Concurrent educational programmes, especially directed to resistant group should be organized and form part of the campaign ; and (4) Arrangements for follow-up and treatment of reaction cases seems to enhance the public support of the programme.

—Excerpts from the joint report by the District Health Officer, Madurai, Municipal Staff, Palani and the Staff of the Pilot Health Project and Sanitation Faculty of Gandhigram.



XVII MEETING OF THE W.H.O. REGIONAL COMMITTEE FOR SOUTH-EAST ASIA

THE Seventeenth session of the WHO Regional Committee for South-East Asia was held in World Health House, New Delhi, from 22 September to 28 September.

During the one-week session the Committee endorsed WHO's 1966 programme and budget for South-East Asia and approved the report on WHO's work in the Region during the past year.

The session, inaugurated by the Vice-President of India, Dr Zakir Husain, was attended by representatives from Afghanistan, Burma, Ceylon, India, Indonesia, Mongolia, Nepal and Thailand.

Dr V.T.H. Gunaratne, Director of Health Services, Ceylon, was elected chairman of the Committee and Dr Dineshanand Baidya, Director of Health Services, Nepal, vice-chairman.

INAUGURAL ADDRESS

Dr Zakir Husain, in his inaugural address, said that in the field of health the World Health Organization has done a great deal to find solutions to the problem of a more equitable distribution of the resources of the world.

Dr Husain said that improvement of the health of the people was essential to all development. "We complain sometimes that our agricultural and industrial outputs are much lower than expected," the Vice-President said. "The cause of it is lower vitality, lower efficiency. All those who are engaged in development planning cannot, therefore, afford to lose sight of investment in health, for it pays dividends both in greater well-being of man, which is the ultimate aim of all development, and in greater vitality and efficiency which are indispensable qualities of

human resources in creating a reasonable standard of living for all."

Educating the People

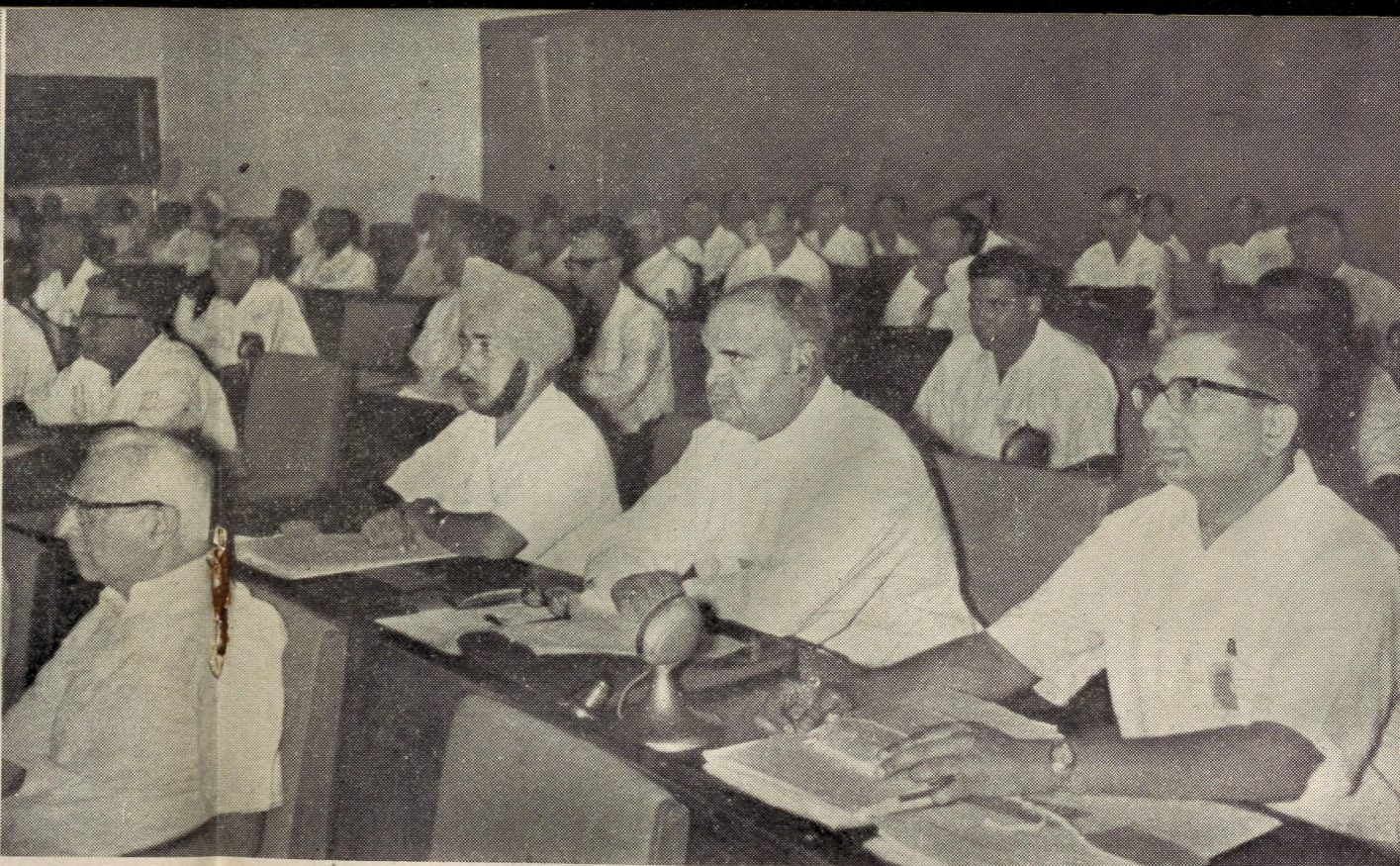
The Vice-President made a strong plea for high standards in medical education for an expansion of health education work and for a slower growth of population.

Referring to the urgent need for health education of the people, Dr Husain stated that "an increase of population at a slower and more dignified pace" could not be achieved through legislation but only through education. "Then we have the problem of nutrition," Dr Husain added. "We are a poor people and our nutrition resources are limited. We should not with impunity add folly to poverty, and this is what we mostly do. Even people who can pay for the best food are not always the best fed, and many of our countrymen are engaged in the dismal occupation of digging their grave with their teeth. We have to eat healthfully in order to live healthfully. This cannot be accomplished through legislation but is a matter of knowing what to eat."

HEALTH MINISTER'S ADDRESS

Dr Sushila Nayar, Union Minister of Health, referred in her speech to the progress which had been made in South-East Asia in malaria and smallpox eradication. Out of a population of 626 million exposed to malaria in South-East Asia, nearly 583 million were now protected, Dr Nayar said, and India was forging ahead with the largest national smallpox eradication programme in the world. At present 155 eradication units were at work, and 62.6 per cent of the population of India, or 273 million people had already been vaccinated.

(Continued on page 314)



Dr Sushila Nayar, Union Health Minister, inaugurated the Conference in New Delhi

FIRST ZONAL SMALLPOX WORKERS' CONFERENCE

THE First Zonal Smallpox Workers' Conference, held in New Delhi between 11 to 13 September, 1964, urged the need for the enactment of a comprehensive Central Legislation to make primary vaccination and re-vaccination every three years compulsory. The Conference felt that the existing legal provisions are inadequate. Pending the enactment of such a comprehensive legislation, the Conference considered that production of a vaccination certificate should be made an essential condition to secure admissions to schools and colleges.

The Zonal Conference comprised delegates from the States of Punjab, Rajasthan, U.P., the Centrally-administered areas of Delhi and Himachal Pradesh.

Observers from various other States also attended the Conference.

HEALTH MINISTER'S ADDRESS

Inaugurating the Conference, Dr Sushila Nayar, Union Health Minister, said, "If we want our country to be free from the scourge of smallpox, continuous vigilance by the health authorities in every State at all levels is essential."

She said the success of the National Smallpox Eradication Programme could be vouchsafed only if there was complete disappearance of the disease from the country. This could be possible only when, after initial vaccination of the whole population, 100 per cent vaccination of the newborns was assured and all the school-going children were re-vaccinated.

Dr Nayar added that eradication of the disease could definitely be achieved if there were no case,

(locally) for three successive years and all the imported cases were promptly isolated and contacts re-vaccinated. No doubt the prevention of indigenous cases was important but to make the programme a complete success, effective measures were to be taken to deal with all cases.

The Health Minister said that the Conference was called to critically review the progress of the National Smallpox Eradication Programme in the States falling in Zone I, viz., Delhi, Uttar Pradesh, Himachal Pradesh, Rajasthan, Punjab and Jammu & Kashmir.

She emphasized the importance of examining the causes and lacunae that were hindering the progress of the programme. There must be certain factors

responsible for the occurrence of cases of smallpox even after 80-90 per cent coverage of the population. Thus the Conference would have to grapple with the administrative and organizational bottlenecks and difficulties in the implementation of the different phases of the programme for achieving the revised target of 100 per cent coverage of the population.

The Health Minister cited the case of Delhi where the overall coverage was reported to be more than 100 per cent, but still smallpox cases had been reported. It meant that certain sections of the people had been left out while the others had been re-vaccinated bringing the figure higher than 100 per cent. Moreover, it was essential to keep in view the increase in population to examine the results rather than basing the conclusion on the 1961 census. In India

every year 10 million people are added to its population.

On reviewing the progress of the programme, she stated that 273 million vaccinations have been performed, *i.e.*, nearly 62.6 per cent of the population has been covered.

She praised the achievements of Punjab in the participating States where nearly 95 per cent coverage had been done. The National Smallpox Eradication Programme was showing quite good results. The incidence of the disease had come down in the current year of periodic cyclicity as compared to the previous periodic cyclicity year 1950-51 and 1957-58 except in the State of Bihar. Its poor vaccination performance was a serious concern for all. But there was no room for complacency for other States, Dr Nayar said.

Health Education

The Health Minister added that one of the major problems now faced was the hard core of population that had not been vaccinated. That section of the population posed a challenge to the health authorities and certain sections of the population in this core have age-old prejudices against vaccination. She emphasized the role of intensive health education to break such resistance and make them aware of the paramount need for vaccination.

Dr Nayar added that the smallpox worker should take a serious note of even a single case of smallpox occurring in the already covered areas. "If a case does occur, immediate epidemiological investigation has to be carried out, and intensive vaccination carried out to cordon it off. If the case is imported one, the information should be sent to the local and State health authorities from where the patient came so that they undertake vaccination of inner and outer ring of contacts and infection is controlled within the shortest possible time." She added that arrangements must be made to deal with the floating population.

Dr Nayar said that it was a matter of great concern if the cases occurred in the pilot project areas. It meant either the vaccination was not done properly or the technique was faulty.

Freeze-dried Vaccine

Referring to the production of freeze-dried vaccine in the country, the Health Minister stated that the State Vaccine Institute, Patwadangar and King's Institute, Guindy, had gone through the preparatory phase and are expected to manufacture annually 20 to 25 million doses of freeze-dried vaccine, but Vaccine Institutes at Belgaum and Hyderabad had still to produce trial batches conforming to accepted standards before they went in for mass production.

Dr Nayar thanked the World Health Organization and UNICEF for the assistance that they have given in the training of the staff of the four Vaccine Institutes and for the equipment supplied by them. She also thanked the Government of the USSR for their gift of 450 million doses of freeze-dried vaccine for the attack phase of the programme.

She recommended the linear scratch or multiple pressure method of vaccination instead of rotary lancet method. But this could be done gradually as a change at this stage of eradication was not practical. But at least new workers should be trained in the new method.

Dr M.S. Chadha, Director General of Health Services, extended a cordial welcome to all the participants on behalf of the Union Ministry of Health.

Such meetings provided personal contacts and exchange of experience which were necessary for effective implementation of the national programme. With unabated vigour and dedicated service, he was sure that the time was not far off when smallpox could be eradicated from our country.

Dr C. Mani, Regional Director, South-East Asia Region of the WHO, New Delhi, in his address said that in the public health picture of the country today, there were two prominent features. One was the excessive amount of sickness and the other was the shortage of resources to meet the total public health needs of the country. It was essential, he said, that this excessive load of sickness should be brought within reasonable bounds.

Malaria was the largest single disease in the communicable disease group. But, with the national

malaria eradication programme in full force, the final eradication of this disease was becoming a near reality. There were other diseases like tuberculosis and leprosy which did not lend themselves to quick action. But there was effective vaccination against smallpox. The importance of this disease, he said, was seen in the extraordinary crippling and blindness that it caused besides the problem of exporting smallpox cases to other countries. All these issues could be solved by the concerted national drive of smallpox eradication already undertaken by the Government of India. What was required at the moment, he said, was the review of the results of the campaign, which has been launched energetically, to find out the lacunae and exercise stricter vigilance, seek greater public cooperation and show leadership.

Dr E.P. Campbell (USAID) hailed the Conference as a significant one, wherein techniques and machinery of administration involved in the implementation of the programme could be reviewed. He, however, was of the opinion that the programme would not be successful unless due responsibility was vested in the hands of local health authorities at appropriate levels. The programme could not be implemented in isolation of other health services of the country.

Dr Tatachenko of the UNICEF, said that the UNICEF was assisting in setting up plants for production of freeze-dried vaccine. He expressed the hope that sufficient quantity of freeze-dried vaccine would be produced in the country by the time the stocks received as donation were used up.

Dr K.M. Lal, Deputy Director General of Health Services (Smallpox), proposed a vote of thanks.

Achievements

The achievements in the implementation of the National Smallpox Eradication Programme in the States were discussed in the plenary session. Dr K.M. Lal presided.

Dr Lal said that the session was confined only to review the achievements of the programme so far. He clarified the claim of more than 100 per cent coverage in Delhi State. He said that the State had not covered 100 per cent of population. The

coverage in the States varied, he said, between 80 and 89 per cent in the different sections of the population of Delhi. But all the sections were not covered. He said that at the time of Independent Assessment and Evaluation it was 63 per cent. Now it was 80 per cent for all the sections of population in Delhi and more for certain sections.

Dr Lal added that the occurrence of cases even after this high percentage of coverage shows that the target of 80 per cent coverage laid down by the WHO does not hold good. Though Delhi had higher percentage of coverage, yet 24 indigenous cases were reported so far this year.

He referred to the problem posed by the floating population like domestic servants, building labourers and other migratory population and said that they must be effectively vaccinated before one could speak of 100 per cent coverage.

After Dr Lal's introductory remarks representatives of the participating States reported the progress of the scheme.

The points that were brought out included the need for consolidation of the achievements in the attack phase before entering the maintenance phase; the need for timely financial sanction to effect the programme; importance of proper reporting of cases; concerted steps to be taken to vaccinate the vulnerable groups.

Basic Health Worker

The role of a Basic Health Worker in the different health programmes was discussed at the plenary meeting on 12 September. The guest speakers were Col. B.L. Raina, Director, Family Planning, and Dr A.P. Ray, Director, National Malaria Eradication Programme.

Col. Raina spoke on the role of the basic multi-purpose health worker and his responsibility in smallpox eradication maintenance phase. Dr Ray explained the functions of surveillance worker in Malaria and the part he could play in the Smallpox Eradication and Family Planning Programmes when Malaria Programme entered the maintenance phase.

The afternoon plenary session on 12 September discussed present smallpox incidence in covered and uncovered areas. Dr K.C. Patnaik, Assistant

Director General (Epidemiology) presided. There had been a crystalization of thought and consolidation of achievement in the programme of smallpox eradication. He said that although smallpox was on the retreat in India, it still had its foothold in what was called, "endemic foci." This was a problem confronting not only India but the whole world.

If we implemented the eradication programme with perseverance India would be able to eradicate smallpox in spite of many odds.

The community, Dr Patnaik said, should not be neglected. Public opinion had to be mobilized and local leadership utilized.

Representatives from the States spoke about the incidence of the disease in their States. During the discussion, the need for intensive health education programme and a uniform legislative measure for vaccination was emphasized.

Closing Session

Dr M.S. Chadha, Director General of Health Services, in his address to the closing session, said that he was happy that the Conference had gone into great details about improving the methodology of the activities, the difficulties confronted and measures to deal with these obstacles. He urged that the smallpox workers should be devoted to the cause of eradicating the disease.

Dr Chadha appealed to the officials to be sympathetic to the people working under them as their disposition, their quality, their integrity and devotion to duty were important for success.

Determination was a pre-requisite to solve any problem, he said, adding that the smallpox workers should work with determination to ensure success.

Dr Chadha welcomed some of the recommendations of the Conference.

Resolutions

Following are some of the important recommendations :

For intensive health education which is so essential for this national scheme, one publicity van equipped with cinema unit and public address equipment

for each eradication unit which should be manned by a trained Health Educator and Cinema Operator and other ancillary staff be provided.

Staffing Pattern

The representatives of Rajasthan, Tripura and some other States said that staffing pattern prescribed by the Government of India was not being adhered to in their States. To bring uniformity, the Government of India may persuade such State Governments to adopt the approved pattern of staff for National Smallpox Eradication units.

Since there is also a need for augmentation of staff at the State headquarters and the regional level, there should also be a post of Deputy Director in addition to Assistant Director (NSEP) besides the post of Deputy Assistant Director (Smallpox) wherever one is not provided at present.

The Conference reiterated the recommendations of the last Smallpox Workers' Conference regarding (i) the payment of an allowance of 25 per cent of their basic pay to medical and auxiliary staff for the arduous nature of their duties; (ii) leave reserve at the rate of 10 per cent in cadres of vaccinators and inspectors of vaccinations is essential during the attack phase of the programme.

In order that the field staff take interest in the programme, there should be some assurance regarding the security and tenure of the services even after the scheme is completed, but only in those cases where services have been satisfactory.

In view of the fact that in an Eradication Campaign, checking of re-vaccination is as important as checking of primary vaccination, it is recommended that there should be one Smallpox Inspector over two vaccinators and he should be made responsible for checking 100 per cent primary vaccinations and 100 per cent re-vaccinations. The Smallpox Medical Officer should also check at least 10 per cent of both primary vaccinations and re-vaccinations.

Central Legislation

Comprehensive Central Legislation is necessary for the following as the existing legal provisions are not adequate:

- (a) Primary vaccination for a child above three months should be made compulsory.

- (b) Re-vaccinations every three years after a primary successful vaccination be made compulsory.

Pending enactment of the proposed legal provisions, no admissions in schools or colleges should be allowed unless one possesses a certificate of vaccination.

The Conference also considered the problem of dual control not only in respect of National Smallpox Eradication staff but also that of Public Health staff in general which exists at present in practically all the States. This impedes successful implementation of any Public Health work including the National Programmes. Immediate steps are therefore indicated to bring the Public Health staff under the direct control of the District Medical Officer of Health, Municipal Medical Officer of Health or Corporation Health Officer.

It is recommended that vaccine may be supplied by air. Where air services do not exist, State Governments should take delivery of vaccine at Delhi through special messengers so that the time wasted in despatch of vaccine by train may be eliminated.

In difficult hilly and desert areas, work should be concentrated in favourable seasons only, depending upon local conditions. In that case supply line can be properly and regularly maintained.

Provision for vaccinators in difficult areas should be one vaccinator for 5000 population.

In desert areas, where there is no communication, mobile vaccination teams should be constituted with vehicles as camels cannot be provided to the vaccinators.

Uniforms should be provided to the vaccination staff according to climatic conditions.

Arrangement of supplies in difficult areas may be on the same lines as that of Himachal Pradesh, *i.e.*, supplies calculated for two to three months are supplied. Freeze-dried vaccine is supplied monthly.

In difficult areas, there should be a provision of one Smallpox Inspector for a team of three vaccinators. He will be required to inspect 100 per cent inspection of primary vaccinations and 50 per cent of re-vaccinations.

Health Education Measures

For Health Education and Publicity work in difficult areas, the following steps are suggested:

- (i) A committee selected by the Panchayat may be made responsible for this work and given publicity material of this programme.
- (ii) Personal contacts to break through the hard core should be made by these committees after making a list of their names.
- (iii) Transistorized record player with long playing plastic record in local dialect may be supplied to all workers in the difficult areas since other media of health education are not practicable there.

There should be notification of all smallpox cases and vaccinators and all ancillary health staff should be reporting agencies. Such reports must be referred by the local health authorities.

To deal with the protection of labour population in difficult areas:

- (i) Forest authorities should give instructions to their contractors to get their men working in forest areas vaccinated.
- (ii) A condition should be incorporated in the tender notices of Forest and Public Workers Department that only vaccinated labour would be employed. To this effect, they should take a certificate from the local health authorities.

The Conference considered at length whether the load of work connected with mopping-up and maintenance phase operations under Smallpox Eradication Programme can be undertaken by the Basic Health Worker envisaged under Malaria Maintenance and Intensive Family Planning Scheme. After scrutiny of the functions of the worker it emerged that a Basic Health Worker with the duties assigned to him already, will only be able to give epidemic intelligence about a smallpox case during his house visits and start vaccination of newborns only at least six months after he is in position and even these duties will be in limited areas where malaria maintenance may be in operation. It will neither be possible for the Basic Health Worker to carry out mopping-up operations nor to meet the obligations of maintenance phase of the Smallpox Eradication Programme.

In order to achieve the revised target of 100 per cent effective coverage, mopping-up operations in the covered districts should continue up to the end of the Third Five Year Plan because these districts are coming into grip with hard core of population. In the districts from which eradication units have been withdrawn due to time schedule, the vaccination staff should be augmented immediately to conform to the pattern of one vaccinator for 15,000-20,000 in urban areas, one vaccinator for 10,000-15,000 in rural areas and one vaccinator for 5,000 in difficult areas like hilly, tribal, desert and sundarban areas. Supervisory staff at the rate of one smallpox inspector for a team of five to six vaccinators should also be provided in these districts.

The funds required for continuance of mopping-up operations during the Third Plan should be sanctioned outside the Plan ceiling as it may not be possible during the current year to include this item within the Plan ceiling.

Maintenance Phase

The question of entering into the maintenance phase will only arise after satisfactory mopping-up operations are completed and effective coverage of 100 per cent is achieved as may be determined by independent evaluation and assessment.

Inter-State Importation of Cases

Immediately on getting information about the importation of a case from other State, the local

health staff should ascertain the address, *viz.*, village, post office, *mohalla* or ward of a city (elicit as exact an information as is possible) and send that information by post card, specially prescribed for this purpose to the health authorities of the place from where the case has been imported.

On receiving such information, the district health authorities of the State from where the case was reported should immediately visit that village or *mohalla* in a city and carry out vaccination of intimate contacts and if possible even of remote contacts.

If information is received in quick succession about more than three or four cases from a particular village or hamlet or block, the entire population of that area has to be re-vaccinated.

While giving information, the authorities or the State where an imported case has been received, should also give details of the places if that patient may have halted in between and inform the concerned district health authorities of the intermediate places.

To achieve uniformity in the total information that is required to be conveyed to the health authorities of other States regarding imported case/cases, it is recommended that a *printed card* containing all the relevant information should be evolved and all the States addressed to get such cards printed and utilized for this purpose.

Standardizing Cholera Vaccine

ALL manufacturers of cholera vaccine, government as well as private, will, in future, receive their supplies of seed strain of the micro-organism used in its manufacture from the State-owned Central Research Institute at Kasauli. The Institute will subject the seed strain to elaborate tests before distributing it among the manufacturers. The manufacturing institutions will also test the seed strain according to the techniques agreed upon.

In order to test the potency and maintain the quality of the vaccine, suitable potency tests are to be carried out on animals. Collaborative studies are to be initiated for testing the quality of the vaccine at the Central Research Institute, Kasauli, Haffkine Institute, Bombay and Bengal Immunity, Calcutta. The Drug Controller of India has promised all assistance to the manufacturing institutions in the import of their chemicals and re-agents.

It was stated that the processes of manufacture should be uniform, as far as possible, so that standards can be laid down and maintained. It was agreed that any suitable process within the frame-work of Indian Pharmacopoeia may be adopted for the manufacture of cholera vaccine.



Health in Parliament

LOK SABHA

Family Planning Programme

The Union Health Minister, Dr Sushila Nayar, informed the Lok Sabha during question hour on 10 September, 1964 that the goal of family planning programme was to reduce the birth-rate in India to 25 per 1000 population as early as possible. This target was not proposed to be radically revised.

She said that the Plan provision of Rs 2697.87 lakhs had been made for family planning programme during the Third Five Year Plan period (including Rs 2000 lakhs at the Centre). The provision for the period April 1961 to June 1963 was Rs 618.5 lakhs at the Centre and Rs 181.91 lakhs in the States. The estimated expenditure for the same period was Rs 435.61 lakhs at the Centre and Rs 152.10 lakhs in the States. It would be seen that the utilization of funds was 70.4 per cent at the Centre and 83.6 per cent in the States.

The Family Planning Programme had since been re-organized with effect from 4 October, 1963 to achieve substantial progress in this field.

Under-Staffed Hospitals

The Health Minister told the House that it was true that many hospitals were under-staffed but they were not run by unqualified doctors.

There were hospitals manned by licentiate doctors, but latest figures were not available.

She added that more doctors were being trained. With the increased output of graduate doctors and the provision of suitable facilities and emoluments for doctors it was expected that the shortage would tend to disappear.

Gastro-enteritis Cases

Dr Nayar said on the same day that gastro-enteritis had taken the form of an epidemic in certain parts of the country but it had not become a regular feature.

She added that the number of deaths reported in Delhi, Uttar Pradesh, Manipur, Maharashtra, Rajasthan, Andhra Pradesh, Madhya Pradesh and Tripura, from January to August 1964 was 954 approximately.

Preventive measures taken by the States included early notification, anti-cholera inoculation, early treatment and segregation of cases. Improvement of sanitation, disinfection of excreta, anti-fly measures, proper disposal of refuse, etc., were adopted to some extent in areas where gastro-enteritis occurred. In addition, chlorination of drinking water, stocking of sufficient quantity of anti-cholera vaccine, disinfectants and sulphaguanidine, promulgation of Epidemic Diseases Act and special anti-epidemic measures were also undertaken.

Cancer Drug from Bamboo Grass

Dr Nayar informed the House that it had been reported that Dr Mutsuhiko Kuroki of the National Saitama Sanatorium, Japan, had been carrying on animal experiments with the component of bamboo grass extract for the past five years and it was recently found that there might be some possibility of anti-cancer substance in it. The said substance had been named 'Bamfolin'. It was stated that 'Bamfolin' had not yet been admitted as an approved medicine for the cure of cancer under the Pharmaceutical Affairs Law. The Government of India were watching further developments in this respect.

Methods of Family Planning

Dr Nayar laid on the Table of the House the following statement on 24 September regarding the family planning methods advised, adopted or practised:

The various methods advised at present for family planning in India are—(i) Contraceptives—mechanical and chemical, (ii) sterilization, (iii) methods requiring no devices (like coitus interruptus, abstinence and rhythm, (iv) intra-uterine device and oral contraceptives used in field-trials under controlled conditions under the auspices of the Indian Council of Medical Research.

On the basis of various surveys carried out in the country, it is estimated that preference for various methods mentioned are as follows:

(i) Contraceptives:	
Condom	65%
Jelly with applicator	13%
Foam Tablets	10%
Diaphragm and jelly	2%
(ii) Coitus interruptus, abstinence, rhythm, etc.	
	10%
(iii) Sterilization	
	0.03%

Contraceptives are given free in rural areas irrespective of income. In urban areas they are given free to those with income up to Rs 300 per month, at half rate to those with income above Rs 300 and up to Rs 500 per month and at full rates to those with income above Rs 500 per month. There are 10,981 Family Welfare Planning Centres including 9,254 in rural areas from where contraceptives are being distributed.

The chemical contraceptives are now produced in India. The manufacture of condoms has been started by one unit in Bombay (The Bombay Latex Dispensations Private Ltd., Bombay) and has been placed on approved list. Another unit in Madras (M/s London Rubber Industries India (P) Ltd.) is likely to go into production soon. The off-take of contraceptives since 1956 has increased considerably.

Sterilization

Family Planning Programme in India gives high priority to sterilization scheme. The following measures

have been taken by the Government of India to promote it:

- (i) Assistance for strengthening of the staff of teaching medical institutions for training of doctors in the techniques of sterilization operations.
- (ii) Assistance for strengthening of staff of hospitals up to Taluk level with ceiling of cost up to Rs 10,500.
- (iii) Provision for payment of Rs 100 per day as honorarium to surgeons for doing a minimum of 10 vasectomy operations per day in the sterilization camps arranged by the State Governments.
- (iv) Provision for payment of Rs 100 per day as honorarium to surgeons for doing a minimum of six salpingectomy operations per day. The period for which Rs 100 is given may extend to more than one day.
- (v) Provision for incurring expenditure on cost of drugs and dressings not readily available.
- (vi) Special casual leave of not exceeding six working days to Central Government employees only (both industrial and non-industrial) undergoing sterilization operations, and
- (vii) Free transport facilities to be provided by State Governments or actual cost of transport.

Some State Governments offer further financial assistance to persons undergoing sterilization operations to cover their expenditure on transport, loss of wages, etc., which varies from Rs 10 to Rs 30.

The Central Family Planning Board in their meeting held in Bombay on the 25th August, 1964 has recommended that the following assistance should also be given:

- (a) Rs 2 per day for five to six days to those who are not entitled to special leave on full pay like the self-employed poor persons who cannot afford to be absent from work as compensation for loss of wages.
- (b) Rs 5 per case for drug, dressing and food and another Rs 5 for transport etc. of the patient and the persons accompanying him.
- (c) 100 per cent assistance for beds in maternity hospitals for tubectomy cases.

These proposals are under consideration.

Two pilot studies on rhythm method were carried out during May 1952 to March 1955—one in Ramanagaram Centre, Mysore State, and another at Lodi Colony, New Delhi. The conclusions of these studies were as follows:

- (i) There was considerable readiness for adoption of family planning in both rural and urban areas;
- (ii) The rhythm method had a definite appeal to people in both the areas;
- (iii) When used regularly, the rhythm method seems to reduce the pregnancy rate by about one half; and
- (iv) The method has limitations, which seem to be mainly due to the inability of couples, especially in rural areas, to observe the safe period. Pamphlets on safe periods have been prepared and distributed.

Government Servants Suffering From T.B.

Dr Nayar said on the same day that 2509 cases of Tuberculosis were reported in respect of Central Government servants and members of their families covered by the Central Government Health Scheme during 1963. Separate figures for Central Government servants and their families are not maintained. Most of the Government servants and members of their families in Delhi are covered by the Central Government Health Scheme.

Regarding financial assistance for the persons suffering from T.B. she said that full facilities for investigations, specialist consultation and treatment (including hospitalization) are provided at government cost.

Board of Homoeopathic System of Medicine

Dr Nayar stated that "Under Section 31 of the Delhi Homoeopathic Act, 1956, the Board of Homoeopathic System of Medicine, Delhi, may grant recognition to any institution imparting instructions to students for preparing them for the qualifying examination if it is satisfied that the instructions imparted in such institutions come up to the standard required for such recognition."

"The Act does not prescribe any separate examination for registration of homoeopaths and as such

the question of holding such examination does not arise."

"The Board however sends the minutes of its meetings to the Delhi Administration. According to information available with the Government, the Board has registered 280 homoeopathic practitioners and has prepared a curriculum for the Diploma in Homoeopathic Science examination."

Ayurvedic and other Indigenous Drugs

The Health Minister stated in the House on the same day that the Central Council of Ayurvedic Research, in collaboration with the Indian Council of Medical Research, drew up a scheme to carry out research in indigenous drugs—pharmacognosical, clinical, chemical and pharmacological. The scheme envisages the setting up of ten circuits, each circuit comprising units for pharmacognosy, clinical screening, chemistry and pharmacology. Botany and pharmacognosy departments of different Universities, chemistry departments of some of the Universities and pharmacology departments of some of the medical colleges have been selected for carrying out investigations on indigenous drugs.

About 218 medicinal plants described in Ayurveda and/or employed by *Vaidyas* in their practice have been selected. Fifty-eight drugs out of this list have been selected for integrated research on a priority basis.

The amount sanctioned for this research work is Rs 1.50 lakhs for the current financial year and during the subsequent years, the scheme is estimated to cost about Rs 12 lakhs per year.

Water Supply Schemes for Kerala

The Health Minister stated in the Lok Sabha on 1 October, 1964 that a sum of Rs 407 lakhs for urban water supply schemes and Rs 50 lakhs for rural water supply schemes had been provided in the Third Five Year Plan of the Kerala State. For village water supply schemes, there was no provision in the State Plan but allotments were sanctioned for implementing the schemes yearly by utilizing Local Development funds.

The following expenditure had been incurred during the third year of the Third Five Year Plan on

urban and rural water supply schemes in Kerala:

Urban Water Supply Schemes Rs 87.64 lakhs

Rural Water Supply Schemes Rs 13.14 lakhs

Village Water Supply Schemes Rs 14.17 lakhs

The areas covered by the schemes already under execution were as follows :

Urban Water Supply Schemes—2 Corporations
(Trivandrum and Calicut).

1 Panchayat (Ottappalam).

12 Municipalities.

Rural Water Supply Schemes—93 villages.

Village Water Supply Schemes—91 villages.

Grants to T.B. Hospitals

Dr Nayar said in Lok Sabha on 1 October that there was no scheme of the Central Government for giving grants-in-aid to T.B. hospitals set up by State Governments. *Ad hoc* non-recurring grants for the purchase of equipment and for minor works were, however, sanctioned to voluntary medical institutions including T.B. hospitals and those which may have facilities for treating tuberculosis cases. These grants were paid on the recommendation of a committee set up by the Health Ministry. Proposals were considered as and when received through the State Governments. Grants were also sanctioned to certain voluntary T.B. institutions for their maintenance or for the reservation of beds for poor/displaced T.B. patients.

RAJYA SABHA

Cholera Deaths in Madras

Dr Sushila Nayar told the Rajya Sabha on 16 September that the Government of Madras had intimated the Health Ministry that there were 3664 deaths up to the week ending 15 August, 1964 due to cholera epidemic in the State.

Dengue Fever in Madras

Dr Nayar stated in the Rajya Sabha on 23 September, 1964 that there was an epidemic of a dengue-like illness in Madras city. Though there had been

The Government of India were giving grants-in-aid for the maintenance of the following two T.B. hospitals run by voluntary organizations :

- (i) Mehrauli T.B. Hospital, Delhi run by the Tuberculosis Association of India; and
- (ii) Children's ward in the Union Mission Tuberculosis Sanatorium, Madanapalle run by the Mission authorities.

The grants given to voluntary institutions including the two hospitals mentioned above during 1963-64 and 1964-65 (up to August 1964), were : Rs 12,96,482 and Rs 5,65,764 respectively. Proposals for giving grants during 1965-66 would be considered at the appropriate time.

No grants were paid to institutions run by State Governments or local bodies, the Health Minister said.

T.B. Centres

Dr Nayar informed the House on the same day that an amount of Rs 50 lakhs had been provided during the current financial year for supplying anti-T.B. drugs to T.B. Clinics/T.B. Demonstration and Training Centres in the States/Union Territories. There was in addition an amount of Rs 40,000 which has been sanctioned for supplying anti-T.B. drugs to displaced T.B. patients from Pakistan. No specific provision for supplying anti-T.B. drugs to displaced T.B. patients in Orissa had been made, but anti-T.B. drugs worth Rs 14,469,30 had so far been supplied to the T.B. clinics in Orissa for the treatment of T.B. patients.

a very large number of cases, no death had so far been reported from this disease.

She said the disease was caused by a virus known as chikungunya virus and was transmitted by *aedes aegypti* mosquitoes. The disease was generally associated with severe pain particularly in the joints. There was no specific treatment so far found for the disease.

A team of experts from the Virus Research Centre, Poona, visited several hospitals in Madras city and had isolated the virus associated with the disease and also identified it.

Around the states



ANDHRA PRADESH

THE State Health Museum organized various health education activities during August this year. A total of 30,391 persons visited the museum. Equal number of talks were given both on family planning and on general health subjects. Group discussions were held on national programmes for malaria, smallpox and family planning.

Six institutions visited the museum under its planned visits programme during the month. Eight cinema shows were conducted and 589 persons visited these shows.

MADRAS

Vaccination Against Polio

ONE hundred million doses of live polio virus vaccine (Sabin) will be produced at the Pasteur Institute, Coonoor.

The vaccine will be administered in two doses, orally, to all children aged six years and below. It is estimated that there are about 40 million children belonging to this age-group in the country. Extensive investigations carried out at the Institute have shown that these children are the most susceptible to polio infection.

Dr N. Veeraraghavan, Director of the Institute and Secretary of the Association of the Pasteur Institute of Southern India, reported that the construction of new Laboratories designed for the production of live polio virus vaccine and other vaccines had been completed and that the Central Government had made a grant of Rs. 13,71,670 for the purpose. Dr Albert Sabin, who was invited by the Government of India to visit the different laboratories in the country and select one for the production of the vaccine, had selected the Pasteur Institute, Coonoor, for the purpose and had made available his strains of virus.

In order to enable the Institute to meet the needs of the whole country the USAID had come forward with a gift of equipment worth five lakhs of rupees.

Immunization of Pre-school Children

THE Public Health Department of Madras has drawn up a scheme for the immunization of pre-school children against whooping cough, diphtheria and tetanus with Triple Vaccine. The Medical Officers of the Primary Health Centres would be the prime agencies to push through the Scheme. More than two lakh children are expected to be immunized during 1964-65.

A trial programme was conducted in Chingleput District with about 200 children to assess the relative merits and demerits of the Triple Vaccine manufactured by different institutes.

D.P.T. Immunization Programme on a smaller scale has been launched in the integrated children welfare demonstration project undertaken in the Poonamallee Block in 20 selected *Balvadi* centres. Vaccine for this project was obtained from commercial concerns.

Post-Graduate Course in Town Planning

A POST-GRADUATE course in country and town planning is to be started in the School of Architecture of the Madras University from this academic year.

First of its kind in the South, the course will have an annual in-take of 20 students and will be open to candidates from the Southern region. It will offer a two-year course to persons with a Bachelor's degree in Architecture or Civil Engineering. Candidates with M.Sc. or M.A. in Geography, Sociology and Economics may also be admitted, but they would have to undergo a pre-orientation course for a short period.

The All-India Council of Technical Education had sometime back agreed in principle on the need for starting a centre offering the above course in South India. The starting of the course at the School of Architecture has now been approved by the Union Ministry of Education.

MAHARASHTRA

Oral Polio Vaccine for Children

THE first oral vaccine (Sabin) dose was given to 92 children at Kolhapur by the Kolhapur Medical Association to mark the beginning of their campaign to immunize children against poliomyelitis. Other two doses were given at the interval of five weeks. This was the first time that oral vaccine was administered to children locally. The administration of oral vaccine has become a regular activity of the Medical Association.

After the initial successful campaign, five more batches—each consisting of 90 to 95 children—were given the polio vaccine.

The Association is running a Child Welfare Clinic since 1954. The members of the Association examine the poor and needy children, give free advice and treatment. The Association also gives powder milk to poor children.

Hamycin—A New Antibiotic

ANTIBIOTIC research at Hindustan Antibiotics Ltd. Pimpri, has yielded many fruitful results. Hamycin is one of the new antibiotic products discovered and clinically established at Pimpri.

Hamycin and its manufacturing process has now been granted a patent in the United Kingdom. Hamycin is a potent anti-fungal and anti-protozoal antibiotic obtained from broth cultures of *Streptomyces pimprina* isolated from Pimpri soil.

It is active against a large number of fungi particularly, *Candida albicans*, and the protozoan *Trichomonas vaginalis*. Unlike other polyenes, it is absorbed through the gastrointestinal tract giving effective blood levels and cure of deepmycosis (fungal diseases) of internal origin.

DELHI

V.B.T.S. Annual Day

THE Voluntary Blood Transfusion Service celebrated its anniversary on 21, August 1964 at Vigyan

Bhavan, New Delhi. Shrimati Indira Gandhi, Union Minister for Information and Broadcasting, presided. Shrimati Gandhi had inaugurated the Service on 16, August 1963.

Dr Sushila Nayar, Union Health Minister and seven others donated the blood after the celebrations. The Service has registered by now 1,300 donors and collected 800 units of blood.

In her address of welcome, Dr Nayar said that there was spurt of enthusiasm among the people to donate blood after the Chinese aggression in 1962, but unfortunately the enthusiasm had now flagged. There was not enough blood even to keep going the two plasma apparatus installed at the All-India Institute of Medical Sciences.

She stressed the need to revive the lost enthusiasm so that blood when needed for jawans and others may be easily available.

Speaking in favour of voluntary blood donation, she said that she did not like the idea of buying blood. "Donors, when they get money, give blood more often than they should." This was not correct. The donor should feel that he was doing some service to the society and the receiver should feel grateful to the society, she said. "Blood," she said, "was invaluable and could not be balanced in terms of money."

Dr Nayar said that there was need now to popularize the idea that there was no harm in giving blood.

Shrimati Gandhi congratulated the VBTS workers. She said that blood donation was a "kind of duty which is very satisfying."

She said the Health Minister encouraged, exhorted and guided the people to donate blood, but ultimately it was in the hands of people how quickly they responded. The need was to educate them to donate more blood.

Shrimati Gandhi said that suggestions from Voluntary Blood Transfusion Service in planning suitable radio or television programmes such as small plays and skits, etc., would be most welcome. She assured of the cooperation of the media units of the Information and Broadcasting Ministry in carrying the message to people.

Swasth Hind

Mrs Ramadhyani, Chairman of the VBTS, said that during its one year existence the Service had received 800 units against a target of 1,000 units. She said that the blood donated to the Service was given to both Safdarjang and Irwin Hospitals for their use. Donors were entitled to receive free blood in an emergency affecting themselves or any of their family members.

She said that the Service so far had response from Government and private offices and soon its field would spread to other sections of the people also.

Educating People for Road Safety

MOST of the victims of fatal road accidents in the capital are children and people over 50, according to a survey for the first half of the year, conducted by the traffic police.

Of the 122 people involved in fatal road accidents during the period 92 were children, the rest being people aged more than 50.

The number of accidents, fatal and otherwise, registered a decline—3568 as against 3579 during the first half of 1963. These figures, however, are much higher than that for the first half of 1962, i.e., 600.

Of the 122 fatal accidents during the period under survey 90 occurred in the city and the rest in the countryside. But not all villagers were actually killed on roads. Some were knocked down by tractors.

The traffic police feel that the drives launched by them from time to time to educate the public about traffic rules and road safety have contributed to the decline in the number of accidents during the period.

Lakhs of pamphlets on road safety and traffic rules prepared by the traffic police and an oil company were distributed to road-users. Over 22,000 school children attended lectures by traffic police officers on road safety. The traffic training park opened on Irwin Road had attracted a large number of children.

The traffic education programme was carried to the rural areas and police officers were sent to 50 villages. Efforts in this direction will be speeded up but it is felt that the task of educating villagers about traffic rules and road safety may not be as effective as the authorities desire because of illiteracy and the lack of road there.

Zonal Farms for Medical Herbs

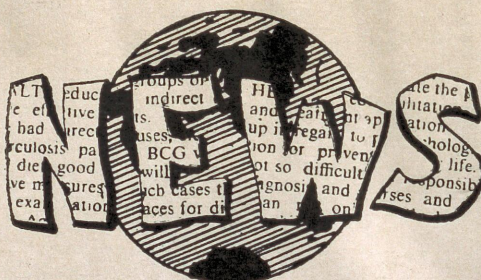
THE Central Indian Medicinal Plants Organization (CIMPO) of the CSIR has proposed to undertake large scale cultivation of medicinal herbs in a bid to feed the indigenous phyto-chemical industries both for internal consumption and for export.

It is learnt that over 300 acres in Kerala and 1000 acres in Shillong will be taken over by CIMPO for this purpose. Already a few similar zonal drug farms are being run by the organization. These are situated in Jammu and Kashmir, Haldwani and Bangalore. At a recent meeting of the executive council it was decided to set up zonal farms in more centres and to constitute a national survey unit to make an intensive survey of the important medicinal and aromatic plants for their selective cultivation.

Effects of Pesticides

A Special Committee has been constituted by the Indian Council of Agricultural Research to examine whether there is any harmful effect on human health and wild life on account of the use of chemical insecticides and pesticides in agriculture and forestry. The Committee, which will be presided over by Prof. M.S. Thacker, Member (Education), Planning Commission, consists of eight other members.

The Committee will study whether use of particular insecticides and pesticides should be prohibited entirely or except for some special purposes and under prescribed conditions; and suggest the future programme for the manufacture and import of chemical insecticides and pesticides in the light of their recommendations.



MORE CHOLERA CASES IN 1963

GREATER number of cholera cases and deaths were reported to the World Health Organization in 1963 than were registered in any other year of the past five, according to the Organization's Weekly Epidemiological and Vital Statistics Report No. 39. Throughout the world there were 65,157 cases and 21,735 deaths as compared with 41,575 cases and 12,016 deaths in 1962.

India and East Pakistan were in the first place as in other years with 55,069 cases, of which over 90 per cent were in India. 28,182 cases were reported in 1962.

The Philippines, Burma and Thailand each had more than 2,000 cases and there was a serious epidemic in Indonesia.

No cholera had appeared in the Republic of Viet Nam in 1963 but in early 1964 an epidemic swept the country and 17,559 cases were notified between 5 January and 25 July, 1964.

A strain of cholera known as El Tor, previously confined to the Celebes of Indonesia has been spreading through the Western Pacific since 1961. Until then considered to be a non-quarantinable disease, this strain became such a menace that it now is regarded as a form of classical cholera and treated as such. In addition to territories invaded before 1963—Java, Sarawak, Hong Kong, Macao, the Philippines, North Borneo, Taiwan, West Irian—cholera El Tor also spread to the Republic of Korea last year and to most countries in the Malaysian peninsula.

Another important feature of the year was the high incidence of the disease in certain towns adjacent to ports and airports: there were 4,592 cases in Calcutta.

—WHO Press Release

PRESERVING DONOR EYES FOR THE BLIND

THREE British specialists, working in the department of ophthalmology at Westminster Hospital, London, have developed a successful technique for deep-freezing donor eyes.

The specialists are F.O. Mueller, T.A. Casey and P.D. Trevor-Roper. They say that though satisfactory methods exist for grafting the cornea there is a shortage of donor eyes. Even though the available eyes have been deep-frozen at four degrees centigrade, they quickly become unsuitable for grafting the full thickness of the cornea.

It is possible to keep partial-thickness grafts, which remain clear, but full-thickness grafts rarely remain so unless a particular internal surface, called the endothelium, is intact and its cells alive at the time the graft is done.

The problem was to find a method of "banking" eyes which would keep them viable for long periods. The new technique, the specialists say, "seems at last to answer this problem."

Their method is to irrigate the eye with a solution of a substance called dimethyl sulphoxide (DMSO) and then suspend it in a glass tube containing a solution of glycerol and human plasma. The tube is sealed, cooled slowly to minus 45 degrees centigrade and then transferred to a deep-freeze bank where the eyes are kept at minus 79 degrees centigrade.

Eyes banked in this way have been stored for up to 29 days. After rapid thawing, all the eyes were clear and nine full-thickness cornea grafts have been performed with them.

The results have been encouraging. Seven of the grafts were observed for six months after the operations. Five of these were successful and remained quite clear. The other two grafts are now in

Swasth Hind

their third month after operation and also look like being successful.

This is a much higher percentage of success than is normally the case, and even the failure of two grafts was probably caused by damage to the endothelium during the actual operation.

The specialists say that knowledge about thawed human cornea is still incomplete. More experiments are needed to prove the maximum storage time for human eyes necessary for full-thickness grafts. Rabbits' eyes, for example, have been kept by the same means for as long as 114 days.

The technique can already be used to cut down the present enormous wastage of valuable tissue that could save sight.

—British Information Service.

PREVENTING PREMATURE AGING

KEEP moving, keep working, eat well, don't drink or smoke too much—such is the recipe for a long life and a pleasant old age, according to a report issued by the Regional Office for Europe of the World Health Organization.

The report deals with the health protection of the elderly and the aged and the prevention of premature aging, which was the topic of a European Seminar convened by WHO in Kiev, USSR, with participants from 20 countries.

The report draws a distinction between three chronological stages in aging:

- (1) middle-aged persons (from 45 to 59);
- (2) the elderly (from 60 to 74);
- (3) the aged or old people (75 and over).

Persons of 90 or over should be classed in a separate category, that of "the very old".

Premature aging, according to the WHO report, implies any partial or general acceleration of the rate of aging, resulting in being ahead of the average aging time-table for one's age-group.

What tests should be used to determine true biological age? Of the more than one hundred tests now available, a number were recommended for public health purposes. General signs of age should also be recorded: posture, gait, wrinkles, hearing acuity, greyness, condition of teeth.

By comparing all the data obtained, it is possible to form an idea as to how far a person's functional and organic condition corresponds to his chronological age, and whether he is younger or older.

Factors liable to influence the rate of aging in man include:

Physical activity: exercise is necessary for middle-aged and elderly persons as much as for the young, and should be adapted to their capabilities. Breathing exercises are also useful. According to the USSR data, maintaining a regime of movement makes it possible not only to preserve the functional potential of elderly people, but also to restore impaired adaptive mechanisms and improve working capacity.

Work: keeping up a job is one of the most important requisites for sound health in mind and body. It provides a steady dynamic pattern, supports the tonus of the aging individual, and gives him a sense of satisfaction. Again, the job must be adapted to his capability, and it is very important to reduce the volume and slacken the rhythm of work. Hobbies are also essential to the enjoyment of life, and facilitate adaptation to retirement.

Nutrition: aging people must eat as well, if not as much, as the young. Pensions must be adequate for the purchase not only of expensive calories but of foods providing the required vitamins and minerals. Even when the best food is available, many old people show signs of malnutrition, often simply because they have trouble with their teeth or their digestion, or because they live alone and no one looks after them.

Alcohol is an important factor in accelerated aging of the nervous system; heavy smoking leads to lung diseases and coronary sclerosis; there are risks in many drugs old people fancy and often take without medical supervision (corticosteroids, anti-hypertensive drugs, anti-coagulants).

"While it might be illusory to think of ever stopping the clock, and still less of putting it back, it is perfectly reasonable to hope that the rate of aging can be slowed down sufficiently to allow all to enjoy their maximum potential for the longest possible time," the report concludes.

—WHO Press Release

WHO Regional Committee Meeting *continued*
from page 297

Dr Nayar also referred to recent unexpected changes in the epidemiological pattern of haemorrhagic fever, poliomyelitis and cholera El Tor. An epidemic of cholera El Tor broke out last year in Calcutta where the disease had not been seen before, and recent outbreaks of haemorrhagic fever (a virus disease with about 20 per cent fatality) in Calcutta and Madras were causing serious concern, Dr Nayar said.

The Annual Report presented by the Director of the SEARO said that the World Health Organization (WHO) had been assisting 146 projects in South-East Asia during the past year.

The bulk of WHO-assistance has been in the control or eradication of communicable diseases. Considerable progress in malaria and yaws eradication is reported. In Thailand, for example, which had about 2,50,000 cases of yaws ten years ago, the disease is no longer a public health problem, and Ceylon, as the first country in the region, has advanced to a stage in malaria eradication where it has been able to stop insecticide spraying in the whole country.

According to the report, however, progress in the control of other communicable diseases such as tuberculosis, leprosy, trachoma, filariasis and venereal infections is still discouraging, and the number of cases and deaths from some diseases (diphtheria, whooping cough, tetanus) for which effective vaccines are available remain high; for example, deaths among tetanus patients in an infectious diseases hospital in the region averaged about 50 per cent, and among newborn the death rate was 75 per cent.

Diseases linked with insanitation are still widespread in South-East Asia, the report says, and in one country in the region 20 per cent of all hospital beds are occupied by patients suffering from intestinal infections.

The report said, nearly half of WHO's assistance during the period under review was directed against communicable diseases such as malaria (9 projects), tuberculosis (8 projects) and leprosy (6 projects). Twelve other projects in communicable diseases included smallpox, trachoma and cholera.

Other Projects

Other fields of activity included health statistics (5 projects), public health and rural health services (9 projects), nursing (18 projects), environmental sanitation (8 projects), direct assistance to medical institutions (10 projects), special public health services (31 projects) and 30 projects in other activities. Many of these projects have been supported by United Nations Children's Fund (UNICEF) with equipment and supplies.

WHO assistance also included 136 fellowships to health workers from the region for study abroad and assistance to medical research in subjects such as vector resistance to insecticides, tuberculosis, smallpox migratory birds in their role as disseminators of viruses, rabies, nutrition, human population, genetics, radiation and cancer.

The report notes that the past year "has been a very difficult one for the South-East Asia Region. Political difficulties and ever-tightening budgets have continued to hinder public health work in a number of countries, and even some of the past achievements have been threatened."

"With growing populations and ever-increasing sophistication, the demand rises steadily while the supply lags far behind," the report added.

During discussion of the annual report, the Committee endorsed the continued emphasis on WHO assistance to countries in South-East Asia on control and eradication of major communicable diseases, such as, malaria, tuberculosis, yaws and smallpox and on the improvement of environmental sanitation.

In a resolution noting the relatively large number of cases of typhoid fever in the Region, particularly among children, the Committee called for the introduction of systematic programmes of immunization of school children, through the coordinated efforts of Ministries of Health and Education.

The Committee also adopted a resolution calling for the improvement of infectious diseases hospitals.

Smallpox Eradication

The technical discussions held during the Regional Committee meeting were devoted to smallpox eradication. Dr K.M. Lal, Deputy Director-General of

Health Services, India, was elected chairman of the discussions.

It was pointed out that Asia still reports the largest number of smallpox cases and deaths. In 1960, this continent had reported about 67 per cent (39,000 cases) of the world's total and in 1963, 81 per cent (75,000 cases). The increase of the number of cases in 1963 was foreseen according to the cyclical trend of the disease in some countries.

The technical discussions group stressed that eradication of smallpox from the Region could only be achieved if nation-wide eradication projects were pursued by all countries and if an adequate level of immunization was maintained on a long-term basis after the completion of mass eradication programmes.

It was noted that most countries in South-East Asia had started production of freeze-dried smallpox vaccine with the assistance of WHO and UNICEF. However, it would take a minimum of two years before they could meet their own requirements. It was recommended that in the meantime WHO should endeavour to obtain further donations of freeze-dried vaccine from countries with adequate production facilities. Millions of doses of freeze-dried smallpox vaccine have already been donated to South-East Asia by the Soviet Union, the Netherlands, Switzerland and the United Kingdom.

The 18th session of the Regional Committee will take place in Kabul (Afghanistan) in September 1965.

Entering Maintenance Phase *continued from page 292*

Lastly, it may also be pointed out that the fulfilment of the above criteria of eradication cannot be considered to be limited to the country as a whole but it has to be applied individually to every State and every District of the country and should apply even to all the neighbouring countries of a continent or a Region. Then only the goal of eradication can really be achieved.

In the history of eradication programme the attack phase has not been immediately followed by a maintenance phase without having gone through a sur-

veillance or vigilance period. Therefore, it needs a serious consideration whether such a bold step of embarking upon maintenance phase immediately after the attack phase should be chosen in the case of smallpox eradication, where desired achievements are more difficult in view of its involvement of human element. We have, therefore, to be very careful and judicious in declaring our achievements before the world, which is so anxiously watching for the results of this gigantic programme of developing country like India.

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SMALLPOX AND CHOLERA

MORBIDITY AND MORTALITY

DURING August 1964, 922 cases of Smallpox with 270 deaths were reported in India. The number of cases and deaths due to Cholera were 6076 and 1881 respectively. No case of Plague was reported.

STATE	SMALLPOX		CHOLERA		PLAGUE	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Andhra Pradesh ...	54	14	2287	777	—	—
Assam ...	6	1	—	—	—	—
Bihar ...	132	42	232	69	—	—
Gujarat ...	1	1	—	—	—	—
Jammu & Kashmir ...	6	4	—	—	—	—
Kerala ...	—	—	—	—	—	—
Madras ...	478	134	25	11	—	—
Madhya Pradesh ...	41	20	185	56	—	—
Maharashtra ...	82	8	2349	670	—	—
Mysore ...	16	2	218	60	—	—
Orissa ...	7	2	11	2	—	—
Punjab ...	—	—	—	—	—	—
Rajasthan ...	10	—	—	—	—	—
Uttar Pradesh ...	44	22	238	59	—	—
West Bengal ...	43	20	531	177	—	—
Andaman & Nicobar Islands ...	—	—	—	—	—	—
Delhi ...	2	—	—	—	—	—
Goa ...	—	—	—	—	—	—
Himachal Pradesh ...	—	—	—	—	—	—
Laccadive, Minicoy & Amindive Islands ...	—	—	—	—	—	—
Manipur ...	—	—	—	—	—	—
Pondicherry ...	—	—	—	—	—	—
Tripura ...	—	—	—	—	—	—
TOTAL ...	922	270	6076	1881	—	—

Statement about ownership and other particulars about newspaper entitled SWASTH HIND.

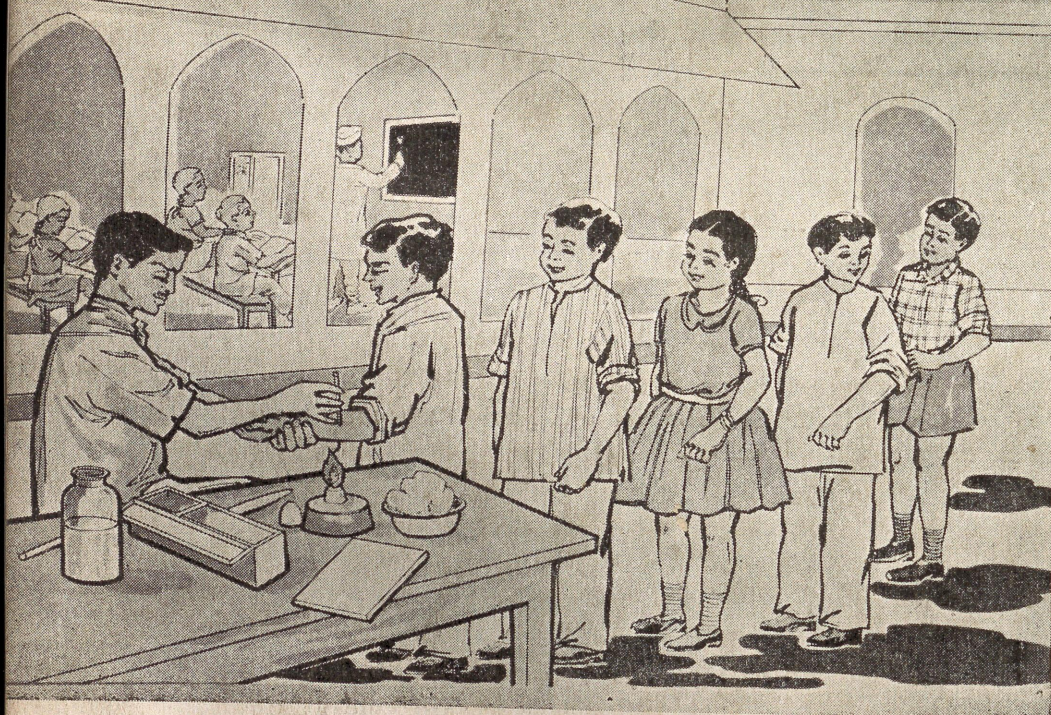
FORM IV
(See Rule 8)

- | | | | | | | |
|--|-----|-----|-----|-----|-----|---|
| 1. Place of Publication | ... | ... | ... | ... | ... | New Delhi |
| 2. Periodicity of its publication | ... | ... | ... | ... | ... | Monthly |
| 3. Printer's Name | ... | ... | ... | ... | ... | The Government of India Press |
| Nationality | ... | ... | ... | ... | ... | Nilokheri |
| Address | ... | ... | ... | ... | ... | (PUNJAB) |
| 4. Publisher's Name | ... | ... | ... | ... | ... | Central Health Education Bureau |
| Nationality | ... | ... | ... | ... | ... | Directorate General of Health Services |
| Address | ... | ... | ... | ... | ... | Ministry of Health
Kotla Road, Temple Lane
NEW DELHI |
| 5. Editor's Name | ... | ... | ... | ... | ... | Shri T.K. Parthasarathy |
| Nationality | ... | ... | ... | ... | ... | Indian |
| Address | ... | ... | ... | ... | ... | Assistant Editor
Central Health Education Bureau
Directorate General of Health Services
Kotla Road, Temple Lane
NEW DELHI |
| 6. Name and address of individuals who own the newspaper and partners or shareholders holding more than one per cent of the total capital. | ... | ... | ... | ... | ... | Nil |

I, Dr V. RAMAKRISHNA, Director, Central Health Education Bureau, hereby declare that the particulars given above are true to the best of my knowledge and belief.

Sd/- V. RAMAKRISHNA
Director
Central Health Education Bureau

WE CAN ERADICATE SMALLPOX BY VACCINATION



This 'Type' poster
has been designed
and published by
the Central Health
Education Bureau

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