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THE NATIONAL COMMISSION FOR ASSESSMENT OF THE
SMALLPOX ERADICATION PROGRAMME IN INDIA

by

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The last known case of smallpox in India caused by indigenous transmission occurred on 17 May 1975 in Katihar district of Bihar State. A week later, on 24 May, a woman who frequently crossed the border with Bangladesh for begging purposes developed smallpox while staying on the platform of Karimganj railway station in Cachar, the Southern district of Assam State.¹ She had contracted the infection in a village of Sylhet district in Bangladesh. This patient is believed to be the last case of smallpox imported into India.

Since then intensive surveillance has been maintained throughout the country. During the rest of 1975, between one and five house-to-house searches were conducted in the different States. In 1976, two nationwide searches were carried out, one during spring and the other in the autumn. During the monsoon, all approachable urban areas with a population of five thousand or more were searched on a house-to-house basis. In the months between these search operations, information about diseases involving skin rashes with fever was collected by the basic health workers during the course of their routine duties in the villages and towns, at schools, markets, melas and hospitals. The reward of Rs.1000/- for reporting smallpox cases was widely publicised in order to motivate the population to report any disease resembling smallpox. In spite of these intensive activities in late 1975 and 1976, no case of smallpox was discovered anywhere in the country.

The WHO Expert Committee on Smallpox Eradication (1972) advised that ". . . in countries with active surveillance programmes, at least two years should have elapsed after the last known case . . . before it is considered probable that smallpox transmission has been interrupted."²

In order to confirm independantly that smallpox has indeed been eradicated from India, an International Commission of distinguished epidemiologists and health administrators from different countries are scheduled to visit the country in April 1977.

It was decided that an "Internal technical audit" by experienced public health workers, both Indian and international, would be helpful to ensure that all States were adequately prepared to meet this International Commission and the concept of a National Commission was born.

Objectives

The following objectives for the National Commission were defined:

- (a) to observe, in detail, the process of smallpox surveillance in all its activities;
- (b) to determine if there is any evidence of smallpox foci having occurred since the last reported case;

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- (c) to motivate staff at all levels to maintain a high standard of surveillance up to the time of the International Commission; and
- (d) to recommend an operational plan for the first three months of 1977 to strengthen surveillance.

Membership of the Commission

The Commission was headed by Dr P. P. Goel, Director-General of Health Services as Chairman, with Dr N. A. Ward of the World Health Organization (WHO) and Dr R. N. Basu, Assistant Director-General of Health Services, as Member-Secretaries responsible for planning, organizing and coordinating the assessment programme. A total of 32 Commission members representing the Union Government of India, 12 State Governments and WHO were formed into six teams. The members representing WHO and the Government of India included experienced epidemiologists who had not been involved previously in the Smallpox Eradication Programme.

Initial meeting

The members held an initial meeting in Delhi on 13 and 14 December 1976 at which the procedure of assessment was discussed and finalized. Professor Kostrzewski, the Secretary of the International Commission, who had previously examined smallpox programmes in four States of the country, presented his findings and recommendations. His observations helped Commission members to appreciate the standards of surveillance eventually required to satisfy the International Commission. Dr Arita, Medical Officer, WHO Headquarters impressed upon the group the need for each person to convince himself of the absence of any smallpox case in each area by studying surveillance at all levels. A check list of documents and surveillance indices to be used at the State, district, PHC and municipality level were explained and an outline plan was provided to assist members in the preparation of a report of each visit. Each team was provided, for their detailed study, with two copies of the Area Report of each State they were to visit.

Working procedure

Commission members were grouped into six teams, each team being given responsibility for a group of States. The group visiting a particular State or Union Territory (U.T.) consisted of one to four members and the duration of their stay varied from one day (Delhi, Chandigarh, Dadra and Nagar Haveli, Pondicherry, Goa) to eight days (Uttar Pradesh). The Commission members visiting each State divided into groups and were assisted during their visits to various units by State level officers:

The Commission members selected mainly those areas in which it was thought possible that smallpox could have persisted. These areas were chosen after a thorough review of the State programme, by studying the "Area Report" and following discussion at the State, district and PHC level. The following criteria were followed in selecting areas to visit:

- (a) The site of the last known smallpox outbreak in the State, district or PHC.
- (b) The unit most deficient in submitting routine reports such as weekly epidemic reports or monthly fever with rash reports.
- (c) The place of the last known chickenpox death case or suspected smallpox case.
- (d) The area which showed no improvement in the assessment findings during the last two searches.
- (e) Areas likely to be poorly searched, such as tribal areas, islands, desert etc.
- (f) Districts bordering onto neighbouring countries recently endemic for smallpox.
- (g) Areas previously heavily affected by smallpox.

This list indicates that the areas with weaker surveillance and therefore most likely to harbour smallpox were the ones actually selected for assessment.

In addition to the general impressions gained by the Commission members during field visits, interviews, with local staff, study of records, field assessment in villages and municipal wards, the following indices of programme effectiveness were also carefully examined.

- (a) Active searches - information on the adequacy of the numbers of search workers assigned for a targeted population, the ratio of supervisors to search workers, the number of fever with rash cases detected in the search, the specific assessment findings during the spring and autumn searches of 1976.
- (b) Intersearch surveillance - the effectiveness of detection and reporting of fever with rash cases during the intersearch period.
- (c) The percentage of fever with rash reports verified personally by a medical officer and by other supervisory staff.
- (d) The efficiency of the flow of periodic reports such as weekly epidemic reports, monthly fever with rash reports, chickenpox death and suspect smallpox reports.
- (e) The maintenance of records and programme documentation in the form of maps, charts and files.
- (f) The extent and effectiveness of the publicity of the reward of Rs.1000/- for the person first reporting a smallpox outbreak.
- (g) The involvement of responsible medical officers and the general administration in the programme.

When visits were made to villages and municipal wards to confirm that the programme was being implemented in the field, the following factors were examined:

- the awareness of the population concerning the necessity to report smallpox cases promptly, if they occurred, and to where they should be reported;
- evidence of publicity of the Rs.1000/- reward for reporting smallpox cases;
- a pock mark survey to discover any evidence of cases not previously notified;
- the investigation of any current outbreak involving fever with rash cases or reports of a case difficult to diagnose;
- the quality of epidemiological investigation done by local staff.

Field work

The six teams commenced field studies on 15 December, and had completed their work by 8 January 1977. All States and UTs except the Andaman and Nicobar islands were visited. In addition to making visits to the State/UT Health Directorate including the smallpox eradication office, 144 district health offices, 46 corporations and municipalities, 237 primary health centres and 191 villages were studied in depth. The last outbreak area (if it had occurred after 1973) was investigated in 20 out of 31 States/UT. Twelve districts bordering the neighbouring countries of Nepal, Bangladesh, Pakistan and Bhutan were visited. Observations on the status of surveillance and documentation in the State/UT were discussed with the State health authorities by the Commission members before leaving. Their recommendations for improving the programme were formulated.

All team leaders submitted a brief report on their visit to each State under three broad headings: (i) area visited, (ii) main findings, and (iii) recommendations for improvement.

Findings and recommendations of the Commission were discussed at a National review meeting held in New Delhi on 20-21 January. Directors of Health Services and State Programme Officers reported any corrective measures they had taken as a result of the Commission's recommendations. They also detailed their strategy of surveillance for the next three months.

Findings of the Commission

General

All Commission members categorically stated that they discovered no evidence of smallpox since the last reported case in any of the areas visited by them. In general, they were satisfied with the progress of surveillance programmes in most of the States. Scope for improvement in various components at different levels was discovered and these defects were brought to the notice of the concerned health officials. Each team graded the States it visited and on this basis, it was apparent that a few States required special attention from higher authorities. Similarly, in each State sub-areas were identified. For example, Ahmedabad Corporation was revealed as the weakest area in Gujarat and similarly the districts of Medak in Andhra Pradesh, Karbi Anglon in Assam, Kolar in Karnataka, Doda in Jammu and Kashmir, several districts of Maharashtra, the hill districts of Uttar Pradesh and the northern districts of Bihar, were all identified as showing poorer surveillance than other units in the State.

Active search in November 1976

The last active search for smallpox cases throughout the country was in November 1976. The search had been preceded by briefing sessions at State, district and PHC level in order to brief all staff and to emphasize the vital importance of this last search. All health staff including malaria and family planning workers were mobilized. The number of search workers and supervisors was higher than in any previous search. Ninety eight per cent. of the villages in India were covered. In several States - Punjab, Karnataka, Uttar Pradesh and Andhra Pradesh - the search in urban and rural areas was carried out in separate weeks in order that staff from the PHC could be drawn upon to supplement the limited staff of municipalities. In Uttar Pradesh and Haryana, the search in groups of districts was carried out in two phases to ensure better supervision from the State level. The prevalence of fever with rash cases as reported by the searchers and the results of the assessment carried out by medical officers of PHCs, districts and the surveillance teams indicated that the techniques adopted and the resources mobilized had been adequate for an efficient search. In general, over 81% of the households questioned were aware of the visit of the search worker, of the reward of Rs.1000/-, and where to report smallpox cases if they occurred.

The Commission considered the search to have been satisfactory apart from a few units.

Intersearch surveillance

Surveillance activities carried out during the six months between the spring and autumn search operations were also assessed.

Although the Commission considered the possibility of smallpox transmission persisting undetected anywhere as remote, reporting of other fever with rash diseases was not efficient in many States during this period. All States, apart from Assam, Himachal Pradesh, Kerala, Punjab and Tripura had reported a significantly lower incidence of fever with rash diseases compared with the months when an active search operation was held. A number of PHCs and

municipalities were identified as not having reported any fever and rash cases for three months or more. In one geographical area in Aurangabad District, Maharashtra State, six out of the 19 PHCs had not reported any fever with rash cases at all during this intersearch period.

Routine visits of health staff to villages should be the best source of information of fever with rash cases. Though these workers are closely involved in the active search operations, the Commission found that they were being poorly utilized for routine fever with rash surveillance in most States during the intersearch period. Hospitals in general do not report fever with rash cases while secondary surveillance involving teachers, village level workers and others is rarely practiced in many States. Although in many units there were maps delineating high risk areas, there was rarely a programme of special surveillance among these most vulnerable communities.

The market search is an effective tool for obtaining rumours of smallpox outbreaks but was proving to be unproductive in obtaining information of fever with rash cases. Although most PHCs maintained a list of markets, including the days when they were held and their catchment areas, in most PHCs "NIL" fever with rash information was reported from the market search. The factor responsible for this poor yield may be the deployment of a single staff member for searching purposes without supervision or guidance. In several districts, discrepancies between the monthly market search reports and the fever and rash register entries were detected. The States were advised to use the same market search technique in all places where people from many villages might assemble, such as at outpatient departments, fairs and festivals. The staff posted in fairs and festivals tended to give greater emphasis to publicity of the Rs.1000/- reward than to enquiring for fever with rash cases.

Verification of the diagnosis in fever with rash outbreaks

On average 30% of fever with rash outbreaks were being verified by medical officers, 40% by other supervisory staff and the remaining 30% by vaccinators or basic health workers. Many PHCs were found where the percentage of verification by medical officers and supervisory staff was lower than the all-India average. In the States of Assam, Bihar, Haryana, Himachal Pradesh, Karnataka, Kerala, Orissa, Tripura and Uttar Pradesh, the percentage of reports of fever with rash cases verified by a medical officer was low. It was noted with concern that recording of the verification by the medical officer, when he did visit the outbreak, was not always satisfactory.

Collection of specimens

During 1976, over 500 specimens for laboratory diagnosis were received from the States and UTs. According to the operational guidelines a specimen should be sent from all suspected smallpox cases and chickenpox outbreaks where death had occurred. In the latter part of 1976, States had been advised also to send specimens from cases which caused any difficulty in diagnosis. In West Bengal, out of 111 outbreaks of chickenpox where a death had occurred, specimens were collected from only 41. In Kerala, specimens had not been collected from 75% of the chickenpox death outbreaks and were collected from only 41 outbreaks. In several districts, specimen collection kits were not available. Bihar collected the largest number of specimens in 1976 and all districts of that State had sent some specimens. In the States of Gujarat, Tamil Nadu and Orissa the number of specimens collected was much too few compared with the number of fever with rash outbreaks reported.

Municipal surveillance

In most States, corporations and municipalities were reported by the Commission as the weakest links in the surveillance network. Ahmedabad and Madras Corporations, and Bilaspur Municipality (Madhya Pradesh) had no evidence of surveillance activity between the two active searches. Documentation and record keeping about the programme was poor and sometimes nonexistent in some of the corporations and municipalities. Infectious disease hospitals

had poor coordination with municipal health authorities and a fever with rash register was not maintained in the infectious disease hospital in Delhi. Fever with rash patients admitted in these hospitals, including even chickenpox deaths, had not been notified to the corporation or district health officer. Three chickenpox deaths in the Infectious Disease Hospital, Nagpur, came to the notice of the health authority only during the Commission's visit. In Calcutta, there was no record on special surveillance among pavement dwellers or groups belonging to the lowest socioeconomic status which constitute the higher risk groups in urban areas.

Flow of periodic reports

The despatch of periodic reports (weekly epidemic report, monthly fever with rash, quarterly statement of chickenpox deaths and suspect smallpox case and others) was found to have improved significantly since the beginning of the year. However, in a number of States, reports are still being delayed or being delivered irregularly. In Madhya Pradesh, 21 out of 45 districts and in Maharashtra 13 out of 25 districts were found to be irregular in their submission of weekly epidemic reports. In these States 40% to 60% of the basic reporting units were found not to report to the district on time. The districts of Samastipur, Sitamarhi and Vaishali of Bihar were also specifically mentioned in this respect. Again, municipalities are the main defaulters in the despatch of weekly epidemic reports. In some States, weekly epidemic reports have been sent to the central level without a proper basis. In Maharashtra the report for week No. 49 was sent as "NIL" for all districts, when many of them had not yet reported to the State. Meghalaya despatched reports to the central level only up to the month of June 1976.

Record keeping and documentation

In most of the States and UTs, maps, wall charts and files presenting smallpox surveillance activities are being maintained at various levels. The documentation was found to be satisfactory in most State level offices. Records were poorly maintained in corporations and municipalities compared with district health offices and primary health centres. In many units, the relevant maps and charts were not arranged in a proper sequence and were mixed up with irrelevant records. In some units of Bihar and Maharashtra, because of deficiencies in wall space, maps and charts have been prepared in album form. It was observed occasionally that the medical officer was fully dependent on his assistants to explain or clarify points regarding maps and charts, while the programme was being presented to the Commission. The significance of the charts was not fully appreciated in most units and many discrepancies and errors were noted in many records. The data contained in monthly fever with rash reports, fever and rash registers and search summaries did not always correspond.

Vaccination performance

In the operational guidelines, vaccination policy clearly indicated that neonatal vaccination was a priority. It was clear that infant vaccinations are not being carried out as requested by the guidelines. Vaccination scar surveys conducted in several villages of Madhya Pradesh indicated that many infants are unprotected and the range of unprotected in the one to four years age-group varied from 25% to 54%. Several PHCs in Maharashtra and Bihar were found without a stock of freeze-dried smallpox vaccine, while in Sikkim, rotary lancets were still found to be in use in several units.

Involvement of medical officers

The Commission members noted that in almost every State, the State programme officers were highly motivated and were technically expert. Almost without exception, the Directors of Health Services (DHS) have shown a deep interest in the programme, ably presenting its progress and accompanying the Commission teams in the field. Civil Surgeons (CS) and

District Health Officers (DHO) are responsible for the programme at the district level, and although in most of the districts their activities were appreciable, on some occasions programme delivery was delegated to a paramedical assistant. The DHOs in several districts of Bihar, East Champaran and Muzaffarpur were not at all knowledgeable about the programme. Medical officers in charge of primary health centres are responsible for the programme at the PHC level. Although in the majority of cases, their involvement was found to be satisfactory, the Commission found their involvement in the field work, field supervision of the staff and verification of reports to be insufficient in some PHCs. Responsibility for scrutinizing reports was given to the sanitary inspectors in some PHCs without review by the medical officer. This resulted in discrepancies.

The Commission noted poor involvement of PHC medical officers in West Bengal where the programme is delivered through the Rural Public Health circles which have sanitary inspectors in charge. The 130 State surveillance teams deputed around the country were found to be technically knowledgeable and of great help at State, district and PHC level.

The Commission noted significant under-utilization of the State surveillance teams in the States of Rajasthan and Maharashtra.

Publicity

Publicity given to the Rs.1000/- reward was found to be adequate in most States. This was reflected in the high percentage of people knowing about the reward and where to report smallpox if it occurred. Various innovations were observed in intensifying this publicity such as the use of badges by smallpox staff, car stickers, banners, metal posters, cinema slides, calendars, and wall slogans. Local press releases kept different departments of the administration well aware of the progress of the programme. Some State governments - Punjab and Haryana - printed booklets incorporating smallpox guidelines for use by health staff. Several journals like "Sehat" of Punjab, "Newsletter" of Bhilai Steel Plant, "Swasth Hind" of Delhi published features on smallpox every month.

Recommendations

The Commission stressed that the highest priority must be given to the Smallpox Eradication Programme.

In view of the importance of the final three months before the visit of the International Commission, the following measures were recommended for immediate implementation.

Strengthening and maintenance of surveillance

On the basis of epidemiological information of previous years, the incidence of fever with rash cases, especially chickenpox, is likely to increase steadily during the next three months. This may be used as an index for the evaluation of the efficiency of ongoing surveillance in different areas. The number of fever with rash cases detected in the November search may be taken as a baseline and the reported incidence should increase in the subsequent months in all units. It has been estimated for the southern States that the number of chickenpox cases will increase from 15 per 100 000 population in the month of November to 45 per 100 000 in April. Based on such an estimate, anticipated numbers of reports may be fixed for all basic reporting units. In order to ensure adequate reporting of suspect cases, surveillance should be strengthened through the following measures:

1. Special searches

Surveillance should be strengthened in all States/UTs by selecting, on average, two to three basic reporting units per district for special search activities, using the criteria given below. The searches must be well planned and supervised and should be completed by the end of February. Reports of these searches must be available at PHC and district level.

Criteria for selection:

- PHCs that reported nil fever with rash cases for three or more months during 1976 or did not detect any such case during the November search.
- Hill areas, tribal villages, communities living in isolation, resettlement colonies (e.g. Delhi), difficult access areas which might be visited rarely by health staff.
- Areas where assessment indicated a poor search in Autumn 1976 or where no assessment was carried out.

2. Verification of fever with rash outbreaks

All fever with rash outbreaks must be verified either by a medical officer or by the supervisory staff of the PHC.

All suspected smallpox reports and chickenpox deaths should be investigated fully by the medical officer in charge and the diagnosis of other cases in the outbreak must be confirmed by the laboratory. In addition, specimens for laboratory tests should be taken from atypical chickenpox patients and from chickenpox outbreaks:

- when eruptions are found on the soles and/or on the palms of the hands;
- where extensive rash is present over all the body in severe chickenpox cases;
- where a history of known chickenpox contact is not traceable in isolated chickenpox cases.

Any areas with weak surveillance systems should be identified in each State and visited by the programme officer, the epidemiologist or the State surveillance team in order to render any assistance necessary to improve the situation. Basic reporting units which are sending reports irregularly or are reporting a small number of fever with rash cases compared with those discovered in the November search, must be considered as weak units. From an administrative point of view, if local staff are found not to be improving the standard of surveillance, that particular area should be included in the list of high risk areas. Social and geographical factors such as large congregations of people, movements of population, remote areas, etc. will also form the basis for identification of an area as needing special attention.

Reinvestigation of all smallpox outbreaks which occurred in 1975 and the last outbreak in all States where this occurred in 1974 should include a pock mark survey in the affected village and the three neighbouring villages. This has largely been done already. The last outbreak in each PHC which occurred in 1974 should also be visited by the medical officer and a pock mark survey carried out to ensure that no smallpox case remained undetected after the last known one. Records concerning these pock mark surveys, should be available for inspection at the PHC.

During the next three months, all States should succeed in obtaining submission of weekly epidemic reports and monthly rash with fever on time. These reports must be scrutinized by the medical officer before despatch so that the data provided corresponds to the basic records, such as charts, files and registers maintained at the basic unit.

Publicity of the reward should be maintained at a high level until International Commission visits India.

3. Documentation

Documentation of all surveillance activities must be presented through the maps, charts and files as listed in the area report of the State. The maps and charts should be arranged in sequence, so that they allow for a logical, sequential presentation. The following sequence is advised by the Commission:

- Background information about the unit.
- Smallpox epidemiology.
- Progress of surveillance activities.
- Other relevant information, such as vaccination performance, publicity materials, etc.

One medical officer who has been and still is actively involved in the programme should be identified to present the smallpox surveillance activities at each level to the International Commission.

4. Briefing and involvement of the staff

In Maharashtra, Rajasthan, Madhya Pradesh and Sikkim, the Commission recommended that briefing sessions be held at State, district and PHC level in order to explain surveillance strategy and to demonstrate the documents to be displayed in each unit. Review of the programme in terms of collection of fever with rash reports, their verification and the collection of specimens, may be made at meetings of PHC medical officers at district level. The differential diagnosis between smallpox and chickenpox and the progress of unit documentation may also be discussed in these forums.

The supervisory staff at the State and district level was advised to intensify field activities and especially to motivate peripheral health workers.

In order to provide administrative support, the Commission recommended strongly, that as far as possible, transfer of present health staff before 1977 should be avoided. NSEP staff should be exempted from other duties, in order that their activities are not diverted from the surveillance programme. The significance and the importance of the visit of International Commission should be brought to the attention of all health staff and to the educated public by means of press releases.

It was stressed that neonatal vaccination should be carried out in all hospitals, maternity and child health clinics, and outpatient departments by auxiliary nurse midwives and vaccinators during child care and surveillance visits to the villages. Freeze-dried smallpox vaccine must be available at all primary health centres.

Conclusion

The visit of the National Commission to the States and Union Territories placed emphasis on the surveillance machinery and should improve the documentation of the programme. The free and frank discussions on the programme held at various levels was beneficial to all concerned especially to the local staff. State governments have prepared plans of action based on the recommendations of the National Commission.

The importance attached to the National Commission by the States was evidenced by the fact that health ministers and health secretaries in several States discussed the findings with the Commission members and assured them of all necessary administrative support for the programme. A number of circulars to the district administrators have been issued by chief secretaries, health ministers, Home Department secretaries and health secretaries of

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the States, stressing the nationwide importance of the programme and outlining the most important activities scheduled for the next three months.

Based on the Commission recommendations, review meetings were held at the State level in 12 States. These meetings were followed by district and/or PHC briefing sessions.

In Madhya Pradesh, municipal health officers were briefed at a State level meeting. The Commission recommendations were thoroughly discussed with all epidemiologists and State surveillance team leaders.

The States of Uttar Pradesh, Bihar and Assam which had endemic smallpox in 1974-75, have identified, on average, 10% to 30% of the primary health centres in different districts for an additional search. This is being carried out in February.

With such intensified efforts the country will, hopefully, be able to meet totally the requirements needed to confirm the smallpox-free status of India.

REFERENCES

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TIME SCHEDULE FOR THE NATIONAL SMALLPOX COMMISSION

		December 1976											January 1977																
		15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	
A	Jammu & Kashmir																												Chadha, Achari, Khodakevich, Sramek
	Himachal Pradesh																												Chadha, Achari, Khodakevich, Sramek
	Haryana																												Chadha, Krishan, Khodakevich, Shah
	Punjab																												Chadha, Krishan, Khodakevich, Shah
	Chandigarh																												Chadha, Sondhi, Khodakevich, Shah
	Delhi																												Chadha, Sondhi, Khodakevich, Shah
	Rajasthan																												Chadha, Sondhi, Khodakevich, Shah
B	Andhra Pradesh																											C. K. Rao, Balaraman, Lazarenko	
	Karnataka																											C. K. Rao, Balaraman, Lazarenko, Srivastava	
	Kerala																											C. K. Rao, Srivastava, Lazarenko	
	Tamil Nadu/Pondi.																											C. K. Rao, Rudrappa, Lazarenko	
	West Bengal																											C. K. Rao, Rudrappa, Al-Aghbari, Lazarenko	
C	Uttar Pradesh																											Rodrigues, Asa Singh, Rath, Masar, Galea	
	Orissa																											Rodrigues, Olsen, Oblapenko, Masar	
	Bihar																											Rodrigues, Appa Rao, Oblapenko, Masar	
D	Manipur																											Sehgal, Sen Gupta, Banerjee	
	Tripura																											Sehgal, Sen Gupta, Basu Mallick	
	Sikkim																											Sehgal, Das, Basu Mallick	
	Nagaland																											Sehgal, Das, Basu Mallick	
	Mizoram																											Sehgal, Das	
E	Gujarat																											M. Singh, Nath, Clements, Orlov	
	Maharashtra/Goa																											M. Singh, Nath, Prikazsky, Orlov	
	Madhya Pradesh																											M. Singh, Appa Rao, Prikazsky, Orlov	
F	Lakshadweep																											R. R. Arora	
	Assam																											R. R. Arora, (20) Agarwal	
	Arunachal Pradesh																											R. R. Arora, (20) Agarwal	
	Meghalaya																											R. R. Arora, (20) Agarwal	

APPENDIX B

MAP SHOWING DISTRICTS VISITED BY THE NATIONAL COMMISSION

