SEA-Plague-20
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Plague Surveillance and Outbreak Response

Report of an Informal Intercountry Consultation
Bangalore, India, 15-17 July 2002

WHO Project No: ICP CSR 001

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Annexes

1. INTRODUCTION

An Informal Consultation on Plague Surveillance and Control was organized at Bangalore, India from 15 to 17 July 2002. The participants included epidemiologists, bacteriologists, entomologists, programme managers and media professionals from three countries of the South-East Asia Region - India, Indonesia and Myanmar. Experts from India, Russia, Myanmar, WHO South-East Asia Regional Office and WHO Headquarters-Geneva, facilitated this consultation.

2. OBJECTIVES

(1) To review and approve Regional Operational Guidelines on plague;

(2) To develop an outline of a Plan of Action for plague surveillance and control in SEA Region, and

(3) To develop appropriate media strategies in relation to plague.

3. INAUGURAL PROGRAMME

Inaugurating the workshop, Dr N Kumara Rai**,** Director, Department of Communicable Diseases, WHO South-East Asia Regional Office, New Delhi, read out the address of Dr Uton Muchtar Rafei, Regional Director. Referring to the plague outbreak in India during 1994 and its economical and social impact, he emphasized the importance of strengthening surveillance and improving skills in meeting the challenge of plague. It is estimated that the Surat outbreak resulted in a loss of US$ 3 billion to India, mainly due to import/export and travel bans/restrictions. He stressed the special significance of plague in view of the panic it can create. He also informed that this consultation was a follow up of the actions initiated after the recent outbreak in India in 2002. He assured that WHO shall continue to provide technical support to its Member Countries in enhancing their state of preparedness and in sustaining effective surveillance.

Dr MVH Gunaratne, Regional Advisor, Communicable Disease Surveillance and Response (CSR), described the objectives and mechanism of the workshop. He said that the workshop was unique, since it would provide a common platform to technical and media professionals and was aimed at achieving synergy in their efforts to control and prevent plague. Dr.Derek Lobo, Communicable Disease Dept, SEARO introduced the main speakers and facilitators. (See list of participants at Annex 1. The detailed programme of work has been appended as Annex 2.)

4. GLOBAL AND REGIONAL PLAGUE SITUATION

4.1. Status of Plague

Dr E Tikhomirov, WHO consultant, gave an overview of the global and regional situation of plague. He described six criteria that can be used to prioritize a disease. These included impact on health (mortality and morbidity caused), capability of the agent to cause epidemic, potential for prevention and cure, international importance, economical impact and potential for deliberate use. Plague fulfils all the criteria and hence should be a priority.

During the second half of the previous century, more than 85000 cases of human plague with 7000 deaths from 38 countries were officially reported. These figures are obviously underestimates of the real situation because of inadequate surveillance and reluctance of many countries to notify to WHO, for fear of adverse impact on trade and commerce. Maximum cases (6004) were reported in 1967 and minimum (200) in 1981. During the last decade, eleven countries namely Brazil, Democratic Republic of Congo, Kazakhstan, Madagascar, Mongolia, Peru, United Republic of Tanzania, USA and Vietnam have reported plague cases every year. Till 1995, Myanmar also reported cases virtually every year.

Seven countries from Asia namely China, India, Indonesia, Kazakhstan, Laos, Mongolia, Myanmar and Vietnam reported 6818 cases and 402 deaths during 1980 to 1999. These constituted almost 20% of global cases. Large outbreaks of plague occurred in India in 1954, 1963 and 1994.

Dr M Santamaria, Group Leader, Epidemic Bacterial Diseases, Department of Communicable Diseases, WHO/HQ described various facets of the social, economical and public health and its effects on trade and commerce,

as well as the possibility of deliberate use of this bacterium in causing harm to human beings. She informed the participants about the role WHO Collaborating Centres were playing in providing technical support to the countries.

4.2 Plague in India: Lessons Learnt

Dr Shiv Lal, Director, National Institute of Communicable Diseases of India (NICD) reviewed the two outbreaks of plague reported in India during the past decade. The lessons learnt from the first outbreak (1994) were translated into improvements in various fields of plague control and this was amply demonstrated in the rapid containment of the second outbreak (2002). Following were the lessons learnt:

- Need to strengthen surveillance;
- Use of standard case definitions as given by WHO;
- Strengthening laboratory services;
- Orientation of clinicians in endemic states;
- Availability of clear guidelines;
- Positive role of mass media;
- Treatment of patients at local sites;
- Compliance of chemoprophylaxis;
- Interstate coordination;
- Institution of appropriate control measures;
- Indigenous production of diagnostic kits, and
- Networking.

4.3 Role of Laboratory

Dr Rajesh Bhatia, WHO/SEARO, discussed the vital role that laboratories play in establishing diagnosis, determining appropriate treatment and in supporting plague surveillance. The reasons for the period of more than one week taken by laboratories to announce confirmed diagnosis were explained. The requirements of biosafety in the laboratory were also shared with the participants. The potential role of the deliberate use of plague bacilli as an instrument of bio-terrorism was also briefly discussed.

4.4 Role of the Media

Mr S Narendra, former Principal Information Officer to the Government of India & Information Adviser to the Prime Minister of India, together with Mrs.Harsaran Pandey**,** Information Officer-WHO/ SEARO, made a presentation on the role of the media and the interaction required between the health administrators and the media during an outbreak and during inter-epidemic periods.

The role of media in obtaining information from the technical professionals and health administrators and providing information to the public was discussed at length with the help of real illustrations and newspaper cuttings. Both print and electronic media now have extensive reach and since electronic media is on air for all 24 hours, the requirement of information has grown manifold and has to be met appropriately. The media was also advised to cross-check the information they obtained from independent reliable sources. The importance of mutual trust between the media and the health administrators was highlighted.

4.5 Environmental and Public Health Measures

Mr SR Rao, ex-Commissioner of Surat, who during the post-plague period in 1994/95, did a commendable job in implementing environmental measures to convert Surat into one of the cleanest cities of India, explained the various environmental and public health measures undertaken by him and his team. He stressed the importance of environmental measures in preventing outbreaks.

5. COUNTRY PRESENTATIONS

5.1 India

Dr RL Ichhpujani**,** Head, Zoonosis Division, National Institute of Communicable Diseases (NICD), Delhi, presented the infrastructure currently available in India for plague surveillance, data on various activities and highlights of the two recent outbreaks-1994 and 2002. NICD coordinates the plague surveillance activities all over India with five state plague control units

undertaking field work in their respective states. In all these five states, sylvatic plague foci have been detected.

Surveillance of plague in India comprises rodent, flea, bacteriological and sero-surveillance. NICD also has a Plague Surveillance Unit at Bangalore that coordinates the activities of three state plague control units (Tamil Nadu, Andhra Pradesh and Karnataka). This unit provides technical support to other areas as and when needed and also supports outbreak investigation.

The Central Plague Laboratory, located in NICD, has adequate infrastructure to establish diagnosis of plague. Some of the diagnostic reagents especially those for sero-surveillance are indigenously prepared, whereas a few such as gamma phage and conjugated antibody for fluorescent antibody test are imported. During the early 1990s, larger number of rodents were found to be having antibody to F1 antigen of *Yersinia pestis*. A massive earthquake is believed to have altered the ecology in western parts of India in 1990s and may have acted as an important factor for the plague outbreak of 1994 in Beed (Maharashtra) and Surat (Gujarat). This caused 876 suspected cases of plague with 54 deaths. The outbreak that occurred in Himachal Pradesh, India in February 2002 was also described. It was obvious that India has established adequate systems after the Surat outbreak to facilitate rapid diagnosis, investigation and containment of pneumonic plague.

The country report from India was supplemented by presentations by the representatives of five states of India, which are known to have plague foci among rodents : Gujarat, Himachal Pradesh, Maharashtra, Punjab, and Tamil Nadu**.** The presentations from Gujarat and Himachal Pradesh described the salient features of the 1994 and 2002 outbreaks respectively along with the response of the public health machinery to the outbreaks. All the presentations described the current surveillance activities and steps needed to strengthen the infrastructure and the skills.

5.2 Indonesia

Dr Giat Purwoatmodjo**,** Chief of Communicable Diseases Control, Central Java Province, Indonesia , gave an overview of the plague situation in Indonesia. The overall responsibility for planning, budgeting, supervision, and

evaluation of plague control programme in Indonesia rests with the Directorate-General, CDC & EH, Ministry of Health. At the provincial level, Provincial Health Officer, Vector-Borne Diseases Control manages the programme, whereas implementation at the district and sub-district levels is organized by respective health teams. The plague zones exist mainly between 1 000-1 500 meters elevation in villages concentrated within the high valley that extends between the summits of two volcanoes. These fall into three foci which are in Selo and Cepogo, Boyolali District, Central Java Province; Cangkringan in Sleman District, DI Yogyakarta and Tutur Nongkojajar in Pasuran District, East Java Province.

During the second half of the last century, six plague outbreaks were reported – in 1957, 1959, 1968, 1970 and 1997. The 1957 outbreak occurred at Boyolali. After an interval of 30 years, another outbreak occurred in Tutur Nongkojajar subdistrict, Pasuruan District of East Java Province in which 248 cases with 21 deaths were reported. In the same district, one case occurred in 1997 and plague bacilli were isolated from rodents in Sulorowo village.

Surveillance of plague in Indonesia comprises active and passive case findings for human surveillance, rodents and fleas. One plague laboratory exists in Boyolali and the reference laboratory in Yogyakarta has adequate infrastructure and skills to undertake recommended bacteriological and serological assays.

5.3 Myanmar

Dr Win Htin**,** Epidemiologist, Rodent Control Demonstration Unit, Department of Health, Yangon, described the plague situation in Myanmar. A Plague Special Unit exists at Mandalay and the national health laboratory provides diagnostic support. The Township medical officer is responsible for plague surveillance activities under the overall supervision of Special Diseases Control Units.

Large scale outbreaks of plague have not been reported in Myanmar in the recent past. Five outbreaks of pneumonic plague were reported in 1935, 1937, 1946, 1946 and 1974. Although plague is not considered a disease that

may acquire fearsome epidemic proportions, occasional bubonic cases do occur in Myanmar. The number of cases reported during 1991, 1992, 1993 and 1994 were 100, 528, 87 and 6 respectively with a total of four deaths. No human case has been reported since 1995. The epidemiology of plague shows marked seasonality. In the plains, cases occur during September to May with peak in the months of January and February, whereas in hilly areas cases are seen between May to December and peak around August.

6. FIELD VISIT

This was arranged on the second day through the Plague Surveillance Unit of NICD, Bangalore. The participants were taken to Attibelle village about 45 km outside Bangalore and saw the demonstration of rodent surveillance activities such as digging of fields and catching of wild rodents, their identification, combing of fleas from the rodents, collection of material and microscopy for identification of plague bacilli.

7. GROUP WORK

The participants were divided into two groups . Group-1 discussed, reviewed and revised the draft operational guidelines and prepared an outline of a Regional Plan of Action. The participants provided the Secretariat with modifications to be carried out in the draft guidelines along with a list of frequently asked questions to be included in the guidelines, along with their answers.

Group-2 discussed possible media strategies to strengthen the health-sector-media relationship. They looked at the roles both of media and the 'source' (health sector / community) in supporting plague activities, including dissemination of the right information.

8. CONCLUSIONS AND RECOMMENDATIONS

The deficiencies in the state of preparedness of Member Countries of SEAR against infections like plague and the tendency on the part of health administrators to downsize existing plague surveillance activities in some areas were noted with concern. The following recommendations were made:

8.1 To the Member Countries

(1) Maintenance of adequate infrastructure and resources for plague surveillance, outbreak preparedness and response should be ensured and the knowledge/skills/capacities of health professionals enhanced during inter-epidemic periods. Appropriate advocacy to achieve this at the highest political level should be undertaken.

(2) Community involvement should be ensured by integrating community participation in plague surveillance, prevention and control activities.

(3) Surveillance in known plague enzootic areas should be continued and strengthened and extended to other natural foci, so that new foci, if existing could be detected.

(4) Laboratories must be strengthened with trained manpower, uninterrupted supply of diagnostic reagents and quality assurance and networking between various laboratories promoted.

(5) Operational research must be encouraged to improve knowledge and understanding about various aspects of plague.

(6) Information should be regularly shared with the media through a designated agency and the media should be involved as partners for providing continuous education to the general public.

8.2 To WHO

(1) A regional operational guideline for surveillance, outbreak preparedness/response and management of plague should be produced and its use promoted in Member Countries of the SEA Region.

(2) Countries should be supported with technical resources for critical activities like surveillance, training, laboratory services, monitoring, inventory of WHO-recommended insecticides and information on insecticide resistance.

(3) Validation of indigenously produced, low-cost, user-friendly diagnostic tools should be facilitated.

(4) Frequent exchange of technical information and experience among the Member Countries should be facilitated, including organization of cross-border meetings and informal consultations.

(5) A media strategy should be developed for dissemination of information and containment of outbreaks and closer inter-action with the media promoted.

(6) Generic print and electronic material should be developed for use by the media as well as IEC/BCC experts and uploaded to the WHO website.

Annex 1

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Annex 2

PROGRAMME

Monday, 15 July 2002

0830 – 0900 Hrs.	Registration
0900 – 1000 Hrs.	Inaugural session
	Regional Director's Message and Opening Remarks by Dr N. Kumara Rai, Director, Deptt of Communicable Diseases, SEARO Objectives of the Consultation – Dr MVH Gunaratne, Regional Adviser, CSR/SEARO
	Introduction of Participants – Dr Derek Lobo, Deptt of Communicable Diseases/SEARO "Overview of Plague – Global and SEA Region" – Dr E. Tikhomirov, Temporary Adviser, SEARO
1030 – 1300 Hrs.	Presentations and Plenaries
	"Plague Situation – WHO Perspective and its Role" – Dr Maria Santamaria, WHO/HQ
	Country Presentations - India, Indonesia, Myanmar "Plague Outbreaks in India, 1994 and 2002 – Lessons Learnt" – Dr Shiv Lal, Director, NICD, New Delhi
	Update on Laboratory Diagnosis of Plague – Dr Rajesh Bhatia, Deptt of Communicable Diseases, SEARO
	Post-Plague Measures taken in Surat (1994) – Mr S.R. Rao, Former Commissioner of Surat.
1400 – 1530 Hrs.	"Plague in India" – State-wise Presentations - Himachal Pradesh, Gujarat, Maharashtra, Karnataka, Andhra Pradesh, Tamilnadu, and Punjab
1600 – 1700 Hrs.	Impact of Media During Outbreak Situation With Special Reference to Plague – Mr S. Narendra, Former Principal Information Officer to the Government of India, and Mrs H. Panday, IO/SEARO Panel Discussion on Plague Surveillance & Control – Main Issues/Problems/Possible Actions
1900 – 2100 Hrs.	Reception at the Hotel

Tuesday, 16 July 2002

0630 - 1500.00 Hrs	FIELD VISIT (Plague Surveillance Unit, Hosur, Karnataka) [Lunch at Field]
1530 – 1600 Hrs.	Formation of Groups / Introduction to Group Themes
1600 – 1700 Hrs	**Group Discussions** **Group I** – Plague Surveillance **Group II** – Outbreak Preparedness, Management & Response **Group III** – Media Strategies for Plague

Wednesday, 17 July 2002

0830 – 1000 Hrs.	Group Discussions Continued
1030 – 1130 Hrs	Preparation of Group Reports
1130 – 1230 Hrs.	Presentation of Group Reports
1400 – 1500 Hrs.	Synthesis of Group Reports & Recommendations
1500 – 1530 Hrs.	Valedictory