Integrated Disease Surveillance Project

DRAFT Environment Management Plan

Project Context

India has high incidences and frequent outbreaks of diseases like tuberculosis, malaria, cholera, plague, encephalitis, typhoid, measles, hepatitis and dengue. The Ministry of Health and Family Welfare (MOHFW), Government of India, has initiated the Integrated Disease Surveillance Project, to strengthen the backbone of information network for effective public health delivery system in the country. The project will cover the whole country with the objective of improving diagnostic facilities in public health laboratories.

Scope of the Project

The objective of the project is to support improved health outcomes by providing decision makers with specific timely information on selected priority health conditions and risk factors, so that preventative and control measures can be planned and implemented. The main components of the project are i) coordination and decentralization of disease surveillance activities; ii) strengthening of surveillance activities, especially at state and district levels; and iii) improved laboratory support to the surveillance system. The project will be implemented in phases across all the states and Union Territories.

Environmental Issues

Disease Surveillance Laboratories carry out testing for infectious and contagious diseases, such as malaria, typhoid, cholera and hepatitis, tuberculosis and HIV/AIDS. These laboratories therefore generate waste which includes infected human tissues and blood samples, microbes, discarded chemicals, sharps, etc. Such waste, if not managed properly, carries the risk of infection for waste handlers and to the larger community and is also a potential environmental hazard, through pollution of land, water and ground water. Although the amounts of waste generated from such laboratories is small, its varied and hazardous composition requires comprehensive management of the waste lifecycle, from source to disposal, to prevent adverse impacts on the environment and public health.

Adequate waste management in laboratories will not only improve overall environmental performance but also facilitate in providing a safe workplace for the laboratory personnel. In addition, laboratories have to comply with the environmental regulations of the Government of India, specifically the Bio-Medical Rules (prepared in 1998 and amended in 2000).

As part of a baseline assessment of laboratories carried out by an international team in 3 states (Tamilnadu, Maharashtra and Uttar Pradesh), a review of waste management practices was carried out. Key findings included:

- There is little awareness among the staff at State, district or peripheral laboratories of the existing GOI regulations and of good waste management practices.
- Standard safety precautions are not followed in laboratory operations
- At the district and peripheral levels, adequate waste management practices are not being implemented.

However, the team also noted that Maharashtra has instituted basic processes of bio-medical waste management, under the existing Health System Development Project, and this can provide an initial framework in that state for dealing with laboratory waste. In addition, the Indian Council of Medical Research has developed and disseminated a document on bio-safety and hazardous waste (Standard Bio-safety Guidelines), which addresses safety for health workers and the importance of implementing the concepts of universal precautions and proper infectious waste disposal.

Actions to be taken under this project to address these issues.

The main tool to be developed under the project, to address safety and waste management issues are Standard Operating Procedures for Laboratories. Under the project, Operations Manuals have already been prepared which focus on, among other technical topics, good laboratory practices, decontamination and Bio-safety issues. Given the related nature of the activities for ensuring good practices in laboratory operations, the SOPs on waste management will be integrated into the Operational Manuals for the laboratories.
(Annex 1 provides a draft outline for an SOP. The USEPA "Environmental Management Guide for Small Laboratories" would also be a good reference document.)

A Waste Management Program will also be formulated to define the processes required for dissemination and implementation of the SOPs at laboratory levels and for monitoring. The SOPs and WM Program will be finalized through a consultative process, involving the directors and operators of the national-owned and private laboratories to ensure a feasible and pragmatic program.

Project Implementation

A Central Surveillance Unit (CSU), which is to be established at the MOHFW will be the responsible authority for project implementation at the national level. Surveillance Committees and Surveillance Units will be established at the state and district levels for implementation and monitoring of project activities. Waste management activities will be included as part of the laboratory support and training components of the project.

At the laboratory level, the responsibility for the implementation of the SOPs will rest on the appropriate officer in-charge of the laboratory.

Key Activities under the project:

1. Undertake a baseline assessment to review the health and safety and environmental practices and assess the quantum of waste generated. (This will build wherever possible on broader health care management and related activities, ongoing in a number of states.)

2. Develop draft Standard Operating Procedures (SOPs) as guidelines for disease surveillance laboratories.

3. Formulate a draft Waste Management (WM) Program for the dissemination of the SOPs, awareness and training at laboratory levels, including the roles and responsibilities of various parties, timetable and an estimate of the costs (investment and operating) and sources of funds for implementation. The initial program will be subject to refinement and adjustment in the initial stages of implementation, taking into account the overall health care waste management system in each state.

4. Organize a national workshop to discuss the assessment findings and the draft SOPs and the WM Program. In addition to representatives from MOHFW and state authorities and municipal bodies, the group should include technical experts, representatives from WHO, NGOs and industry.

5. Design and implement a training program for the implementation of the SOPs. The training will be divided into modules appropriate for the different responsibilities and skills of different groups, such as Medical Officers, laboratory personnel, technicians etc. The training on WM practices will be incorporated within related training being proposed under the project.

6. Support the implementation of SOPs in the laboratories in the various states, in phases as appropriate. The provision of basic equipment and infrastructure will be in accordance with the wider laboratory upgrading activities under the project and under a similar timetable.

7. Establish an effective monitoring and reporting system.

Costs and resources

The project will fund the CSU, including specialist technical support on issues such as waste management. The project will not provide for the on-going running costs of the SOPs, beyond support with the initial start up. It is therefore critical that implementation plans at laboratory levels are designed to be consistent with the level of resources that is expected to be available on a regular basis. More details on the estimated budget of the WM component will be provided after appraisal.

Monitoring

The implementation of the waste management program will be subject to the same internal quality assurance systems and external audit provisions as apply to each laboratory under the project.

Schedule of Implementation

Task	Output	Responsibility	Time-schedule
Undertake baseline survey	Information on scale of WM issues at different types of facility.	State authorities	**1st 3months of Year 1** (of each phase of implementation)
Draft Standard Operating Procedures for different types of facilities	Draft documents	CSU	**1st 4months of Year 1**
Formulate a draft Waste Management (WM) Program	Draft documents	CSU	**1st 4months of Year 1**
National workshop to discuss assessment findings, draft SOP and discuss proposed implementation	Consensus on scope and content of SOPs	CSU	by **1st 8 months of Year 1**
Finalize SOP, dissemination and initial implementation	Set of SOPs, applicable to different circumstances	CSU, state authorities	**Before end of Year 1**
Develop training module, schedule, manual and checklists.	Set of standard training material for different audiences	CSU, with technical support	**Before end of Year 1**
Implementation of training program		State authorities	Starting from year 2, aligned with related project training; to be implemented in phases
Monitoring and evaluation	To be incorporated into overall project monitoring		

Annexure I

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Standard Operating Procedures

1. General housekeeping rules:
   - Routine inspection, cleaning, maintenance, testing, calibration and standardization of instruments
   - Actions to be taken in response to equipment failure
   - Analytical data methods
   - Definition of raw data
   - Sample handling and accountability
   - Data handling, storage, and retrieval
   - Receipt, identification, storage, mixing and method sampling of test and control articles
   - Record keeping, reporting, storage and retrieval of data
   - Coding of studies, handling of data, including the use of computerized data systems
   - Storage and maintenance of microbial cultures
   - Maintenance of sterility room
   - Special handling procedures and storage requirements

2. Protective Equipment for Personnel

3. Health and safety precautions

4. Waste disposal rules

5. Engineering Ventilation Controls (Fume hood use)

6. Specialized training required

8. Spill clean-up, accident procedures and emergency first-aid procedures

9. Performance acceptance criteria, recommended corrective actions, and a template for continuous entries of test results and corrective actions,

10. Operation of “quality assurance” personnel in performing and reporting study audits and inspections

11. Approvals Required

12. Other relevant comments: (including location of SOP and translated versions)

13. Responsible officer and contact details: