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**INFECTION CONTROL AND WASTE  
MANAGEMENT PLAN  
FOR  
NATIONAL AIDS CONTROL PROGRAM**

**NATIONAL AIDS CONTROL ORGANIZATION,  
MINISTRY OF HEALTH & FAMILY WELFARE (NACP-III)  
GOVERNMENT OF INDIA**

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## **ABBREVIATIONS USED**

AIDS	Acquired Immune Deficiency Syndrome
ART	Anti Retroviral Treatment
CHC	Community Health Centre
CSW	Commercial Sex Worker
DMA	Delhi Medical Association
FRU	First Referral Unit
HCW	Health-Care Worker
HIV	Human Immune Deficiency Virus
IC-WM	Infection control and Waste Management
IC	Infection Control
NACO	National AIDS Control Organization
NACP	National AIDS Control Program
PCCs	Pollution Control Committees
PHC	Primary Health Centre
PEP	Post Exposure Prophylaxis
PPE	Personal Protective Equipment
PPTCT	Prevention of Parent To Child Transmission
RCH	Reproductive and Child Health Care
SACSs	State AIDS Control Societies
SPCBs	State Pollution Control Boards
STD	Sexually Transmitted Diseases (synonymous with STI)
STI	Sexually Transmitted Infections
TI	Targeted Interventions
TOR	Terms of Reference
UNAIDS	United Nations Program on HIV/AIDS
UP	Universal Precautions
VCCTC	Voluntary confidential Counseling and Testing Centre
WB	World Bank
WM	Waste Management

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## **1.0 EXECUTIVE SUMMARY**

The National AIDS Control Program Phase III (NACP-III, 2006-2011), aims to support the Government of India in achieving its goal of halting and reversing the HIV/AIDS epidemic by 2011 through integration of prevention and care, support and treatment programs. It has set itself an ambitious timeframe in proposing to achieve the target of halting and reversing its HIV/AIDS epidemic by 2011 (instead of 2015), but the program is very much seen as part of a longer term plan to realize the 6<sup>th</sup> MDG and complete the long term reform agenda by 2015.

Provision of preventative and treatment services under the NACP-III is expected to generate infectious bio-medical wastes such as sharps (infected needles and syringes, surgical equipment, IV sets) infected blood, HIV test kits used in VCT centers, blood banks and laboratories and pharmaceutical wastes. These wastes, if not managed and disposed properly, can have direct environmental and public health implications. Healthcare workers (HCWs) are at great risk as most blood-borne occupational infections occur through injuries from sharps contaminated with blood through accidents or unsafe practices. Systematic management of such clinical waste from source to disposal is therefore integral to prevention of infection and control of the epidemic.

In this context, governments have an obligation to implement the provisions of the 2001 United Nations Declaration of Commitment on HIV/AIDS, which include a commitment to strengthen health-care systems and expand treatment, as well as to respond to HIV/AIDS in the world of work by increasing prevention and care programs in public, private and informal work-places. The NACP-III is also as a Category “B” project under the World Bank’s Operational Policy for Environmental Assessment, which implies that the potentially negative impacts can be managed through a systematic and comprehensive plan for infection control and waste management.

NACO commissioned a study to focus on the risk of HIV transmission in health-care facilities owing to inadequate and unsafe infection control and waste management practices and to assesses current infection control and waste management practices. The study employed primary and secondary qualitative and quantitative data and included a field based survey in 3 states. Based on the findings, the study concluded that at the SACS level, awareness and implementation of infection control practices is reasonably good, and the healthcare workers are provided training and consumables to perform their tasks. However, the waste management component remains weak, as this component tends to be dependent on the host facility in which the SACS are located. The practices in the Government-run facilities were seen to be inadequate, with limited training and insufficient availability of consumables. Systems for reporting, monitoring and evaluation were found to be weak at both categories of facilities.

Infection Control and waste management is a cross-cutting component, and is the converging point for environment-health nexus for all healthcare programs. The integrated approach is applicable even if the diseases are dissimilar, as it combines the common, or cross-cutting aspects of disease control, such as training, infection control and advocacy.<sup>1</sup> An integrated approach to infection control and waste management will be cost-effective, will ensure standardization and cohesive and effective implementation. The proposal to subsume SACS under the State Health Society will certainly provide the appropriate foundation for an integrated approach to IC-WM.

The Infection Control and Waste Management (IC-WM) Plan is based on the premise that the NACOP-III will take steps to improved implementation coordination with the other health programs such as RCH, Tuberculosis Control and with the overall program implemented by the Department of health.

The IC-WM Plan details the various steps for waste management as required under Government of India's Biomedical Waste (Management and Handling) Rules, including waste segregation, treatment and disposal. The Plan also highlights infection control

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<sup>1</sup> WHO-ROEM, Division of Communicable Disease Control, Newsletter 2002

measures to be practiced by healthcare workers involved in testing and treatment activities. A generic Action Plan and Time-frame for implementation are provided, which can be used by the state level authorities for developing their own schedule for action.

Recognizing the need for integration in this component, the Plan recommends integration of activities between the SACS, the DOHFW and the nationally funded programs such as Reproductive and Child Health, Tuberculosis Control etc.

## **2.0 PROGRAM DESCRIPTION**

### **2.1 Introduction**

According to the 2006 UNAIDS report on the global AIDS epidemic, an estimated 65 million people have been infected with HIV, of whom some 25 million have died since the start of the epidemic 25 years ago. The rate of new HIV infections continues to climb every year, with an estimated 4.1 million people having been infected in the twelve months ending December 2005. Globally, the total number of people living with the virus also continues to grow, reaching 38.6 million at the end of 2005 and trends indicate that left unchecked the epidemic will continue to increase.

**In other words, at this stage of the global AIDS epidemic there are more HIV infections every year than AIDS-related deaths.**

### **2.2 HIV/AIDS Control Program In India**

The identification of HIV positive individuals in 1986 resulted in the Government forming the National AIDS Committee (NAC) headed by the Union Health Secretary. The National AIDS Control Program (NACP), focusing on increasing awareness of HIV/AIDS, screening of blood for HIV and testing of individuals practicing risk behavior was launched in 1987.

**NACP I**, launched during the 8<sup>th</sup> Five Year Plan (1992-1997), had the ultimate objective to slow the spread of HIV in India so as to reduce the morbidity, mortality and impact of AIDS. It was later extended to 1999.

**NACP II** (1999-2005) was formulated keeping in mind the shortcomings of NACP I as well as with the following key objectives:

- ⌚ To reduce the spread of HIV infection in India and
- ⌚ To strengthen India's capacity to respond to HIV/AIDS on a long term basis

**NACP III** (2006-2011) is currently in the final stages of planning. The goal of NACP III ("Program") is to **halt and reverse** the epidemic in India over the next 5 years by

integrating programmes for prevention and care, support & treatment. To achieve this goal, NACP III will pursue four main objectives:

- 1) Prevention of new infections in high risk groups and general population through:
  - a) Saturation of coverage of high risk groups with targeted interventions (TIs)
  - b) Scaled up interventions in the general population
- 2) Increasing the proportion of people living with HIV/AIDS who receive care, support and treatment.
- 3) Strengthening the infrastructure, systems and human resources in prevention and treatment program at the district, state and national levels.
- 4) Strengthening a nation-wide strategic information management system

### **2.3 Environment and Public health impacts of the program**

Provision of preventative and treatment services under the HIV AIDS project is expected to generate infectious bio-medical wastes such as sharps (infected needles and syringes, surgical equipment, IV sets) infected blood, HIV test kits used in VCT centers, blood banks and laboratories and pharmaceutical wastes. These wastes, if not managed and disposed properly, can have direct environmental and public health implications. Healthcare workers (HCW) are at great risk as most blood-borne occupational infections occur through injuries from sharps contaminated with blood through accidents or unsafe practices. Systematic management of such clinical waste from source to disposal is therefore integral to prevention of infection and control of the epidemic.

In this context, governments have an obligation to implement the provisions of the 2001 United Nations Declaration of Commitment on HIV/AIDS, which include a commitment to strengthen health-care systems and expand treatment, as well as to respond to HIV/AIDS in the world of work by increasing prevention and care programs in public, private and informal work-places.

Under NACP-II, a number of guidelines were developed and disseminated, which included sections on good practices for infection control (IC) and waste management (WM). But as there was no comprehensive Plan of Action for IC- WM, implementation

has been sporadic and partial. However until now, there had been no monitoring or reporting systems established for this component or an evaluation of implementation.

The NACP-III, for the first time, has been classified as Category “B” as per the World Bank’s Operational Policy on Environmental Assessment (OP 4.01). Category B projects imply that the potential adverse environmental impacts of the program are site-specific and in most cases mitigatory measures can be designed readily and appropriately. NACP-III is developing an Infection Control and Waste Management Plan which defines a structured and systematic approach to institute best practices in managing health and environmental risks effectively.

### **3.0 CURRENT LEGAL, INSTITUTIONAL, AND ADMINISTRATIVE FRAMEWORK RELATED TO HEALTHCARE WASTE MANAGEMENT**

#### **3.1 Policy Framework**

The launch of NACP II was preceded and followed by a number of policy declarations and initiatives. While these are not directly related to IC-WM nevertheless, these developments provide a supportive policy context for HIV/AIDS prevention and control activities. It is believed that NACP III will derive support from these policy measures and aim to fulfill the expectation generated by the commitments given by the Government of India to Indian citizens and the international community.

The important policies and declarations include:

☐ India is a signatory to the Declaration of the Paris AIDS Summit in 1994 that provides for greater involvement of HIV-positive people and the UNGASS Declaration of Commitment on HIV/AIDS in 2001

☐ The parameters of health sector development were laid out in *The National Population Policy in 2000* followed by the *10<sup>th</sup> Plan document and the National Health Policy 2002*.

☐ *The National AIDS Prevention and Control Policy, 2002(India)* gave shape to the vision of the country of AIDS prevention and control. Subsequently in 2004 the policy for Anti Retroviral Treatment (ART) was formulated.

☐ *The National Blood Policy* was announced in 2003. The policy was followed by an action plan for blood safety.

☐ *The National Youth Policy (2003)* which laid emphasis on health of adolescents and the youth

☐ The **Parliamentary Forum** on HIV/AIDS was launched on 11<sup>th</sup> May 2002, followed by a declaration in its first National Convention in 2003. Many states have also launched Legislators' Forum to strengthen the state level response.

☐ During 2005, the Govt. of India launched a **National Rural Health Mission** and the RCH phase-II envisaging active participation of PRIs and civil society groups and a convergence of HIV/AIDS and RCH.

☐ Culminating this process was the decision made by the Prime Minister to head the **National Council on AIDS in 2005**.

### **3.2 Legal Framework**

In India, the following legislations/guidelines have been enunciated for healthcare waste management:

#### **a) The Environment Protection Act (EPA) -1986**

The EPA is an umbrella legislation designed to provide a framework for environmental protection of all activities.

#### **b) Bio-medical Waste (Management and Handling) Rules - 1998:**

The Bio-medical Rules (“Rules”) came into force in July 1998, under the auspices of the Environmental Protection Act, 1986. The Rules were amended in June 2000 and later in September 2003. The Rules form the legal framework for the collection segregation,

transportation, treatment & disposal of biomedical waste, throughout the country. The Rules define *bio-medical waste* as "any waste which is generated during diagnosis, treatment or immunization of human beings or animals or in research activities pertaining thereto or in production or testing of biological and including categories mentioned in schedule-I of the Rules" (table 1 below). The Rules, besides identifying the waste categories, also specify the possible treatment and disposal methods in addition to the standards laid down for the same. Further, according to the rules, wastes have been segregated into 10 different categories and their treatment and disposal options provided. The Rules make it mandatory for healthcare facilities providing treatment/service to 1000 or more patients per month to document and report discrete activities related to IC-WM including waste categorization, segregation, disinfection, collection, storage, transport and disposal. However, there is no requirement for a mandatory waste management plan at these facilities.

#### **c) National Guidelines on Hospital Waste Management**

The Ministry of Health and Family Welfare (MoHFW), GoI, has laid down the National Guidelines on Hospital Waste Management in March 2002. These guidelines apart from covering the aspects included in the Bio-Medical Rules, also lay down recommendations for safety measures, training, management & administration functions.

#### **d) Drugs and Cosmetics Rules - 1945:**

The first amendment to MOHFW's Drug and Cosmetic Act was made in January 1993, which related to collection, storage, processing and distribution of whole blood, blood components by blood banks and licensing of all blood banks was made mandatory. Hepatitis C virus antibody testing was made mandatory by a second amendment in January 2001. Subsequent amendments in 2001 required the licensing of blood banks. Blood storage centers run by First Referral Unit, Community Health Centres, Public Health Centres or any hospital were exempted from obtaining license.

There are two related guidelines from the Reproductive and Child Health (RCH) program which should be mentioned:

- **Hospital Waste Management Guidelines for Universal Immunization Program:** Central Pollution Control Board has published a manual documenting hospital waste management guidelines and their implementation in the Universal Immunization Program.
- **Guidelines on Auto-Disable Syringes Use and Disposal:** Auto-Disable (AD) syringes have been introduced in the country as part of the Universal Immunization Program. Accordingly, the MoHFW has laid down the National Guidelines on use and disposal of AD syringes.

Table 1:

<b>Bio-medical Waste Management Rules – Schedule I</b>		
<b>Category</b>	<b>Waste Category</b>	<b>Treatment and disposal</b>
1	Human Anatomical Waste (human tissues, organs, body parts)	Incineration / deep burial
2	Animal Waste (animal tissues, organs, body parts carcasses, bleeding parts, fluid, blood and experimental animals used in research, waste generated by veterinary hospitals colleges, discharge from hospitals, animal houses)	Incineration / deep burial
3	Microbiology & Biotechnology Waste (wastes from laboratory cultures, stocks or specimens of micro-organisms live or attenuated vaccines, human and animal cell culture used in research and infectious agents from research and industrial laboratories, wastes from production of biologicals, toxins, dishes and devices used for transfer of cultures)	Local autoclaving / microwaving / incineration
4	Waste sharps (needles, syringes, scalpels, blades, glass, etc. that may cause puncture and cuts. This includes both used and unused sharps)	Disinfection (chemical treatment/autoclaving /microwaving and mutilation/shredding)
5	Discarded Medicines and Cytotoxic drugs (wastes comprising of outdated, contaminated and discarded medicines)	Incineration, destruction and drugs disposal in secured landfills
6	Solid Waste (Items contaminated with blood, and body fluids including cotton, dressings, soiled plaster casts, lines, beddings, other material contaminated with blood)	Incineration / autoclaving / microwaving
7	Solid Waste (wastes generated from disposable items)	Disinfection by

	other than the waste sharps such as tubings, catheters, intravenous sets etc).	chemical treatment / autoclaving / microwaving and mutilation shredding
8	Liquid Waste (waste generated from laboratory and washing, cleaning, house-keeping and disinfecting activities)	Disinfection by chemical treatment and discharge into drains
9	Incineration Ash (ash from incineration of any bio-medical waste)	Disposal in municipal landfill
10	Chemical Waste (chemicals used in production of biologicals, chemicals used in disinfection, as insecticides, etc.)	Chemical treatment and discharge into drains for liquids and secured landfill for solids

Notes: (1) Chemicals treatment using at least 1% hypochlorite solution or any other equivalent chemical reagent. It must be ensured that chemical treatment ensures disinfection.

(2) Mutilation/shredding must be such so as to prevent unauthorised reuse.

(3) There will be no chemical pretreatment before incineration. Chlorinated plastics shall not be incinerated.

(4) Deep burial shall be an option available only in towns with population less than five lakhs and in rural areas.

### 3.3 Institutional and Administrative Framework

The National AIDS Control Organization (NACO) was established in 1992 as unit within the MOHFW to lead the country's response to the epidemic of HIV, as part of the institutional arrangements mandated for NACP I. As an apex agency and a nodal point, NACO is entrusted with the responsibility of steering, supporting, financing, coordinating and overseeing the NACP. The National Council on AIDS, National AIDS Committee and National AIDS Control Board are the three entities which oversee NACO.

The State AIDS Control Society (SACS) are registered, autonomous societies that have been set up in each state and Union Territory of India for effective implementation of the AIDS control program. Each SACS receives funding from NACO for focus areas of blood safety, surveillance, training, IEC and targeted intervention. As the designated state agency for implementing the NACP in the States, SACS functions more or less as the State counterpart of NACO. It is responsible for steering, supporting, financing,

overseeing and coordinating the NACP in the State. NGOs form an important element of targeted intervention and are representative of the participatory nature envisaged for SACSs. SACS undertake HIV prevention, care support and treatment activities through the public health system as well as through targeted interventions implemented through NGOs with groups at high risk of contracting HIV. Thus while the bulk of VCTCs, PPTCTs, Blood Banks, ART centres and STD clinics are in the public sector, targeted interventions are implemented through a large number of NGOs that who work with the high risk groups. For the most, these NGOs also make testing and treatment services available through the same public networks

The SACS have a well-defined structure with a Project Director. The organograms for large, medium and small states have been clearly articulated as defined below:

*Large States* (population >50 million): These have separate Joint Directors (JD) appointed for overseeing Blood Safety, IEC, Surveillance and Training related activities. Each JD in turn has a Deputy Director (DD) who are further responsible for the activity. IEC also has an Assistant Director (AD) condom promotion (CP) and a Documentation and Publication Officer (DPO). For Targeted Intervention, an Additional Project Director (ADP) provides oversight to DDs and ADs for STD and VCT. An NGO advisor also reports to the ADP.

*Medium-sized States* (population between 10-50 million): The organogram is similar to that of large states except that there is a single JD responsible for surveillance and training. There is no DD responsible for IEC and the AD (CP) and DPO directly report to the JD.

*Small States* (population <10 million): The main difference for small states is that there are no ADs. DDs are responsible for Blood Safety, IEC, Surveillance & Training and Targeted Interventions. There is only one DD who takes care of STI and VCT.

Each SACS is responsible for ensuring the smooth running of these facilities including recruitment of personnel (doctors/counselors/technicians), identification and fulfillment of training needs, procurement of necessary equipment (e.g. disposable needles, needle cutters, gloves, chemicals), etc. Each SACS facility reports to the relevant JD/APD (via

AD and DD) who in turn reports to the SACS Project Director, who finally reports to NACO.

The state medical services fall under the purview of the Department of Health and Family Welfare (DOHWF). Although SACS is also run by the Government, it is important to differentiate between Government and SACS facilities. In most instances the SACS run facilities are located within the premises of a state/ Union Territory (UT) government-run medical facility. While the Government facilities have a focus on complete health and family welfare, SACS facilities, located within these host facilities, are focused only on HIV/AIDS related activities. Therefore while segregation and treatment of infected waste are practiced by the SACS HCWs, the responsibility of its proper disposal depends on the host Government facility within which it is located. Additionally capacity building and training exercises for HCW tend to be compartmentalized according to the different sources of financing. Therefore an IC-WM plan prepared for NACP tends to be limited to only the SACS-run facilities and its comprehensive implementation will therefore be dependent on a coordinated and holistic approach taken by the host facility.

However, in order to achieve standardization, economies of scale as well as to avoid duplication, it is being proposed that NACP-III will ensure that implementation of IC and WM training programs in a coordinated and holistic way across staff and financing sources. In some States, it is expected that these SACS have either already been subsumed under the State Health Society, or will be during the life of the project. This will certainly provide the appropriate foundation for an integrated approach to IC-WM.

The State Pollution Control Boards (SPCBs) in states and Pollution Control Committees (PCCs) in UT are responsible for the enforcement and compliance monitoring of the Bio-Medical Rules.

#### **4.0 BASELINE DATA AND CURRENT PRACTICES OF IC-WM**

##### **4.1 Sites and Facilities Visited and Stakeholders Consulted**

The information relating to current practices enumerated below is based on site visits to 33 facilities in Andhra Pradesh (High-Risk, Southern State), West Bengal (Moderate-Risk State, Eastern State), Nagaland (High-Risk, North-Eastern State). Additional consultations were held in Maharashtra (Good Practice Review) and with the IMA in New Delhi.

The facilities visited included Primary, secondary and tertiary health-care facilities (government-run), VCCTCs, PPTCTs, Blood banks, ART and STD Clinics (including associated laboratories). The stakeholders consulted during site visits included:

- ③ State AIDS Committees
- ③ Secretary, Department of Health and Family Welfare
- ③ Director- Health Services at the state level
- ③ District Medical Officer at the district level
- ③ Director -Medical Education at the state level
- ③ Health-care workers at blood banks, VCCTCs, PPTCTs, blood banks, ART and STD clinics,
- ③ primary/secondary/tertiary health-care facilities
- ③ Local communities, including patients, peer educators, commercial sex workers
- ③ NGOs
- ③ Waste management facilitators (private organizations)

The complete details of sites and facilities visited, as well as the stakeholders consulted have been listed at Annex 3.

Both primary as well as secondary qualitative and quantitative data were collected from the sites visited. Primary data collected included details of Facility Overview, Infection Control, Bio-medical and Sharps Waste Management. The secondary information collated included review of the Manual for Control of Hospital Associated Infections published by NACO, Manual on Waste Management by SACS, health care standard operating procedures, IEC material, etc.

## 4.2 Prevailing IC-WM Practices

### Survey Findings:

The findings from the site visits and primary data collection have been grouped in two categories:

- ③ Government-run Facilities (“Government Facilities”) that include primary, secondary and tertiary healthcare facilities
- ③ SACS-run Facilities (“ SACS Facilities”) that include VCTC, PPTCT, blood banks, ART and STD clinics

### a) *Government-run Facilities*

#### ③ **Overview**

Most of the government-run facilities surveyed had poor standards of hygiene and inadequate IC-WM practices. Although awareness of the Biomedical Rules and Hospital Waste Management Guidelines is high (over 90% of the facilities visited), lack of funds, irregular supply of barrier protection and PEP and human resource shortage were cited as the main reasons for poor implementation of IC-WM practices. Though more than 90% of the facilities visited were aware of the applicable statute and guidelines, specific compliance requirements were not known to the majority of the HCWs interviewed.

In most of the facilities surveyed, IC-WM committees had not been constituted. Even in those facilities in which IC-WM committees were present, the authorities admitted that these were not very active. In most instances the Medical Superintendent, Nursing Superintendent and Microbiologist were found to be members of the IC-WM committees. However, in certain cases the District Health and Family Welfare and Sanitation Committee was responsible for taking care of IC-WM related issues.

The training requirements of the district and tertiary hospitals are met by the DHS since this falls under DHS’ jurisdiction. DHS arranges for IC-WM training of the hospital staff as well as for annual refresher training. A serious lacuna in the training process is that it is imparted mostly to the senior doctors and nurses which is then not transmitted to other

HCW in the chain of custody due to the absence of a systematic training plan. As a result, good practices related to IC-WM do not get disseminated to other healthcare and paramedical HCW such as junior nurses, ward boys, Class IV and housekeeping personnel. Not only does this enhance the risk of infection of each HCW, such selective training prevents the implementation of comprehensive IC-WM practices in a healthcare facility. Few or none IEC material were observed in most of the facilities visited. Additionally, there is no evaluation process to assess the quality of training imparted and its outcome in terms of improved IC-WM practices.

### ③ **Employment of Infection Control Measures**

The general assessment was that a large number of nurses, paramedics and Class IV staff were found to be ignorant of good practices. Since these HCW also work with HIV/AIDS patients, the lack of availability of barrier protection, disposable needles and PPE becomes a critical issue. In several instances the staff admitted to not using gloves during blood handling procedures. They also admitted to using the same disposable syringe for several patients and thus needle recapping was a common practice. AD syringes could not be observed at any of the facilities visited. On the contrary glass syringes were being used at several places for which the general practice is reuse after sterilization.

Needle Cutters were rarely available and were mostly electric ones which are prone to being underutilized during power cuts or being damaged due to voltage fluctuations. It was observed that HCW either did not utilize the needle-cutters or instead broke the needles with their bare hands, or by using a heavy object, or even not at all. In majority of the instances the intact syringes or mutilated needles were not immersed in 1% hypochlorite solution as required.

HCW in several of the secondary and tertiary facilities did report accidents in the prescribed format (Form III of Biomedical Rules) due to needle stick injuries. However, the incidence of reporting was low, with only 30-40% of the total injuries being reported. In most facilities the HCWs had not been vaccinated against HBV.

③ **Employment of Waste Management Measures**

In PHCs, no waste segregation and disinfection practices could be observed. The general standards of sanitation and hygiene were found to be very low. Infectious waste (blood-soaked cotton, used un-mutilated syringes, worn gloves) was seen scattered under the patients' beds, in the corridors and washrooms. All infectious and non-infectious waste was observed to be collectively disposed in shallow open pits.

In secondary and tertiary facilities partial waste categorization and segregation practices were observed though awareness of statutory requirements was largely absent. Even if known, non-availability of appropriately colored poly-bags and bins, leads to improper segregation red waste is generally handled without any barrier protection. The waste disposal was primarily dependent on the availability of incinerating facility in the vicinity. In case no such facility is available, the waste is disposed by burning on the premises. The ash thus generated was found to be disposed along with other municipal waste. In most of the facilities visited, the administrative incharge, mostly the MS or RMO is responsible for ensuring compliance. In turn, the management of waste disposal, accident reporting and reporting to SPCB/PCC gets delegated to different personnel resulting in lack of coordination in the overall management of IC-WM.

*b) SACS-run Facilities*

③ **Overview**

In general, all SACS facilities demonstrated awareness of and adherence to good IC-WM practices, partial or complete. These facilities typically had regular training, sufficient funds, regular supply of barrier protection and PEP and human resources. Awareness of NACO publications was also high as these form the basis of training and functioning of these facilities. Since the funding of SACS facilities is separate from that of Government facilities, hence selective training and equipment availability could be observed.

Training for IC and WM is primarily conducted by SACS, the oversight for which is provided by JD-Training. This training is extended to senior doctors and nurses employed by Government facilities, as well as to VCCTC/PPTCT/ART/blood bank counselors and

technicians employed by SACS. The HCW employed by SACS necessarily undergo induction training before being allowed to practice. The duration of induction training is different based upon the job profile e.g. induction training for counselors is for 7 days whilst for the technicians it is for 3 days. Additionally, reorientation and monitoring occur on a periodic basis at least biannually.

### ③ **Employment of Infection Control Measures**

Due to systematic training and re-training, the awareness is significantly higher in these HCW. SACS have been providing barrier protection, PEP, disposable needles and needle cutters (electrical type) on a regular basis. Accident Reporting is also observed to a large extent and most workers had been vaccinated against HBV.

### ③ **Employment of Waste Management Measures**

In most instances waste segregation was being carried out in compliance with the statutory requirements. However, it was also observed that the attention to detail given for IC measures was not being extended to WM. For instance, in PPTCTs whilst technicians wore gloves, and ensured mutilation of needles, the needle was not immersed in hypochlorite solution. Further, it was seen in VCTCs that blood samples need to be immersed in 1% hypochlorite if non-reactive and 5% of the same solution of reactive. However, the two solutions of different strengths were not available. Also, the blood bags need to be immersed in hypochlorite solution for at least 30 minutes. It was found that while the blood bags were being segregated, the hypochlorite solution was either absent or in quantities insufficient to immerse the blood bags. In one instance, due to high numbers, the blood bags were spilling out of the tub in which they were being discarded.

The fact that the waste disposal for SACS facilities is dependent on the host facility's disposal practices further compounds the problem of waste management. In instances where waste management is being carried out by third parties (such as at Common Treatment Facilities) there is a higher degree of conformance to Biomedical Rules.

## **5.0 RECORD OF CONSULTATION/DISCUSSION WITH RELEVANT STAKEHOLDERS**

Two types of consultations were held during the course of this study:

- ③ Consultation with individual stakeholders during the site visits
- ③ Consultation convened by the NACP III design team and facilitated by Society for Participatory Research in Asia (PRIA) wherein key stakeholders were invited to New Delhi to discuss the recommendations made in this study.

These have been provided at Annex 3.

The IC-WM Plan proposed below is based on existing documentation, observations during site visits, review of existing practices amongst other health initiatives (notably, RNTCP and RCH) and discussions and consultations with stakeholders. The Plan builds upon existing documentation, in particular the *HIV Testing Manual*, *Blood Safety Guidelines* and Standard Operating Procedures prescribed in the *Manual for Control of Hospital Associated Infections* published by NACO. It is envisaged that the Plan shall not duplicate previous efforts but rather help to strengthen the gaps in the published guidelines especially with respect to establishment, monitoring and evaluation. Most of the NACO Guidelines however, have detailed instructions for Infection control but not for waste management, which is an integral part of IC-WM.

## **6.0 INTEGRATED APPROACH TO IC-WM**

It is pertinent to point out here that since this plan is targeted at the NACP, hence, its implementation may be limited mostly to SACS facilities and some NGOs. As discussed earlier, the study recognizes the limitations of the outreach of the Plan due to given the institutional framework of the healthcare system. However, as suggested in a preceding section, the host facility may choose to integrate the IC-WM plans of other National Health and Family Welfare programs (e.g. RNTCP II and RCH II) so that uniform IC-WM practices are observed across all sections of the host facility. This links well with one of the objectives of the National *AIDS Prevention and Control Policy* which is to bring in horizontal integration at the implementation level with other national programs

like RCH, TB Control, Integrated Child Development Scheme and with the primary health care system. Additionally, the Plan attempts to echo the guidelines laid down in RNTCP II and RCH II IC-WM plans on common issues so that it is easier for the host facility to integrate these IC-WM plans in the broad framework of its IC-WM activities.

Both RCH and RNTCP have well-documented IC-WM plans with allocated funding for training and equipment and minor civil works such as construction of deep burial pits. Some examples of joint efforts for IC-WM related issues have been provided below:

**i. Revised National Tuberculosis Control Program (RNTCP)**

With 60 percent of people living with HIV/AIDS developing TB, the National AIDS Control Program (NACP) has re-strategized and expanded the service delivery mechanisms, under which 14 states are implementing the collaborative activities of HIV-TB co-ordination program. The two main areas of coordination include:

- ③ Training Program for Service Providers in RNTCP and NACP, such that all NACP service providers and staff of RNTCP apply Universal Precautions control to prevent further spread of TB and HIV infection.
- ③ VCTC- RNTCP Co-ordination, to ensure that all VCTC staff are aware of the importance of dual HIV-TB co-infection

**ii. Reproductive and Child Health (RCH) Program**

Areas of prevention linked to HIV/AIDS interventions which have implications for services in this program are Voluntary Counseling and Testing, (VCTC), Prevention of Parent to Child Transmission and ensuring safety of blood and blood products. These are two areas of overlap between prevention and care strategies that address issues of blood safety, universal precautions and harm reduction from sharps and infectious waste. Additionally, detailed pictorial step-by-step instruction manuals for IC-WM are in process of being developed under RCH-II, which will be an excellent resource for all HCW located in primary and secondary healthcare facilities.

## **7.0 INFECTION CONTROL AND WASTE MANAGEMENT PLAN**

The **IC-WM Plan** (Plan) provides a consolidated, reference material on IC-WM good practices that may be further tailored to suit the facility's needs. The Plan is build on the following framework:

- ③ Section I: Infection Control and Waste Management
- ③ Section II: Capacity Building
- ③ Section III: Institutional Framework
- ③ Section IV: Monitoring and Evaluation
- ③ Section V: Implementation Schedule

### ***Section I: Infection Control and Waste Management:***

Healthcare workers involved in the NACP face the highest occupational risk due to the nature of their work dealing with testing and treatment of HIV/AIDS cases. Infectious waste from AIDS related activities include primarily: needles and sharps, blood and blood bags, used test kits, culture samples and slides and other related infectious waste such as swabs, gloves, bandages, sputum cups etc. Thus it is imperative that good IC-WM practices are implemented. This activity should not be restricted only to certain sections of the healthcare facility like VCTC, PPTCT, etc. but as mentioned clearly in section.....above, the coordination of such integrated approach to IC-WM should be undertaken at the state level with DOHFW taking the lead.

#### **1. Waste Segregation and On-site Storage**

Segregation at source is the most critical step towards a well-functioning waste management system. Separation of infectious and non-infectious waste becomes impossible once mixed, resulting in greater risk to all concerned. Additionally infectious waste, when segregated is a minor part of total waste generated, amounting to about 20-25% and can be easily managed.

The Biomedical Rules provides color coding for waste segregation and their respective treatment options, as listed below:

<b>WASTE SEGREGATION AND COLOR CODING<sup>2</sup></b>		
<b>Colour Coding</b>	<b>Waste Category</b>	<b>Treatment option as per Schedule I</b>
Yellow	Plastic bag Cat. 1, Cat. 2, and Cat. 3, Cat. 6.	Incineration / deep burial
Red	Disinfected container/plastic bag Cat. 3, Cat. 6, Cat.7	Autoclaving / Microwaving / Chemical Treatment
Blue / White Translucent	Plastic bag/puncture proof Cat. 4, Cat. 7. Container	Autoclaving / Microwaving / Chemical Treatment and Destruction / shredding
Black	Plastic bag Cat. 5 and Cat. 9 and Cat. 10. (solid)	Disposal in secured landfill

The facility should ensure that there are designated segregation points, as close to the generation points as possible. Segregation requires appropriate consumables, such as good quality and adequately sized containers, non-chlorinated plastic bags, needle cutters and safety boxes. The specifications and colour-coding provided in the BioMedical Rules need to be strictly followed. NACP III needs to ensure that all these tools needed are provided to all their facilities which are involved in HIV/AIDS related testing and treatment activities.

## **2. Collection and Transportation of Biomedical Wastes**

Transportation of biomedical wastes, within and outside the healthcare facility needs to be secure and well-managed. Spills and leakages can be risky for patients and the community, but can also result in pilferage and reuse of potentially infectious items such as syringes etc.

Specific steps to be taken by each facility include:

- ⌚ Waste should be collected from various sources and transported to a central location.
- ⌚ Within the facility, special waste routes should be designated to avoid patient care areas.

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<sup>2</sup> Categories 8 and 10 (liquid) do not require containers/bag and Cat 3 if disinfected locally need not be put in containers/bags.

- ⌚ Special timing should be identified for transportation of biomedical waste to the central point.
- ⌚ Dedicated wheeled containers, trolleys or carts should be used to transport the waste to the collection/treatment site. These should be such that the waste can be easily loaded and emptied and remain secured during transportation. They should not have any sharp edges and be easy to clean and disinfect.
- ⌚ If disposal is done within the premises of the healthcare facility, care should be taken that different categories of waste are disposed of accurately (sharps in sharps pit, anatomical waste in deep burial pits etc) as designated in the BioMedical Rules.
- ⌚ Waste handlers should be properly trained and should use barrier protection during transportation.

Whilst transporting infectious waste outside the facility, dedicated vehicles with Cytotoxic/biohazard waste symbols should be used. This responsibility however, is usually that of the Centralized Biomedical Waste Treatment Facility, which are contracted for treatment and disposal of biomedical waste.

### **3. Treatment and Disposal of Biomedical Wastes**

This section details the various waste treatment and disposal practices in the absence of a Centralized Biomedical Waste Treatment Facility, drawing primarily from the Biomedical Rules.

- ⌚ Used sharps (needles, slides, scalpels etc), blood bags, syringes and other infectious plastic and liquid wastes (Categories 4, 7, 8, and 10 of the BioMed Rules) need to be disinfected by immersion in 1% hypochlorite solution or any other equivalent chemical reagent. It must be ensured that chemical treatment ensures disinfection.
- ⌚ Waste containers should contain freshly prepared disinfectant solution and be kept closed all the time. At all times, the waste container should not be more than 3/4<sup>th</sup> full.
- ⌚ The waste containers should be emptied at least once everyday.

- ⌚ Infected linen in the hospital should be carefully packed in plastic bags, and disinfected before being sent for washing. Personnel involved in laundering infected linen should take adequate precautions to prevent the exposure to infections.
- ⌚ A log of quantity of waste generated by type, name of waste handler, time of emptying waste container, time of cleaning container and pouring disinfectant should be maintained.
- ⌚ Disposal as recommended in the Rules, should be as follows:
- ③ **Sharps** in their puncture proof containers should be drained of the disinfectant and disposed in the sharps pit, constructed within the premises.
- ③ **Infected organic waste** should be disposed of in the deep burial pits also constructed within the facility and covered with a layer of lime and soil.
- ③ **Infected recyclables** such as plastics and metals, can be sent for recycling but only after disinfection and/or autoclaving.

All equipment used for bio-medical waste treatment should be periodically subjected to maintenance checks to ensure its functioning. Both preventive and corrective maintenance schedules and records should be retained in the facility.

As a general practice of maintaining good hygiene, the floors of the facility should be first swabbed with a wet cloth, then swept to remove grits to avoid dust carrying pathogens from rising into the air and, finally, swabbed with a disinfectant solution. The swab cloth should be washed with detergent after every use. The housekeeping personnel should employ use of protective barriers to prevent exposure to infection.

#### **4. Sharps Management:**

Given the high risk of infection from infected sharps, a separate section on the safe use and disposal of sharps is being detailed. Sharps are anything that may cause puncture and cuts. Sharps include needles, scalpels, blades, broken glass, slides, lancets, sutures, and IV catheters. Infected needles, sharps and blood, if improperly handled, can be a source of infection for the HCWs.

Chances of infection to a HCW from an infected syringe have been estimated are as follows: Hepatitis B: 30%; Hepatitis C: 3-5%; HIV: 0.3%<sup>3</sup>.

The following is the estimated risk per contaminated sharp, depending upon the source<sup>4</sup>:

HbeAg positive	30-40%
HCV PCR positive	10%
HBsAg positive	2-6%
HCV positive (PCR negative)	1%
HIV positive	0.3%

It should be noted that these statistics come from Western countries with both (can we have the source of these figures, please?) comparatively low prevalence rates and well developed reporting and surveillance systems.

Higher prevalence rates in countries like India with inadequate IC-WM practices could entail a greater order of risk for exposed HCW.

Although the risk of infection from contaminated sharps is high for all categories of HCW, those most at risk of exposures are nurses, medical staff and clinical laboratory staff (blood collectors). Physicians are at some risk, but surgical and dental staff, although at high risk of injury, have a lower risk of infection. It must be remembered that all health care personnel (including cleaners, laundry staff and waste contractors) may be exposed to inappropriately discarded sharps. While emergency rooms and operating theatres pose high risk for HCW, it has been found that a) the majority of exposures have occurred in general ward areas and b) a larger number of exposures which would be classified as high risk have occurred in medical wards.

The following measures must be taken to ensure sharps safety in the work-place:

- ⌚ Barrier protection must always be used when handling sharps.

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<sup>3</sup> Source: OR-OSHA 216 Exposure Control/Blood Borne Pathogens

<sup>4</sup> Guidance Note on Health Care Worker Safety from HIV and other Blood Borne Infections- HNP Discussion Note, The World Bank, May 2004

- ⌚ Sharps must be segregated and stored in puncture-proof containers at the point of generation.
- ⌚ Sharps must be mutilated before treatment and disposal. Used disposable or Autodisable (AD) syringes should be mutilated by using needle cutters/ destroyers and hub-pullers and dropped into a puncture-proof container. Clipping, bending or breaking of needles by hand or re-capping should be avoided as this may cause accidental injuries.
- ⌚ Used sharps should not be left untreated or carelessly on counter tops, food trays, or beds, as this can pose a risk to all concerned.
- ⌚ Mutilated sharps should be immersed in 1% hypochlorite solution or any other equivalent chemical reagent for disinfection. Treatment by autoclaving / microwaving is also approved.
- ⌚ Final disposal should be in a secured landfill. Wherever this is not available everywhere, sharps pits or encapsulation should be used.
  - A sharps pit is a circular or rectangular pit, where sharp wastes are disposed. These pits are lined with brick, masonry or concrete rings. The pit should be covered with a concrete slab. When the pit is full, it should be sealed completely and another pit is prepared.
  - Encapsulation is another method. When a container (puncture & leak proof containers) is three-quarter full, material such as cement mortar, bituminous sand, plastic foam or clay is poured until the container is completely filled. After the medium has dried, the containers are sealed and disposed in landfill sites.
- ⌚ All the employees must be vaccinated, at a minimum, against Hepatitis B.

<b>GUIDELINES FOR DISPOSAL OF USED DISPOSABLE SYRINGES<sup>5</sup></b>	
<b>No.</b>	<b>Steps / Stages</b>
1	Severe needles from disposable syringe immediately after administering injection using a needle cutter/hub-cutter that removes the needle from disposable syringes or cuts plastic hub of syringe from AD syringes.
2	The cut needles get collected in the puncture proof container of the needle-cutter/hub-cutter. The container should contain an appropriate disinfectant and the cut needles should be completely immersed in the disinfectant

<sup>5</sup> Adapted from GoI Guidelines for AD Syringes

3	Segregate and store syringes and unbroken (but discarded) vials in a red bag or container.
4	Send the collected materials to the Common bio-medical waste treatment facilities. If such facilities do not exist, then go to the next step.
5	Treat the collected material in an autoclave. If this is unavailable, treat the waste in 1% hypochlorite solution or boil in water for at least 10 minutes. It shall be ensured that these treatments ensure disinfection.
6	Dispose the autoclaved waste as follows: (i) Dispose the needles and broken vials in a pit / tank, (ii) Send the syringes and unbroken vials for recycling or landfill.
7	Wash the containers properly for reuse.
8	Make a proper record of generation, treatment and disposal of waste.

## 5. Blood safety in Laboratory

Blood is the single most important source of HIV, HIB and other blood borne infections for HCWs. The legal framework with regard to blood safety has been adequately outlined in the Drugs and Cosmetics Act/Rules (Schedule XII B), which makes mandatory the universal screening of blood units for five transmissible infections: Hepatitis B, Hepatitis C, HIV, syphilis and malaria. The rules also provide for adequate testing procedures, quality control, standard qualifications, and experience for blood bank personnel, maintenance of complete and accurate records, strict guidelines for holding of blood donation camps etc.

Careful donor screening, discouraging use of paid donors, stringent screening of donated units of blood and licensing of blood banks has become mandatory in India to prevent HIV transmission through blood and blood products. Another important action taken by NACO has been to modernize 815 blood banks (282 major blood banks, and 533 district level blood banks). HIV testing facilities were identified in 154 Zonal Blood Testing Centres with functional linkages to blood banks that did not have the facilities to screen blood for HIV <sup>6</sup>. A significant portion of the blood banking activity is now also being carried out in the non-government sector for instance, through the Indian Red Cross (IRCS), other NGOs, and private hospitals.

Risk of infection varies with a number of factors, including type and number of exposures, amount of blood involved in the exposure, amount of virus in the patients'

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<sup>6</sup> An Action Plan for blood Safety, NACO 2003

blood etc. Modes of exposure to blood borne pathogens in a laboratory have been defined as below<sup>7</sup>:

Procedure	HCW at risk	Source/Modes of Transmission
Collection of blood/body fluid	Laboratory technician	③ Needle stick injury ③ Broken specimen container ③ Blood contamination of hand with skin lesions/breach
Transfer of specimen	Laboratory technician and transport worker	③ Contaminated exterior of container ③ Broken specimen container ③ Spills/splashes of specimen
Processing of specimen	Laboratory personnel	③ Puncture of skin ③ Contamination of skin from spills, splashes, glassware and work surface ③ Faulty techniques ③ Perforated gloves
Cleaning /Washing	Laboratory support staff	③ Puncture of skin ③ Contamination of skin from spills, splashes, glassware and work surface
Disposal of waste	Laboratory support staff	③ Contact with infectious waste, specially sharps, broken containers
Specimen transportation/ mailing	Transport/postal staff	③ Broken/leaking container or packaging

- ⌚ As per the BioMedical Rules, infected blood and blood samples is characterized as liquid waste and should be disinfected with hypochlorite solution.
- ⌚ Screened positive blood bags, contaminated test kits and items are categorized as infected solid waste and should be disinfected by chemical treatment / autoclave and mutilated before disposal.
- ⌚ Transport of specimens should be done in a diligent manner. The sample should be kept first in primary container with enough absorbent material around it. The primary container should then be placed in secondary container.
- ⌚ Staff should take care that the secondary container is also leak-proof, properly sealed and labeled. Upright position must be maintained at all times.

## 6. Infection Control

The four key areas of infection control for the NACP III are:

- Immunization against nosocomial infections

<sup>7</sup> Manual on Quality Assurance Practices in HIV Testing Laboratories: published by NICD and NACO

- Availability and use of barrier protection
- Management of PEP
- Awareness

NACO has developed Guidelines on Post Exposure Prophylaxis Guidelines for Occupational Exposure which provides instructions on prevention of occupational exposure and universal precautions.

- ⌚ Activities of high risk include invasive diagnostic and therapeutic procedures, wound dressing, operation theatre procedures, handling of blood/serum/body fluids and tissues etc. and special attention should be paid to ensuring safety precautions during these activities.
- ⌚ Barrier protection (gowns, masks, caps, gloves, shoes) should be maintained to prevent contact with contaminated blood/body fluids.
- ⌚ HCW working in high risk areas should be immunized, at the minimum, against HBV.
- ⌚ Daily cleaning of facility premises with appropriate disinfection should be done.
- ⌚ Spills are an important source of infection and should be cleaned up immediately. The spill should be covered with absorbent material, disinfectant poured around the spill and over the absorbent material. The surface should be wiped again with disinfectant. HCW must utilize barrier protection, specially gloves, when managing spills.
- ⌚ General observance of personal hygiene is important. All staff must be neat and clean always, with clean uniforms, nails, short or tied-up hair, etc.
- ⌚ PEP is required when there has been contact with known HIV/HBV infected material resulting from:
  - Percutaneous inoculation (needle stick, cut with a sharp, etc.)
  - Contamination of an open wound
  - Contamination of breached skin (chapped, abraded, dermatitis)
  - Contamination of a mucous membrane including conjunctiva

- ⌚ In all such instances immediate post-exposure management is crucial to reducing the risk of acquiring infection. This should be done in the manner prescribed by the above mentioned guidelines disseminated by NACO.
- ⌚ All accidents whether needle stick injuries or spills should be reported in the Accident Reporting Format, i.e. Form III of Biomedical Rules.

### ***Section II: Capacity Building and Awareness***

Training and sensitization of various HCWs and functionaries within and outside the health care systems is vital for the successful implementation of any IC-WM Plan. The training should focus on Universal Precautions, principles of waste management, identification of roles and responsibilities for implementation, monitoring and reporting. IEC material on Universal Precautions have also been disseminated across the states and union territories.

As defined in Section 3.3 above, institutional coordination between DOHFW/centrally funded programs such as RCH, TB etc and NACP III for capacity building programs should be considered to optimize resources and provide a coordinated and integrated approach to IC-WM practices in the entire healthcare facility. All awareness, training and communication initiatives should be oriented towards providing knowledge/information, building skills & competencies and bringing about a fundamental, mindset change in the attitudes of staff & personnel.

Most of the initiatives detailed below have to be done at the state level and be coordinated by the SACS, with technical and financial support from the national level. The Training Plan and budget should be included into the State PIP and into NACO's PIP and program budget.

The following steps should be followed for implementing training:

- ⌚ SACS Joint Director (Training) should conduct baseline assessment of training needs for HCWs involved in the NACP III.

- ⌚ A Training Plan needs to be developed, based upon existing capacity and training needs. At the outset, this plan should distinguish between trainers and non-trainers and elaborate the criteria for identifying trainers and their requirement for training.
- ⌚ Training should be provided to all HCWs, including doctors, nurses, ward boys, paramedics, laboratory technicians, and Class IV and/or housekeeping staff.
- ⌚ Training should be imparted through:
  - Dissemination of Information, Education and Communication (IEC) material that will sensitize HCWs and create general awareness on importance of IC-WM.
  - Technical training for HCWs with specific responsibilities for discrete activities related to IC-WM.
- ⌚ Training in Infection Control and in Waste Management should be a comprehensive package as the two are closely inter-twined.
- ⌚ The Train the trainer program will have to be undertaken at two levels – state and district levels. Training should be provided on an annual basis, with refresher courses annually or biannually.
- ⌚ In addition to classroom type training, IEC material and awareness-creating activities also need to be employed for training the HCW. Training should preferably be provided on site.
- ⌚ Each facility should keep records of training provided to employees, by category of employee.
- ⌚ The IEC material must be prepared in the local language on both IC and WM and should be prominently displayed at various places. It should serve as a reminder for all the trained employees as well as sensitize patients visiting the facility. JD (IEC) should be responsible for this activity.

### ***Section III: Institutional Framework***

Effective implementation of the IC-WM Plan necessitates a strong institutional framework:

- ⌚ A JD or APD and one Nodal officer should be identified and given the overall responsibility for IC-WM planning and implementation. The JD/APD will coordinate with other JDs for IEC, Surveillance and Training and interlink requirements and activities of the IC-WM plan with their respective activities. e.g. Coordination with JD-IEC to develop IEC material for IC-WM; with JD-Blood Safety to include IC-WM in guidelines for blood safety; with JD-Training for dissemination of IC-WM plan and related technical training; with JD-Surveillance to ensure monitoring, evaluation and reporting of IC-WM plan.
- ⌚ Whilst the JD/APD shall provide oversight, the Nodal Officer will be responsible for monitoring, reporting and follow-up at all facilities being operated by SACS.

Cross-cutting issues such as infection control and waste management need a coordinated and integrated approach for the entire healthcare sector. Therefore, while this IC-WM plan is restricted to the NACP-III and its institutional framework, closer linkages and working relationships need to be developed with the DOHFW/centrally funded programs to.

This IC-WM Plan recommends that a three-tier IC-WM Task Force should be instituted with the following as Chair and Member Secretary respectively:

- ③ At the **state level**, Principal Secretary and PD SACS
- ③ At the **district level** DM/Collector and District Nodal Officer/Chief Medical Officer/District Medical & Health Officer
- ③ At the **facility level** the Medical Superintendent (MS) or Resident Medical Officer (RMO)
- ③ Representatives of the State Pollution Control Board and its district level offices should be included in the Task Force.

The Task Force shall ensure implementation of the Plan at all departments of the hospitals within the legal framework of Biomedical Rules. It shall ensure that similar IC-WM guidelines and instructions are provided under the different programs and the overall health care sector. To avoid duplication and for optimization of resources, integrated

training modules and programs can be designed along with designated trainers for SACS and the host facilities. Utilization of common resources such as treatment and disposal facilities can be monitored and maintained as a shared responsibility.

#### ***Section IV: Reporting, Monitoring and Evaluation***

Monitoring & evaluation will be done through a mix of internal and external approaches. The internal reporting and evaluation mechanism on the IC-WM implementation should be integrated with overall NACP-III reporting. Management Information Systems (MIS) indicators pertaining to the IC-WM will be developed during implementation. External monitoring in the form of IC-WM implementation audits is also being recommended.

##### **i) Quarterly monitoring**

Each facility must establish a robust system of monitoring through regular documentation and assessments. Ideally, each facility should designate one senior employee responsible for documentation and another for internal evaluation. In the case of VCTC, PPTCT and Blood banks, the laboratory technician should maintain records of waste sharps, gloves, etc. and infectious waste. The records must be maintained on a daily basis and internal assessments should be conducted on a monthly basis. Examples of reporting formats are provided in tables 2, 3 and 4 in the Annex 4:

The monthly monitoring reports from SACS shall be compiled and sent to the district and state IC–WM task forces every quarter. The SACS PD should then forward the report to NACO with his comments on the success of implementation of the Plan and follow-up actions required along with budgetary requirements, if necessary.

The monthly monitoring reports from SACS shall be sent to the district and state IC–WM task forces. The SACS PD should then forward the report to NACO with his comments on the success of implementation of the Plan and follow-up actions required along with budgetary requirements, if necessary.

## **ii) Periodic Implementation Review**

Periodic implementation review of the IC-WM should be undertaken, and as far as possible, this review should be inbuilt into the regular review process of the NACP-III. This review should focus on consolidated information and reporting from individual facility and district levels. To facilitate regular and sustained monitoring, each SACS should develop annual Action Plans specifically for IC-WM, which should be included into the State PIPs.

### **③ *State-level***

The IC-WM Task Force should review overall implementation of the IC-WM Plan on an annual basis. This review should cover the following:

- Positive outcomes of IC-WM implementation and how these can be enhanced.
- Major deviations from IC-WM implementation, if any.
- Training implementation and its effectiveness.
- Outcomes of monitoring & evaluation such as periodic progress reports or audit reports.

Some generic Performance Indicators of the IC-WM Plan have been recommended below, which can be easily monitored at the state level.

- Availability and use of equipment and consumables for IC-WM (syringes, gloves, soaps, disinfectants, PEP, etc);
- Compliance of facility with BioMedical Rules (accident reporting and waste segregation, disinfection, colour-coding etc);
- Annual training hours for trainers, HCWs and refresher training;
- Behavioural practices of HCWs and employment of IC-WM practices
- Adequacy and completeness of reporting
- Issues relating to inadequacy in host facility, which will hinder effective waste management at the SACS level.

③ *National-level*

The Review should be done on an annual basis and the national level IC-WM review committee should be chaired by the PD, NACO. It is recommended that key management of NACO, MOHFW, CPCB, RCH and RNTCP programs also be members of the review process. The timing of this review should be concurrent with the NACP-III programmatic evaluation.

At the National level, this Review should cover the following:

- Positive outcomes of IC-WM implementation and how these can be enhanced.
- Major deviations from IC-WM implementation, such as:
- Training implementation and its effectiveness
- Poor implementation practices and inadequate use of equipment and consumables
- Irregular or incomplete documentation
- Outcomes of monitoring & evaluation such as periodic progress reports or audit reports.
- Issues that have been raised by the IC-WM Task forces during monthly and state level reviews.
- Need for modifications to existing operational guidelines or introduction of new guidelines.

**iii) Performance Indicators**

NACP-III envisages a robust nationwide Strategic Information Management System (SIMS) with focus on implementation, monitoring, evaluation and strategic surveillance, appropriate standards for measuring performance, analyzing variances, identifying bottlenecks, alerting program managers and facilitating corrective measures. Some generic Performance Indicators of the IC-WM Plan have been recommended below, which should be integrated into the NACP-III SMIS.

- Implementation of all components of the IC-WM Plan
- Timely procurement and distribution of IC-WM consumables and equipment
- Regular and timely training programs undertaken

- Regular evaluation of training effectiveness and assessment of employee behavioural practices
- Timely interventions and coordination with host facility on significant issues which could hinder effective implementation of IC-WM Plan
- Timely and regular reporting and evaluation undertaken, with corrective measures when necessary.

**iv) External Implementation Audits**

The SACS will be responsible for hiring of an external technical consultant/firm to undertake an independent evaluation of the program and its implementation. The agency to conduct this technical review should be chosen on the basis of their technical expertise and established experience in BioMedical waste management and environmental auditing. Such an independent audit review will be undertaken once during the life of the program, preferably before a mi-term evaluation is conducted.

**Section V: Implementation Schedule**

A generic Implementation Schedule for the IC-WM for a 12 month period is detailed below. It is recommended that the IC-WM activities get incorporated into each state level PIPs and into the national PIP.

<b>Activities</b>	<b>Q1</b>	<b>Q 2</b>	<b>Q 3</b>	<b>Q 4</b>
Resource Identification for implementation of IC-WM Plan				
Inclusion of IC-WM Plan activities into PIP				
Establishment of Task Force				
Preparation of Training Plan				
Finalization of Training modules and schedules				
Implementation of Training Plan				
Procurement of consumables and equipment				
<i>Monitoring and Evaluation</i>				
Monthly monitoring of activities				
Annual Monitoring of activities				
External Evaluation*				

\* to be conducted at mid-term of NACP-III program

## **Cost Estimates for Recommended Infection Control and Waste Management Plan**

Cost estimation for implementation of the IC-WM plan has been done for SACS level, with the recommendation that this will be included into the state budget and into NACO's the national budget for the NACP-III.

Since SACS facilities are hosted by large healthcare facilities, it is reiterated that there is coordination with DOHFW and the host facilities to ensure that IC-WM practices are observed in the entire healthcare facility.

**Annual Cost Estimates for SACS Facility  
(With 10 health care workers)**

	<b>Quantity</b>	<b>Unit cost (INR)</b>	<b>Total (INR)</b>
<b>Personal protective equipment</b>			
<b>Gloves – Disposable</b>	4000	2.5	10000
<b>Industrial</b>	2	50	100
Aprons	30	300	9000
Face masks	4000	1.5	6000
Hand-washing soap	15	10	150
Needle cutter	5	1600	8500
Waste buckets /baskets (with lids)	5	80	400
Bins/Drums (with lids)	2	400	800
Puncture proof plastic bags	400	3	1200
Hypochlorite solution	50lt	50/lt	2500
Mops	2	250	500
<b>TOTAL</b>			<b>29,050</b>

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<b>LIST OF ANNEXES</b>	
<b>1</b>	<b>World Bank Operational Policy on Environmental Assessment</b>
<b>2</b>	<b>Bio-Medical Waste (Management And Handling) (Third Amendment) Rules, 2003</b>
<b>3</b>	<b>Records of Stakeholder Consultation</b>
<b>4</b>	<b>Suggested Monitoring Indicators at Facility Level</b>
<b>5</b>	<b>Suggested Scheme for Training</b>
<b>6</b>	<b>IGNOU Certificate Program In Health Care Waste Management</b>
<b>7</b>	<b>Toxics Link Manual for Training the Trainers</b>

**Environmental Assessment**

This Operational Policy statement was revised in August 2004 to ensure consistency with the requirements of OP/BP 8.60, issued in August 2004.

**Note: OP and BP 4.01 together replace OMS 2.36, *Environmental Aspects of Bank Work*; OD 4.00, Annex A, *Environmental Assessment*; OD 4.00, Annex B, *Environmental Policy for Dam and Reservoir Projects*; OD 4.01, *Environmental Assessment*; and the following Operational Memoranda: *Environmental Assessments: Instructions to Staff on the Handling of the Borrower's Consultations with Affected Groups and Relevant Local NGOs*, 4/10/90; *Environmental Assessments: Instructions to Staff on the Release of Environmental Assessments to Executive Directors*, 11/21/90; and *Release of Environmental Assessments to Executive Directors*, 2/20/91. Additional information related to these statements is provided in the *Environmental Assessment Sourcebook* (Washington, D.C.: World Bank, 1991) and subsequent updates available from the Environment Sector Board, and in the *Pollution Prevention and Abatement Handbook*. Other Bank statements that relate to the environment include OP/BP 4.02, *Environmental Action Plans*; OP/BP 4.04, *Natural Habitats*; OP 4.07, *Water Resources Management*; OP 4.09, *Pest Management*; OP/BP 4.10, *Indigenous Peoples*; OP 4.11 (forthcoming), *Management of Cultural Property in Bank-Financed Projects*; OP/BP 4.12, *Involuntary Resettlement*; OP/BP 4.36, *Forests*; and OP/BP 10.04, *Economic Evaluation of Investment Operations*. These OP and BP apply to all projects for which a PID is first issued after March 1, 1999. Questions may be addressed to the Chair, Environment Sector Board.**

1. The Bank<sup>1</sup> requires environmental assessment (EA) of projects proposed for Bank financing to help ensure that they are environmentally sound and sustainable, and thus to improve decision making.
2. EA is a process whose breadth, depth, and type of analysis depend on the nature, scale, and potential environmental impact of the proposed project. EA evaluates a project's potential environmental risks and impacts in its area of influence;<sup>2</sup> examines project alternatives; identifies ways of improving project selection, siting, planning, design, and implementation by preventing, minimizing, mitigating, or compensating for adverse environmental impacts and enhancing positive impacts; and includes the process of mitigating and managing adverse environmental impacts throughout project implementation. The Bank favors preventive measures over mitigatory or compensatory measures, whenever feasible.
3. EA takes into account the natural environment (air, water, and land); human health and safety; social aspects (involuntary resettlement, indigenous peoples, and cultural

property);<sup>3</sup> and trans-boundary and global environmental aspects.<sup>4</sup> EA considers natural and social aspects in an integrated way. It also takes into account the variations in project and country conditions; the findings of country environmental studies; national environmental action plans; the country's overall policy framework, national legislation, and institutional capabilities related to the environment and social aspects; and obligations of the country, pertaining to project activities, under relevant international environmental treaties and agreements. The Bank does not finance project activities that would contravene such country obligations, as identified during the EA. EA is initiated as early as possible in project processing and is integrated closely with the economic, financial, institutional, social, and technical analyses of a proposed project.

4. The borrower is responsible for carrying out the EA. For Category A projects,<sup>5</sup> the borrower retains independent EA experts not affiliated with the project to carry out the EA.<sup>6</sup> For Category A projects that are highly risky or contentious or that involve serious and multidimensional environmental concerns, the borrower should normally also engage an advisory panel of independent, internationally recognized environmental specialists to advise on all aspects of the project relevant to the EA.<sup>7</sup> The role of the advisory panel depends on the degree to which project preparation has progressed, and on the extent and quality of any EA work completed, at the time the Bank begins to consider the project.

5. The Bank advises the borrower on the Bank's EA requirements. The Bank reviews the findings and recommendations of the EA to determine whether they provide an adequate basis for processing the project for Bank financing. When the borrower has completed or partially completed EA work prior to the Bank's involvement in a project, the Bank reviews the EA to ensure its consistency with this policy. The Bank may, if appropriate, require additional EA work, including public consultation and disclosure.

6. The *Pollution Prevention and Abatement Handbook* describes pollution prevention and abatement measures and emission levels that are normally acceptable to the Bank. However, taking into account borrower country legislation and local conditions, the EA may recommend alternative emission levels and approaches to pollution prevention and abatement for the project. The EA report must provide full and detailed justification for the levels and approaches chosen for the particular project or site.

### **EA Instruments**

7. Depending on the project, a range of instruments can be used to satisfy the Bank's EA requirement: environmental impact assessment (EIA), regional or sectoral EA, environmental audit, hazard or risk assessment, and environmental management plan (EMP).<sup>8</sup> EA applies one or more of these instruments, or elements of them, as appropriate. When the project is likely to have sectoral or regional impacts, sectoral or regional EA is required.<sup>9</sup>

## Environmental Screening

8. The Bank undertakes environmental screening of each proposed project to determine the appropriate extent and type of EA. The Bank classifies the proposed project into one of four categories, depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts.

(a) *Category A*: A proposed project is classified as Category A if it is likely to have significant adverse environmental impacts that are sensitive, 10 diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works. EA for a Category A project examines the project's potential negative and positive environmental impacts, compares them with those of feasible alternatives (including the "without project" situation), and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. For a Category A project, the borrower is responsible for preparing a report, normally an EIA (or a suitably comprehensive regional or sectoral EA) that includes, as necessary, elements of the other instruments referred to in para. 7.

(b) *Category B*: A proposed project is classified as Category B if its potential adverse environmental impacts on human populations or environmentally important areas—including wetlands, forests, grasslands, and other natural habitats—are less adverse than those of Category A projects. These impacts are site-specific; few if any of them are irreversible; and in most cases mitigatory measures can be designed more readily than for Category A projects. The scope of EA for a Category B project may vary from project to project, but it is narrower than that of Category A EA. Like Category A EA, it examines the project's potential negative and positive environmental impacts and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. The findings and results of Category B EA are described in the project documentation (Project Appraisal Document and Project Information Document). 11

(c) *Category C*: A proposed project is classified as Category C if it is likely to have minimal or no adverse environmental impacts. Beyond screening, no further EA action is required for a Category C project.

(d) *Category FI*: A proposed project is classified as Category FI if it involves investment of Bank funds through a financial intermediary, in subprojects that may result in adverse environmental impacts.

### EA for Special Project Types

### *Sector Investment Lending*

9. For sector investment loans (SILs),12 during the preparation of each proposed subproject, the project coordinating entity or implementing institution carries out appropriate EA according to country requirements and the requirements of this policy.13 The Bank appraises and, if necessary, includes in the SIL components to strengthen, the capabilities of the coordinating entity or the implementing institution to (a) screen subprojects, (b) obtain the necessary expertise to carry out EA, (c) review all findings and results of EA for individual subprojects, (d) ensure implementation of mitigation measures (including, where applicable, an EMP), and (e) monitor environmental conditions during project implementation.14 If the Bank is not satisfied that adequate capacity exists for carrying out EA, all Category A subprojects and, as appropriate, Category B subprojects—including any EA reports—are subject to prior review and approval by the Bank.

### *Financial Intermediary Lending*

10. For a financial intermediary (FI) operation, the Bank requires that each FI screen proposed subprojects and ensure that subborrowers carry out appropriate EA for each subproject. Before approving a subproject, the FI verifies (through its own staff, outside experts, or existing environmental institutions) that the subproject meets the environmental requirements of appropriate national and local authorities and is consistent with this OP and other applicable environmental policies of the Bank.15

11. In appraising a proposed FI operation, the Bank reviews the adequacy of country environmental requirements relevant to the project and the proposed EA arrangements for subprojects, including the mechanisms and responsibilities for environmental screening and review of EA results. When necessary, the Bank ensures that the project includes components to strengthen such EA arrangements. For FI operations expected to have Category A subprojects, prior to the Bank's appraisal each identified participating FI provides to the Bank a written assessment of the institutional mechanisms (including, as necessary, identification of measures to strengthen capacity) for its subproject EA work.16 If the Bank is not satisfied that adequate capacity exists for carrying out EA, all Category A subprojects and, as appropriate, Category B subprojects—including EA reports—are subject to prior review and approval by the Bank.17

### *Emergency Recovery Projects*

12. The policy set out in OP 4.01 normally applies to emergency recovery projects processed under **OP 8.50**, *Emergency Recovery Assistance*. However, when compliance with any requirement of this policy would prevent the effective and timely achievement of the objectives of an emergency recovery project, the Bank may exempt the project from such a requirement. The justification for any such exemption is recorded in the loan documents. In all cases, however, the Bank requires at a minimum that (a) the extent to which the emergency was precipitated or exacerbated by inappropriate environmental

practices be determined as part of the preparation of such projects, and (b) any necessary corrective measures be built into either the emergency project or a future lending operation.

### **Institutional Capacity**

13. When the borrower has inadequate legal or technical capacity to carry out key EA-related functions (such as review of EA, environmental monitoring, inspections, or management of mitigatory measures) for a proposed project, the project includes components to strengthen that capacity.

### **Public Consultation**

14. For all Category A and B projects proposed for IBRD or IDA financing, during the EA process, the borrower consults project-affected groups and local nongovernmental organizations (NGOs) about the project's environmental aspects and takes their views into account.<sup>18</sup> The borrower initiates such consultations as early as possible. For Category A projects, the borrower consults these groups at least twice: (a) shortly after environmental screening and before the terms of reference for the EA are finalized; and (b) once a draft EA report is prepared. In addition, the borrower consults with such groups throughout project implementation as necessary to address EA-related issues that affect them.<sup>19</sup>

### **Disclosure**

15. For meaningful consultations between the borrower and project-affected groups and local NGOs on all Category A and B projects proposed for IBRD or IDA financing, the borrower provides relevant material in a timely manner prior to consultation and in a form and language that are understandable and accessible to the groups being consulted.

16. For a Category A project, the borrower provides for the initial consultation a summary of the proposed project's objectives, description, and potential impacts; for consultation after the draft EA report is prepared, the borrower provides a summary of the EA's conclusions. In addition, for a Category A project, the borrower makes the draft EA report available at a public place accessible to project-affected groups and local NGOs. For SILs and FI operations, the borrower/FI ensures that EA reports for Category A subprojects are made available in a public place accessible to affected groups and local NGOs.

17. Any separate Category B report for a project proposed for IDA financing is made available to project-affected groups and local NGOs. Public availability in the borrowing country and official receipt by the Bank of Category A reports for projects proposed for IBRD or IDA financing, and of any Category B EA report for projects proposed for IDA funding, are prerequisites to Bank appraisal of these projects.

18. Once the borrower officially transmits the Category A EA report to the Bank, the Bank distributes the summary (in English) to the executive directors (EDs) and makes the

report available through its InfoShop. Once the borrower officially transmits any separate Category B EA report to the Bank, the Bank makes it available through its InfoShop.<sup>20</sup> If the borrower objects to the Bank's releasing an EA report through the World Bank InfoShop, Bank staff (a) do not continue processing an IDA project, or (b) for an IBRD project, submit the issue of further processing to the EDs.

### **Implementation**

19. During project implementation, the borrower reports on (a) compliance with measures agreed with the Bank on the basis of the findings and results of the EA, including implementation of any EMP, as set out in the project documents; (b) the status of mitigatory measures; and (c) the findings of monitoring programs. The Bank bases supervision of the project's environmental aspects on the findings and recommendations of the EA, including measures set out in the legal agreements, any EMP, and other project documents.<sup>21</sup>

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1. "Bank" includes IDA; "EA" refers to the entire process set out in OP/BP 4.01; "loans" includes IDA credits and IDA grants; "borrower" includes, for guarantee operations, a private or public project sponsor receiving from another financial institution a loan guaranteed by the Bank; and "project" covers all operations financed by Bank loans or guarantees except development policy lending (for which the environmental provisions are set out in OP / BP 8.60, *Development Policy Lending*), and also includes projects under adaptable lending—adaptable program loans (APLs) and learning and innovation loans (LILs)—and projects and components funded under the Global Environment Facility. The project is described in Schedule 2 to the Loan/Credit Agreement. This policy applies to all components of the project, regardless of the source of financing.
  2. For definitions, see Annex A. The area of influence for any project is determined with the advice of environmental specialists and set out in the EA terms of reference.
  3. See OP/BP 4.12, *Involuntary Resettlement*; OP/BP 4.10, *Indigenous Peoples*; and OP 4.11 (forthcoming), *Management of Cultural Property in Bank-Financed Projects*.
  4. Global environmental issues include climate change, ozone-depleting substances, pollution of international waters, and adverse impacts on biodiversity.
  5. For screening, see para. 8.
  6. EA is closely integrated with the project's economic, financial, institutional, social, and technical analyses to ensure that (a) environmental considerations are given adequate weight in project selection, siting, and design decisions; and (b) EA does not delay project processing. However, the borrower ensures that when individuals or entities are engaged to carry out EA activities, any conflict of interest is avoided. For example, when an independent EA is required, it is not carried out by the consultants hired to prepare the engineering design.
  7. The panel (which is different from the dam safety panel required under OP/ BP

- 4.37, *Safety of Dams*) advises the borrower specifically on the following aspects: (a) the terms of reference for the EA, (b) key issues and methods for preparing the EA, (c) recommendations and findings of the EA, (d) implementation of the EA's recommendations, and (e) development of environmental management capacity.
8. These terms are defined in Annex A. Annexes B and C discuss the content of EA reports and EMPs.
9. Guidance on the use of sectoral and regional EA is available in EA Sourcebook Updates 4 and 15.
10. A potential impact is considered "sensitive" if it may be irreversible (e.g., lead to loss of a major natural habitat) or raise issues covered by OP/BP 4.10, *Indigenous Peoples*; OP 4.04, *Natural Habitats*; OP 4.11 (forthcoming), *Management of Cultural Property in Bank-Financed Projects*; or OP 4.12, *Involuntary Resettlement*.
11. When the screening process determines, or national legislation requires, that any of the environmental issues identified warrant special attention, the findings and results of Category B EA may be set out in a separate report. Depending on the type of project and the nature and magnitude of the impacts, this report may include, for example, a limited environmental impact assessment, an environmental mitigation or management plan, an environmental audit, or a hazard assessment. For Category B projects that are not in environmentally sensitive areas and that present well-defined and well-understood issues of narrow scope, the Bank may accept alternative approaches for meeting EA requirements: for example, environmentally sound design criteria, siting criteria, or pollution standards for small-scale industrial plants or rural works; environmentally sound siting criteria, construction standards, or inspection procedures for housing projects; or environmentally sound operating procedures for road rehabilitation projects.
12. SILs normally involve the preparation and implementation of annual investment plans or subprojects as time slice activities over the course of the project.
13. In addition, if there are sectorwide issues that cannot be addressed through individual subproject EAs (and particularly if the SIL is likely to include Category A subprojects), the borrower may be required to carry out sectoral EA before the Bank appraises the SIL.
14. Where, pursuant to regulatory requirements or contractual arrangements acceptable to the Bank, any of these review functions are carried out by an entity other than the coordinating entity or implementing institution, the Bank appraises such alternative arrangements; however, the borrower/coordinating entity/implementing institution remains ultimately responsible for ensuring that subprojects meet Bank requirements.
15. The requirements for FI operations are derived from the EA process and are consistent with the provisions of para. 6 of this OP. The EA process takes into account the type of finance being considered, the nature and scale of anticipated subprojects, and the environmental requirements of the jurisdiction in which subprojects will be located.
16. Any FI included in the project after appraisal complies with the same

requirement as a condition of its participation.

17. The criteria for prior review of Category B subprojects, which are based on such factors as type or size of the subproject and the EA capacity of the financial intermediary, are set out in the legal agreements for the project.

18. For the Bank's approach to NGOs, see GP 14.70, *Involving Nongovernmental Organizations in Bank-Supported Activities*.

19. For projects with major social components, consultations are also required by other Bank policies—for example, OP / BP 4.10, *Indigenous Peoples*, and OP/BP 4.12, *Involuntary Resettlement*.

20. For a further discussion of the Bank's disclosure procedures, see *The World Bank Policy on Disclosure of Information*. Specific requirements for disclosure of resettlement plans and indigenous peoples development plans are set out in OP / BP 4.10, *Indigenous Peoples* and OP/BP 4.12, *Involuntary Resettlement*.

21. See OP/BP 13.05, *Project Supervision*

**BIO-MEDICAL WASTE (MANAGEMENT AND HANDLING)  
(THIRD AMENDMENT) RULES, 2003**

**MINISTRY OF ENVIRONMENT AND FORESTS  
NOTIFICATION**

**New Delhi, the 17<sup>th</sup> September, 2003.**

**S.O. 1069(E).**- In exercise of the powers conferred by sections 6, 8 and 25 of the Environment (Protection) Act, 1986 ( 29 of 1986), the Central Government hereby makes the following rules further to amend the Bio-Medical Waste ( Management and Handling) Rules, 1998, namely:-

1. (1) These rules may be called the Bio-Medical Waste (Management and Handling) (Amendment) Rules, 2003.  
  
(2) They shall come into force on the date of their publication in the Official Gazette.
2. In rule 7 of the Bio-Medical Waste (Management and Handling) Rules, 1998 (hereinafter referred to as the said rules),-
  - (a) in sub-rule (1), for the opening words “The prescribed authority for enforcement”, the words “Save as otherwise provide, the prescribed authority for enforcement” shall be substituted;
  - (b) after sub-rule (1), the following sub-rule shall be inserted, namely:-

“(1A). The prescribed authority for enforcement of the provisions of these rules in respect of all health care establishments including hospitals, nursing homes, clinics, dispensaries, veterinary institutions, Animal houses, pathological laboratories and blood banks of the Armed Forces under the Ministry of Defence shall be the Director General, Armed Forces Medical Services.”.
3. In the said rules , existing rule 9 shall be re-numbered as sub-rule (1) thereof , and after sub-rule (1) as so re-numbered, the following sub-rule shall be inserted , namely:-
  - “(2) Notwithstanding anything contained in sub-rule ( 1 ) , the Ministry of Defence shall constitute in that Ministry, an Advisory Committee consisting of the following in respect of all health care establishments including hospitals, nursing homes, clinics, dispensaries, veterinary institutions, animal houses, pathological laboratories and blood banks of the Armed Forces under the Ministry of Defence, to advise the Director General, Armed Forces Medical Services and the Ministry of Defence in matters relating to implementation of these rules, namely:-

- (1) Additional Director General of  
Armed Forces Medical Services ..... Chairman
- (2) A representative of the Ministry of  
Defence not below the rank of Deputy  
Secretary, to be nominated by that Ministry ..... Member
- (3) A representative of the Ministry of Environment  
and Forests not below the rank of Deputy Secretary  
To be nominated by that Ministry. .... Member
- (4) A representative of the Indian Society of  
Hospitals Waste Management, Pune ..... Member”

4. In the said rules, after rule 9, the following rule shall be inserted,  
namely:-

**“9A. Monitoring of implementation of the rules in Armed Forces Health Care Establishments.-**

- (1) The Central Pollution Control Board shall monitor the implementation of these rules in respect of all the Armed Forces health care establishments under the Ministry of Defence.
- (2) After giving prior notice to the Director General Armed Forces Medical Services, the Central Pollution Control Board along with one or more representatives of the Advisory Committee constituted under sub-rule (2) of rule 9 may, if it considers it necessary, inspect any Armed Forces health care establishments.”
5. In the said rules, existing rule 13 shall be re-numbered as sub-rule (1) thereof; and-
- (a) in sub-rule (1), as so re-numbered, for the opening portion, for the words “ Any person”, the words, brackets and figure “ Save as otherwise provided in sub-rule (2), any person ” shall be substituted;
- (b) after sub-rule (1) as so re-numbered, the following sub-rule shall be inserted, namely:-

“(2) Any person aggrieved by an order of the Director General, Armed Forces Medical Services under these rules may, within thirty days from the date on which the order is communicated to him prefer an appeal to the Central Government in the Ministry of Environment and Forests.”.

[F. No.23-2/96-HSMD]  
Dr. V. RAJAGOPAL, Jt. Secy.

**Note:** The Principle rules were published in the Gazette of India vide tification number S.O. 630 (E) dated 20.7.98 and subsequently amended *vide-*  
(1) S.O.201 (E) dated 6.3.2000; and (2) S.O.545 (E) dated 2.6.2000.

## **New Delhi, the 2nd June, 2000**

**S.O. 630 (E).**-Whereas a notification in exercise of the powers conferred by Sections 6, 8 and 25 of the Environment (Protection) Act, 1986 (29 of 1986) was published in the Gazette vide S.O. 746 (E) dated 16 October, 1997 inviting objections from the public within 60 days from the date of the publication of the said notification on the Bio-Medical Waste (Management and Handling) Rules, 1998 and whereas all objections received were duly considered..

Now, therefore, in exercise of the powers conferred by section 6, 8 and 25 of the Environment (Protection) Act, 1986 the Central Government hereby notifies the rules for the management and handling of bio-medical waste.

### **1. Short Title and Commencement:**

- (i) These rules may be called the Bio-Medical Waste (Management and Handling) (Second Amendment) Rules, 2000.
- (ii) They shall come into force on the date of their publication in the official Gazette.

### **2. Application:**

These rules apply to all persons who generate, collect, receive, store, transport, treat, dispose, or handle bio medical waste in any form.

### **3. Definitions:**

In these rules unless the context otherwise requires

- (1) "Act" means the Environment (Protection) Act, 1986 (29 of 1986);
- (2) "Animal House" means a place where animals are reared/kept for experiments or testing purposes;
- (3) "Authorisation" means permission granted by the prescribed authority for the generation, collection, reception, storage, transportation, treatment, disposal and/or any other form of handling of bio-medical waste in accordance with these rules and any guidelines issued by the Central Government.

(4) "Authorised person" means an occupier or operator authorised by the prescribed authority to generate, collect, receive, store, transport, treat, dispose and/or handle bio-medical waste in accordance with these rules and any guidelines issued by the Central Government;

(5) "Bio-medical waste" means any waste, which is generated during the diagnosis, treatment or immunisation of human beings or animals or in research activities pertaining thereto or in the production or testing of biologicals, and including categories mentioned in Schedule I;

(6) "Biologicals" means any preparation made from organisms or micro-organisms or product of metabolism and biochemical reactions intended for use in the diagnosis, immunisation or the treatment of human beings or animals or in research activities pertaining thereto;

(7) "Bio-medical waste treatment facility" means any facility wherein treatment. Disposal of bio-medical waste or processes incidental to such treatment or disposal is carried out and includes common treatment facilities; (a) "Form" means Form appended to these rules;

(8) "Occupier" in relation to any institution generating bio-medical waste, which includes a hospital, nursing home, clinic dispensary, veterinary institution, animal house, pathological laboratory, blood bank by whatever name called, means a person who has control over that institution and/or its premises;

(9) "Operator of a bio-medical waste facility" means a person who owns or controls or operates a facility for the collection, reception, storage, transport, treatment, disposal or any other form of handling of bio-medical waste;

(10) "Schedule" means schedule appended to these rules;

#### **4. Duty of Occupier:**

It shall be the duty of every occupier of an institution generating bio-medical waste which includes a hospital, nursing home, clinic, dispensary, veterinary institution, animal house, pathological laboratory, blood bank by whatever name called to take all steps to ensure that such waste is handled without any adverse effect to human health and the environment.

#### **5. Treatment and Disposal**

(1) Bio-medical waste shall be treated and disposed of in accordance with Schedule I, and in compliance with the standards prescribed in Schedule V.

(2) Every occupier, where required, shall set up in accordance with the time-schedule in Schedule VI, requisite bio-medical waste treatment

facilities like incinerator, autoclave, microwave system for the treatment of waste, or, ensure requisite treatment of waste at a common waste treatment facility or any other waste treatment facility.

## **6. Segregation, Packaging, Transportation and Storage**

- (1) Bio-medical waste shall not be mixed with other wastes.
- (2) Bio-medical waste shall be segregated into containers/bags at the point of generation in accordance with Schedule II prior to its storage, transportation, treatment and disposal. The containers shall be labeled according to Schedule III.
- (3) If a container is transported from the premises where bio-medical waste is generated to any waste treatment facility outside the premises, the container shall, apart from the label prescribed in Schedule III, also carry information prescribed in Schedule IV.
- (4) Notwithstanding anything contained in the Motor Vehicles Act, 1988, or rules thereunder, untreated biomedical waste shall be transported only in such vehicle as may be authorised for the purpose by the competent authority as specified by the government.
- (5) No untreated bio-medical waste shall be kept stored beyond a period of 48 hours provided that if for any reason it becomes necessary to store the waste beyond such period, the authorised person must take permission of the prescribed authority and take measures to ensure that the waste does not adversely affect human health and the environment.
- (6) The Municipal body of the area shall continue to pick up and transport segregated non bio-medical solid waste generated in hospitals and nursing homes, as well as duly treated bio-medical wastes for disposal at municipal dump site.

## **7. Prescribed Authority**

- (1) The prescribed authority for enforcement of the provisions of these rules shall be the State Pollution Control Boards in respect of States and the Pollution Control Committees in respect of the Union territories and all pending cases with a prescribed authority appointed earlier shall stand transferred to the concerned State Pollution Control Board, or as the case may be, the Pollution Control Committees.
- (2) The prescribed authority for the State or Union Territory shall be appointed within one month of the coming into force of these rules.

(3) The prescribed authority shall function under the supervision and control of the respective Government of the State or Union Territory.

(4) The prescribed authority shall on receipt of Form 1 make such enquiry as it deems fit and if it is satisfied that the applicant possesses the necessary capacity to handle bio-medical waste in accordance with these rules, grant or renew an authorisation as the case may be.

(5) An authorisation shall be granted for a period of three years, including an initial trial period of one year from the date of issue. Thereafter, an application shall be made by the occupier/operator for renewal. All such subsequent authorisation shall be for a period of three years. A provisional authorisation will be granted for the trial period, to enable the occupier/operator to demonstrate the capacity of the facility.

(6) The prescribed authority may after giving reasonable opportunity of being heard to the applicant and for reasons thereof to be recorded in writing, refuse to grant or renew authorisation.

(7) Every application for authorisation shall be disposed of by the prescribed authority within ninety days from the date of receipt of the application.

(8) The prescribed authority may cancel or suspend an authorisation, if for reasons, to be recorded in writing, the occupier/operator has failed to comply with any provision of the Act or these rules:

Provided that no authorisation shall be cancelled or suspended without giving a reasonable opportunity to the occupier/operator of being heard.

## **8. Authorisation**

(1) Every occupier of an institution generating, collecting, receiving, storing, transporting, treating, disposing and/or handling bio-medical waste in any other manner, except such occupier of clinics, dispensaries, pathological laboratories, blood banks providing treatment/service to less than 1000 (one thousand) patients per month, shall make an application in Form 1 to the prescribed authority for grant of authorisation.

(2) Every operator of a bio-medical waste facility shall make an application in Form 1 to the prescribed authority for grant of authorisation.

(3) Every application in Form 1 for grant of authorisation shall be accompanied by a fee as may be prescribed by the Government of the State or Union Territory.

(4) The authorization to operate a facility shall be issued in Form IV, subject to conditions laid therein and such other condition, as the prescribed authority, may consider it necessary.

## **9. Advisory Committee**

The Government of every State/Union Territory shall constitute an advisory committee. The committee will include experts in the field of medical and health, animal husbandry and veterinary sciences, environmental management, municipal administration, and any other related department or organization including non-governmental organizations. As and when required, the committee shall advise the Government of the State/Union Territory and the prescribed authority about matters related to the implementation of these rules.

## **10. Annual Report**

Every occupier/operator shall submit an annual report to the prescribed authority in Form 11 by 31 January every year, to include information about the categories and quantities of bio-medical wastes handled during the preceding year. The prescribed authority shall send this information in a compiled form to the Central Pollution Control Board by 31 March every year.

## **11. Maintenance of Records**

(1) Every authorised person shall maintain records related to the generation, collection, reception, storage, transportation, treatment, disposal and/or any form of handling of bio-medical waste in accordance with these rules and any guidelines issued.

(2) All records shall be subject to inspection and verification by the prescribed authority at any time.

## **12. Accident Reporting**

When any accident occurs at any institution or facility or any other site where bio-medical waste is handled or during transportation of such waste, the authorised person shall report the accident in Form III to the prescribed authority forthwith.

## **13. Appeal**

Any person aggrieved by an order made by the prescribed authority under these rules may, within thirty days from the date on which the order is communicated to him, prefer an appeal in form V to such authority as the Government of State/Union Territory may think fit to constitute:

Provided that the authority may entertain the appeal after the expiry of the said period of thirty days if it is satisfied that the appellant was prevented by sufficient cause from filing the appeal in time.

**14. Common disposal/incineration sites.**

Without prejudice to rule 5 of these rules, the Municipal Corporations, Municipal Boards or Urban Local Bodies, as the case may be, shall be responsible for providing suitable common disposal/incineration sites for the biomedical wastes generated in the area under their jurisdiction and in areas outside the jurisdiction of any municipal body, it shall be the responsibility of the occupier generating bio-medical waste/operator of a bio-medical waste treatment facility to arrange for suitable sites individually or in association, so as to comply with the provisions of these rules

**SCHEDULE I (See Rule 5)**

**Categories of Bio-Medical Waste**

<b>Waste Category No.</b>	<b>Waste Category Type</b>	<b>Treatment and Disposal Option+</b>
Category No. 1	Human Anatomical Waste (human tissues, organs, body parts)	incineration/deep burial*
Category No. 2	Animal Waste (animal tissues, organs, body parts carcasses, bleeding parts, fluid, blood and experimental animals used in research, waste generated by veterinary hospitals colleges, discharge from hospitals, animal houses)	incineration@/deep burial*
Category No 3	Microbiology & Biotechnology Waste (wastes from laboratory cultures, stocks or specimens of micro-organisms live or attenuated vaccines, human and animal cell culture used in research and infectious agents from research and industrial laboratories, wastes from production of biologicals, toxins, dishes and devices used for transfer of cultures)	local autoclaving/micro-waving/incineration@
Category No 4	Waste sharps (needles, syringes, scalpels, blades, glass, etc. that may cause puncture and cuts. This includes both used and unused sharps)	disinfection(chemical treatment@/auto claving/micro-waving and mutilation/shredding
Category No 5	Discarded Medicines and Cytotoxic drugs (wastes comprising of outdated, contaminated and discarded medicines)	incineration@/destruction and drugs disposal in secured landfills
Category No 6	Soiled Waste (Items contaminated with blood, and body fluids including cotton, dressings, soiled plaster casts, lines, beddings, other material contaminated with blood)	incineration@autoclaving/micro waving
Category No. 7	Solid Waste (wastes generated from disposable items other than the waste sharps such as tubings, catheters, intravenous sets etc).	disinfection by chemical treatment@@ autoclaving/microwaving and mutilation/shredding##
Category No. 8	Liquid Waste (waste generated from laboratory and washing, cleaning, house-keeping and disinfecting activities)	disinfection by chemical treatment@@ and discharge into drains.
Category No. 9	Incineration Ash (ash from incineration of any bio-medical waste)	disposal in municipal landfill
Category No. 10	Chemical Waste (chemicals used in production of biologicals, chemicals used in disinfection, as insecticides, etc.)	chemical treatment@@ and discharge into drains for liquids and secured landfill for solids

+ Options given above are based on available technologies. Occupier/operator wishing to use other State-of-the-art technologies shall approach the Central Pollution Control Board to get the standards laid down to enable the prescribed authority to consider grant of authorisation @@ Chemicals treatment using at least 1% hypochlorite solution or any other equivalent chemical reagent. It must be ensured that chemical treatment ensures disinfection.

## Mutilation/shredding must be such so as to prevent unauthorised reuse.

@ There will be no chemical pretreatment before incineration. Chlorinated plastics shall not be incinerated.

\* Deep burial shall be an option available only in towns with population less than five lakhs and in rural areas.

**SCHEDULE II (see Rule 6)**

**Colour Coding and Type of Container for Disposal of Bio-Medical Wastes**

<b>Colour Coding</b>	<b>Type of Container-I Waste Category</b>	<b>Treatment options as per Schedule I</b>
Yellow	Plastic bag Cat. 1, Cat. 2, and Cat. 3 Cat. 6.	Incineration/deep burial
Red	Disinfected container/plastic bag Cat. 3 Cat. 6, Cat.7.	Autoclaving/Microwaving/Chemical Treatment
Blue/White translucent	Plastic bag/puncture proof Cat. 4, Cat. 7. Container	Autoclaving/Microwaving/Chemical Treatment and destruction/shredding
Black	Plastic bag Cat. 5 and Cat. 9 and Cat. 10. (solid)	Disposal in secured landfill

Notes:

1. Colour coding of waste categories with multiple treatment options as defined in Schedule I, shall be selected depending on treatment option chosen, which shall be as specified in Schedule I.
2. Waste collection bags for waste types needing incineration shall not be made of chlorinated plastics.
3. Categories 8 and 10 (liquid) do not require containers/bags.
4. Category 3 if disinfected locally need not be put in containers/bags.

**SCHEDULE III** (see Rule 6)

**Label For Bio-Medical Waste Containers/Bags**



**Bio-Hazard Symbol**



**Cytotoxic Hazard Symbol**

**Handle With Care**

Note: Label shall be non-washable and prominently visible.

**SCHEDULE IV** (see Rule 6)

**Label for Transport of Bio-Medical Waste**

**Containers/Bags**

Day ..... Month .....  
Year .....  
Date of generation .....

Waste category No .....  
Waste class  
Waste description

**Sender's Name & Address**

Phone No .....  
Telex No ....  
Fax No .....

**Contact Person .....**

**Receiver's Name & Address**

Phone No .....  
Telex No .....  
Fax No .....

**Contact Person .....**

**In case of emergency please contact**

Name & Address :

Phone No.

Note :

Label shall be non-washable and prominently visible.

## SCHEDULE V (see Rule 5 and Schedule 1)

### Standards for Treatment and Disposal of Bio-Medical Wastes

#### Standards for Incinerators:

All incinerators shall meet the following operating and emission standards

#### A. Operating Standards

1. Combustion efficiency (CE) shall be at least 99.00%.

2. The Combustion efficiency is computed as follows:

$$C.E = \frac{\%CO_2}{\%CO_2 + \%CO} \times 100$$

3. The temperature of the primary chamber shall be  $800 \pm 50^\circ\text{C}$ .

4. The secondary chamber gas residence time shall be at least I (one) second at  $1050 \pm 50^\circ\text{C}$ , with minimum 3% oxygen in the stack gas.

#### B. Emission Standards

Parameters Concentration mg/Nm<sup>3</sup> at (12% CO<sub>2</sub> correction)

(1) Particulate matter 150

(2) Nitrogen Oxides 450

(3) HCL 50

(4) Minimum stack height shall be 30 metres above ground

(5) Volatile organic compounds in ash shall not be more than 0.01%

#### Note:

- Suitably designed pollution control devices should be installed/retrofitted with the incinerator to achieve the above emission limits, if necessary.
- Wastes to be incinerated shall not be chemically treated with any chlorinated disinfectants.

- Chlorinated plastics shall not be incinerated.
- Toxic metals in incineration ash shall be limited within the regulatory quantities as defined under the Hazardous Waste (Management and Handling Rules,) 1989.
- Only low sulphur fuel like L.D.0dLS.H.S.1Diesel shall be used as fuel in the incinerator.

**Standards for Waste Autoclaving:**

The autoclave should be dedicated for the purposes of disinfecting and treating bio-medical waste,

(I) When operating a gravity flow autoclave, medical waste shall be subjected to:

- (i) A temperature of not less than 121°C and pressure of 15 pounds per square inch (psi) for an autoclave residence time of not less than 60 minutes; or
- (ii) A temperature of not less than 135°C and a pressure of 31 psi for an autoclave residence time of not less than 45 minutes; or
- (iii) A temperature of not less than 149°C and a pressure of 52 psi for an autoclave residence time of not less than 30 minutes.

(II) When operating a vacuum autoclave, medical waste shall be subjected to a minimum of one pre-vacuum pulse to purge the autoclave of all air. The waste shall be subjected to the following:

- (i) A temperature of not less than 121°C and pressure of 15 psi per an autoclave residence time of not less than 45 minutes; or
- (ii) A temperature of not less than 135°C and a pressure of 31 psi for an autoclave residence time of not less than 30 minutes;

(III) Medical waste shall not be considered properly treated unless the time, temperature and pressure indicators indicate that the required time, temperature and pressure were reached during the autoclave process. If for any reasons, time temperature or pressure indicator indicates that the required temperature, pressure or residence time was not reached, the entire load of medical waste must be autoclaved again until the proper temperature, pressure and residence time were achieved.

(IV) Recording of operational parameters

Each autoclave shall have graphic or computer recording devices, which will automatically, and continuously monitor and record dates, time of day, load

identification number and operating parameters throughout the entire length of the autoclave cycle.

(V) Validation test

**Spore testing:**

The autoclave should completely and consistently kill the approved biological indicator at the maximum design capacity of each autoclave unit. Biological indicator for autoclave shall be *Bacillus stearothermophilus* spores using vials or spore strips; with at least  $1 \times 10^4$  spores per millilitre. Under no circumstances will an autoclave have minimum operating parameters less than a residence time of 30 minutes, regardless of temperature and pressure, a temperature less than 121°C or a pressure less than 15 psi.

(VI) Routine Test

A chemical indicator strip/tape that changes colour when a certain temperature is reached can be used to verify that a specific temperature has been achieved. It may be necessary to use more than one strip over the waste package at different location to ensure that the inner content of the package has been adequately autoclaved

### **Standard For Liquid Waste:**

The effluent generated from the hospital should conform to the following limits

<b>Parameters</b>	<b>Permissible Limits</b>
PH	63-9.0
Suspended solids	100 mg/l
Oil and grease	10 mg/l
BOD	30 mg/l
COD	250 mg/l
Bio-assay test	90% survival of fish after 96 hours in 100% effluent.

These limits are applicable to those, hospitals which are either connected with sewers without terminal sewage treatment plant or not connected to public sewers. For discharge into public sewers with terminal facilities, the general standards as notified under the Environment (Protection) Act, 1986 shall be applicable.

### **Standards of Microwaving**

- 1 Microwave treatment shall not be used for cytotoxic, hazardous or radioactive wastes, contaminated animal car casses, body parts and large metal items.
2. The microwave system shall comply with the efficacy test/routine tests and a performance guarantee may be provided by the supplier before operation of the limit.
3. The microwave should completely and consistently kill the bacteria and other pathogenic organisms that is ensured by approved biological indicator at the maximum design capacity of each microwave unit. Biological indicators for microwave shall be Bacillus Subtilis spores using vials or spore strips with at least  $1 \times 10^4$  spores per milliliter.

### **Standards for Deep Burial**

1. A pit or trench should be dug about 2 metres deep. It should be half filled with waste, then covered with lime within 50 cm of the surface, before filling the rest of the pit with soil.
2. It must be ensured that animals do not have any access to burial sites. Covers of galvanised iron/wire meshes may be used.

3. On each occasion, when wastes are added to the pit, a layer of 10 cm of soil shall be added to cover the wastes.
4. Burial must be performed under close and dedicated supervision.
5. The deep burial site should be relatively impermeable and no shallow well should be close to the site.
6. The pits should be distant from habitation, and sited so as to ensure that no contamination occurs of any surface water or ground water. The area should not be prone to flooding or erosion.
7. The location of the deep burial site will be authorised by the prescribed authority.
8. The institution shall maintain a record of all pits for deep burial.

**SCHEDULE VI** (see Rule 5)

**Schedule for Waste Treatment Facilities like Incinerator/Autoclave/Microwave System**

A.	Hospitals and nursing homes in towns with population of 30 lakhs and above	by 31st December, 1999 or earlier
B.	Hospitals and nursing homes in towns with population of below 30 lakhs,	
	(a) with 500 beds and above	by 31st December, 1999 or earlier
	(b) with 200 beds and above but less than 500 beds	by 31st December, 2000 or earlier
	(c) with 50 beds and above but less than 200 beds	by 31st December, 2001 or earlier
	(d) with less than 50 beds	by 31st December, 2002 or earlier
C.	All other institutions generating bio-medical waste not included in A and B above	by 31st December, 2002 or earlier

**FORM I** (see rule 8)

**Application for Authorisation/Renewal of Authorisation**

(To be submitted in duplicate.)

To

The Prescribed Authority (Name of the State Govt/UT Administration)  
Address.

**1. Particulars of Applicant**

(i) Name of the Applicant (In block letters & in full)

(ii) Name of the Institution: Address: Tele No., Fax No. Telex No.

**2. Activity for which authorisation is sought:**

(i) Generation

(ii) Collection

(iii) Reception

(iv) Storage

(v) Transportation

(vi) Treatment

- (vii) Disposal
- (viii) Any other form of handling

3. Please state whether applying for fresh authorisation or for renewal:  
(In case of renewal previous authorisation-number and date)

4. (i) Address of the institution handling bio-medical wastes:

(ii) Address of the place of the treatment facility:

(iii) Address of the place of disposal of the waste:

5. (i) Mode of transportation (in any) of bio-medical waste:

(ii) Mode(s) of treatment:

6. Brief description of method of treatment and disposal (attach details):

7. (i) Category (see Schedule 1) of waste to be handled

(ii) Quantity of waste (category-wise) to be handled per month

## 8. Declaration

I do hereby declare that the statements made and information given above are true to the best of my knowledge and belief and that I have not concealed any information.

I do also hereby undertake to provide any further information sought by the prescribed authority in relation to these rules and to fulfill any conditions stipulated by the prescribed authority.

Date : Signature of the Applicant

Place : Designation of the Applicant

**FORM II** (see rule 10)

**Annual Report**

(To be submitted to the prescribed authority by 31 January every year).

1 . Particulars of the applicant:

(i) Name of the authorised person (occupier/operator):

(ii) Name of the institution:

Address

Tel. No

Telex No.

Fax No.

2. Categories of waste generated and quantity on a monthly average basis:

3. Brief details of the treatment facility:

In case of off-site facility:

(i) Name of the operator

(ii) Name and address of the facility:

Tel. No., Telex No., Fax No.

4. Category-wise quantity of waste treated:

5. Mode of treatment with details:

6. Any other information:

7. Certified that the above report is for the period from

Date .....

Signature.....

Place.....

Designation.....

**FORM III** (see Rule 12)

**Accident Reporting**

1. Date and time of accident:
2. Sequence of events leading to accident
3. The waste involved in accident:
4. Assessment of the effects of the accidents on human health and the environment
5. Emergency measures taken
6. Steps taken to alleviate the effects of accidents
7. Steps taken to prevent the recurrence of such an accident

Date .....

Signature.....

Place.....

Designation.....

**FROM IV [see rule 8(4)]**

(Authorisation for operating a facility for collection, reception, treatment, storage transport and disposal of biomedical wastes.)

1. File number of authroisation and date of issue

.....

2.....of.....is hereby granted an authorisation to operate a facility for collection, reception, storage, transport and disposal of biomedical waste on the premises situated at

.....

3. This authorisation shall be in force for a period of .....Years from the date of issue.

4. This authorisation is subject to the conditions stated below and to such other conditions as may be specified in the rules for the being in force under the Environment (Protection) Act, 1986.

Signature.....

Date.....

Designation .....

**Terms and conditions of authorisation\***

1. The authorisation shall comply with the provisions of the Environment (Protection) Act, 1986, and the rules made thereunder.

2. The authorisation or its renewal shall be produced for inspection at the request of an officer authorised by the prescribed authority.

3. The person authorised shall not rent, lend, sell, transfer or otherwise transport the biomedical wastes without obtaining prior permission of the prescribed authority.

4. Any unauthorised change in personnel, equipment or working conditions as mentioned in the application by the person authorised shall constitute a breach of his authorisation.

5. It is the duty of the authorised person to take prior permission of the prescribed authority to close down the facility.

\* Additional terms and conditions may be stipulated by the prescribed authority

**FORM V [see rule 13]**

Application for filing appeal against order passed by the prescribed authority at district level or regional office of the Pollution Control Board acting as prescribed authority or the State/Union Territory level authority.

1. Name and address of the person applying for appeal:
2. Number, date of order and address of the authority which passed the order, against which appeal is being made (certified copy of order to be attached)
3. Ground on which the appeal is being made
4. List of enclosures other than the order referred in para 2 against which appeal is being filed.

Date:

Signature  
Name & Address

*[F. No. 23(2)/96-HSMD]  
V. RAJAGOPALAN, Jt. Secy.*

Note: -- The Principal rules were published in the Gazette of India vide number S.O. 630 (E) dated 20-7-98, and subsequently amended vide S.O. 201(E) dated 6-3-2000.

*Source : Ministry of Environment and Forests*

*[F.No.23-2/96-HSMD]  
VIJAY SHARMA, Jt.Secy.*



**RECORD OF STAKEHOLDER CONSULTATION**

The baseline IC WM practices observed in various types of facilities during the site visits have been summarized in Table 1 below.

**TABLE 1: SUMMARY OF BASELINE PRACTICES IN VARIOUS FACILITIES**

Sl. No.	Nature of Facility	Presence of		Training imparted for IC and WM Practices	Overview of performance	
		IC Committee	WM Committee		IC practices	WM practices
1.	PHC	- NA -	- NA -	- not all health workers have received training.	- practised only in case of need and emergency, when the infection / HIV status of patient known.	- no waste segregation seen. Waste dumped in a pit.
2	SACS run VCCTC, PPTCT, Blood Bank, ART centres	- NA -	- NA -	- training and periodical orientation provided for all.	- practised in all most all cases. Disposable syringes, needles, gloves readily available.	- waste segregation practices not strictly followed as per the WM rules/guidelines.
3	DH centres	- Current IC & WM comm.- ittee formulated by municipality and not dedicated to the Hospital alone. - Do not meet regularly and not active.	- Current IC & WM comm.- ittee formulated by municipality and not dedicated to the Hospital alone. - Do not meet regularly and not active.	- not all health workers have received training. - no dissemination of information from trained workers to untrained workers -	- practise d in most of the cases. - As Disposable syringes, needles, gloves not easily available either workers (nurses) do not use gloves or go in for washed gloves, sterilized syringe; else ask patients to buy.	- waste segre-gation practices not strictly followed as per the WM rules/guidelines.
4	State run hospitals/	- Com- mittees	- Com- mittees	- not all health	- practised in most of the	- waste segre-gation

Sl. No.	Nature of Facility	Presence of		Training imparted for IC and WM Practices	Overview of performance	
		IC Committee	WM Committee		IC practices	WM practices
	tertiary health centres	prevail, but do not meet.	exist, but do not meet.	workers have received training. - no dissemination of information from trained to untrained workers -	cases. -As Disposable syringes, needles, gloves not easily available either workers (nurses) do not use gloves or go in for washed gloves, sterilized syringe; else ask patients to buy.	practices not strictly followed as per the WM rules/guidelines.

Additionally, the detailed state-wise observations of the facilities visited have been listed below.

## 1. STATE: MAHARASHTRA

**Table 1: Facilities Visited in Maharashtra**

Sr. No	Date	Contact Address	Facilities visited	Stake holders
1	3-2-2006	Office of the DHO Thane Zilla Parishad, Thane. Ph: 022-25382776	Office	<ul style="list-style-type: none"> <li>• Dr. Khade, D.H.O.</li> <li>• Dr. (Mrs.) Talegaonkar, Medical Officer In-charge - Training</li> </ul>
2	3-2-2006	Thane Civil Hospital, Thane	District level Hospital / Tertiary Health Centre – Blood Bank, AIDS awareness Cell	<ul style="list-style-type: none"> <li>• Dr. P. Chappalgaonkar, Dist. Civil Surgeon</li> <li>• Dr. Suhas S. Mohnalkar, Regional Blood Transfusion Officer – Blood Bank</li> <li>• Mr. Tadvi, Sanitary</li> </ul>

Sr. No	Date	Contact Address	Facilities visited	Stake holders
				Inspector <ul style="list-style-type: none"> <li>Dr. Ulhas Wagh, Dentist, Incharge of AIDS awareness Cell</li> </ul>
3	4-2-2006	Maharashtra State AIDS Control Society, Wadala, Mumbai	Office	<ul style="list-style-type: none"> <li>Dr. Pawar, Dy. Dir – IEC</li> </ul>

### **Office of the District Health Officer Thane Zilla Parishad, Thane.**

- The Office of the District Health Officer looks into the administration and supervises the functioning of 79 PHCs which fall in the rural area of Thane District.

Interviewee	Comments & Feedback	Observation / Remarks
Dr. A.P. Khade District Health Officer, Thane Zilla Parishad, Thane. (Maharashtra)	<ul style="list-style-type: none"> <li>PHC: ~ 6 bedded;</li> <li>Major work: family planning related activities, provides primary medical treatment, preventive work – immunisation, creating awareness in people, patients given syndromic treatment, conducts campaigns.</li> <li>has usually 2 doctors (total 11 persons including attendants).</li> <li>PHCs are provided with auto disabled syringes and disposable needles.</li> <li><b>Waste Management</b> <ul style="list-style-type: none"> <li>waste disposed in pit and buried.</li> <li>a few PHCs have needle destroyers (small electric furnaces to melt), molten metal thrown.</li> </ul> </li> </ul>	- informed by training officer and a doctor from PHC needle destroyers not available.
Dr. (Mrs) Talegaonkar In-charge – training of	- In-charge of 79 PHCs in rural areas.	

Interviewee	Comments & Feedback	Observation / Remarks
PHC health workers, Thane Zilla Parishad, Thane. (Maharashtra)	<ul style="list-style-type: none"> <li>• <b>Information regarding PHCs</b></li> <li>PHC would have               <ul style="list-style-type: none"> <li>- 1 MO - M.B.B.S., (Allopathic)</li> <li>- 1MO - B.A.M.S., (Ayurvedic / Unani / Homeopathic)</li> <li>- 1 Health Supervisors (male)</li> <li>- 1 Health Supervisor (female)</li> <li>- 1 ANM and 1 MPW (multi-purpose worker) each depending on the number of sub-centres.</li> <li>- Key officers – trained at Health and Family Welfare Training Centre, Pune; key officers in turn train others.</li> <li>- Auxiliary nurse midwife (ANM) – minimum education, 10<sup>th</sup> standard. Later would receive 1.5yrs training. Would know Hindi and regional language.</li> <li>- Anganwadi worker – local area woman – education, 8<sup>th</sup> std minimum. Would know regional language.</li> <li>- Attendants, education minimum 4<sup>th</sup> standard.</li> </ul> </li> <li>• <b>Practices of PHCs in Thane district</b></li> <li>- till last 1 month needles and syringes were sterilised and reused.</li> <li>- Auto-disposable syringes recently being supplied, even if available are insufficient in numbers.</li> <li>- No needle crushers available.</li> <li>- To date the importance of IC and WM are not realised.</li> </ul>	

### **Thane Civil Hospital, Thane**

Is a tertiary health centre. The Hospital also has a Blood Bank and an AIDS awareness cell.

### **Overview of Training programme regarding IC & WM Practices**

- Training / orientation programme on Infection Control and Waste Management Practices provided.
- Training involved information about using PPE, PEP and segregation of bio-medical wastes and their disposal.

#### **Overview of the Infection Control measures adopted**

- Use of personal protective equipment like gloves and masks during day to day operations by health workers at all levels in all wards and blood bank.
- Awareness of Universal Precautions (UP) and PEP prevails and health workers of all cadres follow the same.

#### **Overview of the Waste Management Practices adopted**

##### **A. Within the facility:**

- Segregation of wastes is as per the guidelines of regulatory agencies - DHS / NACO.
- Segregated wastes are collected and deposited at one place for disposal.

##### **B. Outside the facility:**

- Waste is collected from the hospital by the state government authorized disposer and is incinerated at Kalwa, wherein the incinerator is located.

Interviewee	Comments & Feedback	Observation / Remarks
<p>Dr. Suhas S. Mohnalkar, M.D., (Pathology) Incharge – Blood Bank Regional Blood Transfusion Officer, Thane Civil Hospital, Thane.</p>	<ul style="list-style-type: none"> <li>• <b>Infection Control Practices</b> <ul style="list-style-type: none"> <li>- disposable mask, gloves provided for all doctors, nurses and technicians in all wards, OTs and Blood Bank.</li> <li>- Disposable needles and syringes used at all levels in the hospital.</li> <li>- Needles after use are cut using an electro-mechanical crusher.</li> <li>- Cut needle is stored in the bin of crusher which has Sodium hypochlorite solution (disinfectant).</li> <li>- Remaining blunt needle, syringe and sharps put in a transparent plastic jar containing Sodium hypochlorite solution.</li> <li>- Carrier boy handling biowaste given plastic apron, gum boot, pant, mask and shirt (thick plastic, washable)</li> </ul> </li> <li>• <b>Biowaste management</b> <p>‘Parivakshina’ an NGO from Andhra Pradesh organised a workshop on ‘Bio-Waste Management Programme’ in 2002 which is implemented through out the hospital.</p> <ul style="list-style-type: none"> <li>- At all wards available: <ul style="list-style-type: none"> <li><b>A White bin having a white polythene bag within:</b> to collect all waste, empty paper box, kitchen waste, paper, etc.,</li> <li><b>A Blue bin having a blue polythene bag within:</b> to collect all plastic material, catheter, rails tube, gloves, plastic syringes, expired drugs, etc.,</li> <li><b>A Yellow bin having a yellow polythene bag within:</b> to collect all bandages, gauges, blood contents, pathological wastes, placenta, umbilical cord, appendicitis, aborted biological waste, etc., This contains Sodium hypochlorite solution.</li> </ul> </li> </ul> <p><b>Blood Bank practices</b></p> <ul style="list-style-type: none"> <li>- in the 1<sup>st</sup> stage blood sample tested for Hb, grouping. Patient later tested his BP, weight, Ht and medical history.</li> <li>- If patient found suitable to be a donor</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- Practices as mentioned as regards IC and WM prescribed by the regulating agencies seen strictly followed.</li> <li>- All wards contained charts as regards Waste segregation.</li> <li>- All health workers seen wearing gloves.</li> <li>- All wards had needle crushers and waste bin with waste appropriately segregated</li> </ul>

	<p>consent form is signed from him.</p> <ul style="list-style-type: none"> <li>- 300ml blood taken from the donor.</li> <li>- Blood taken is tested for malaria, VDRL test for syphilis, Hepatitis B and C and HIV.</li> <li>- If any of the results found +ve blood along with bag is discarded. Blood bag infused with 5% Sodium hypochlorite solution, kept for 30 minutes, boiled to 121°C for 1 hour. Blood bag which gets crumpled is disposed to incinerator.</li> </ul> <p><b><u>Training Programme:</u></b></p> <ul style="list-style-type: none"> <li>- staff trained yearly or bi-annually.</li> <li>- Staff oriented to bio-safety measures.</li> <li>- Reoriented with regular and new practices.</li> </ul>	
<p>Mr. Tadvi, Sanitary Inspector, Thane Civil Hospital, Thane. (Maharashtra)</p>	<ul style="list-style-type: none"> <li>- all biowaste put in bags ~ of 10kgs capacity, weighed, labelled, Sodium hypochlorite solution is sprinkled above all bags and handed over to the waste disposing /incinerating agency.</li> <li>- the needles, syringes and sharps from the transparent plastic jar collected in another container and handed over to the waste disposing agency.</li> </ul> <p>All waste – bio and otherwise sent to the incinerator at Kalwa.</p>	

**Table 2: Facilities Visited in West Bengal**

<b>Sr. No</b>	<b>Date</b>	<b>Contact Address</b>	<b>Facilities visited</b>	<b>Stake holders</b>
1	6-2-2006	Carmichael School of Tropical Medicine, Kolkatta.	Tertiary Speciality Hospital associated with Kolkatta Medical College – ART center	<ul style="list-style-type: none"> <li>• Dr. Guha Asst. Professor in Tropical Medicine, associated with the HIV programme at the ART center.</li> <li>• Prof. N.K. Paul, H.O.D. – Microbiology, I/c IC and WM</li> <li>• Dr. Shah, in-charge of ART centre</li> </ul>
2	6-2-2006	State Medical College, Kolkatta	Teaching hospital – PPCTC centre	<ul style="list-style-type: none"> <li>• Ms. Shatrupa, Counsellor</li> <li>• Ms. Paromita Sen, Technician</li> <li>• Ms. Phuleshwari Ghosh, Technician</li> </ul>
3	6-2-2006	N.R. Medical College, Kolkatta	VCTC centre	<ul style="list-style-type: none"> <li>• Ms. Shakuntala, Technician</li> <li>• Dr. Banerjee, Medical Officer – In-charge, VCTC</li> <li>• Mr. Anup Roy, Technician</li> </ul>
4	7-2-2006	Society for Community Intervention and Research, 2/2, Tilajala Road, Kolkatta 700 046.	NGO working on Needle Exchange Programme, HIV + patients, IDVs	<ul style="list-style-type: none"> <li>• Mr. Debashish, Counsellor</li> <li>• Mr. Rajkumar, Peer Educator</li> </ul>
5	7-2-2006	IIPGMR-SSKM Hospital 244 AJC Bose Road, Kolkatta 700 020.	Tertiary Teaching Super-Speciality Hospital – wards, Blood Bank, VCTC Centre	<ul style="list-style-type: none"> <li>• Dr. Santanu K. Tripathi, Prof. in Pharma-cology, Medical Superintendent</li> <li>• Ms. Gauri Kundu, Sister In-charge</li> <li>• Ms. Deepika, Technician</li> <li>• Dr. Urpita, Medical Officer In-charge Blood Bank</li> <li>• Ms. Bharati Bhar, Sister In-charge</li> </ul>
6	7-2-2006	Durbar Mahila Samanwaya Samiti, 12/5, Nilmoni Mitra Street, Kolkatta 6.	NGO working with STD/HIV Intervention Programme and commercial sex workers	<ul style="list-style-type: none"> <li>• Dr. Protim Ray, Doctor In-Charge</li> </ul>
7	8-2-2006	Howrah District Hospital, Howrah.	District Level Hospital – STD Clinic, Blood	<ul style="list-style-type: none"> <li>• Dr. S. Chakraborty, Medical Superintendent</li> <li>• Ms. Sushmita Nag, Asst.</li> </ul>

<b>Sr. No</b>	<b>Date</b>	<b>Contact Address</b>	<b>Facilities visited</b>	<b>Stake holders</b>
			Bank, PPCTC	Med. Supdt. <ul style="list-style-type: none"> <li>• Dr. Dhara S.K. In-Charge, STD Clinic</li> <li>• Ms. Bithika Chakravarty, Sister In-Charge Blood Bank</li> <li>• Mr. Dhruva Gopal Shah, Technician – Blood Bank</li> <li>• Ms. Sushmita, Staff Nurse</li> <li>• Mr. Mohammad Ghousia, In-Charge, Autoclaving facility</li> </ul>
8	8-2-2006	Sembramky Environmental Management Pvt. Ltd., 'F' Road, Belgachia, Howrah 711 105.	Incinerator Facility	<ul style="list-style-type: none"> <li>• Mr. Sandip Datta, Gen. Mgr – Operations</li> <li>• Mr. Krishnendu Datta, Mgr – Plant Operations &amp; QEHS</li> </ul>
9	8-2-2006	Ministry of Health Services, Swasthya Bhawan, Salt Lake City, Kolkatta.	Offices of the Directors - Ministry of Health Services	<ul style="list-style-type: none"> <li>• Dr. K.C. Barvi, Director – Health Services</li> <li>• Dr. Jayashree Mitro, Director – Medical Education</li> <li>• Dr. Dutta S.N. Jt. Director – Waste Management Practices</li> </ul>
10	8-2-2006	West Bengal State AIDS Prevention & Control Society – WBSACS, Swasthya Bhawan, Salt Lake City, Kolkatta 91.	Office of WBSACS	<ul style="list-style-type: none"> <li>• Mrs. Ratna Kotal, Nodal Officer – Nursing</li> <li>• Shri. S. Suresh Kumar, Project Director - WBSACS</li> </ul>

## **Carmichael School of Tropical Medicine 88, College Street, Kolkata**

### **General overview of Facility:**

Is a tertiary health care centre. The hospital is attached to the Calcutta Medical College. The Hospital runs an HIV related Fellowship course in association with Calcutta Medical College to cater to 15 students (9 government seats + 9 non-governmental seats) of North-Eastern states.

The Hospital has an ART centre. WB SACS has recently renovated the centre, installed AC and semi-auto analyser.

The hospital was started during the pre-independence period to treat the diseases prevalent in tropical countries like malaria, filaria, kala azar, leprosy, anaemia, etc.

The hospital is a state government funded, having 8 general wards. Amongst the 150 beds 109 beds are free and the remaining 41 are pay beds, which are moderately charged @ Rs.46/day. There are also 6 private cabins wherein the patients are charged Rs.75/day. Patients who get admitted mainly are from the lower economic strata. The hospital provides the commonly supplied medicines, IV fluids free and patients have to buy the rest prescribed.

Apart from the teaching faculty and doctors the hospital has 21 nurses (who have more than 20 years of experience) working in 3 shifts. There are 24 Diploma students and 15 M.D. students.

The hospital has no Emergency section / facility. The HIV/AIDS patients are not discriminated against and are housed and treated along with non-HIV/AIDS patients.

Patients are admitted through OPD and critical patients are referred to the Medical College.

There are no learning / information imparting charts, posters displayed to educate either the health workers or the patients.

### **Overview of Training programme regarding IC & WM Practices**

- There is no structured IC scheme.
- There is confusion as regards the administration and functioning as no clear guidelines exist about the governing role of Medical College and of the Hospital.
- No training as regards IC & WM practices given.

### Overview of the Infection Control measures adopted

- No disinfection scheme.
- Even though personal protection facilities like gloves, masks available general cleanliness, hygiene in the hospital and wards not prevailing.

### Overview of the Waste Management Practices adopted

#### A. Within the facility

- Segregation not done at source.
- Segregation and disposal practices not followed.
- Wastes are collected and deposited at one place for disposal.

#### B. Outside the facility

- Waste is collected from the hospital by the state government authorized disposer and is incinerated by SembRamky Environmental Management Pvt. Ltd., Howrah wherein the incinerator is located.

Interviewee	Comments & Feedback	Observation / Remarks
<p>Dr. Guha Asst. Professor in Tropical Medicine, Associated with the HIV programme at the ART centre of Hospital, Carmichael School of Tropical Medicine, Kolkata.</p>	<p>- HIV patients treated along with mainstream patients and not discriminated against</p> <p>- Nearly 50% HIV patients can be seen admitted at most of the times.</p> <ul style="list-style-type: none"> <li>• <b>Overview of IC and WM practices</b></li> <li>* No guidelines/documents as regards IC and WM practices sent if any by DHS traceable.</li> <li>* Prof. N.K. Paul, HOD of Microbiology is in-charge of IC and WM practices. Hospital has IC committee and Blood Transfusion committee. But these are not functioning.</li> <li>* Committees comprise of Medical Superintendent, Microbiologist, Ward Master, etc.,</li> <li>• <b>Infection control practices</b></li> <li>* Use of personal protective equipment like gloves available for junior doctors, nurses and housekeeping personnel.</li> <li>* Disposable syringes (plastic) are used.</li> <li>* After usage needles thrown and syringes put in a Sodium hypochlorite solution of concentration 1:10.</li> </ul>	<ul style="list-style-type: none"> <li>• General cleanliness in the hospital quite low.</li> <li>• Cleanliness, hygiene not maintained. Fans/beds very dirty.</li> <li>• Cats roam in the hospital/wards.</li> </ul>

Interviewee	Comments & Feedback	Observation / Remarks
	<p>* No structured IC scheme. IC committee not separate for Hospital; is common for Medical College and Hospital.</p> <p>* No disinfection scheme.</p> <ul style="list-style-type: none"> <li>• <b>Waste Management</b></li> </ul> <p>* Yellow poly bags are used for disposing bandages, cotton, gauges.</p> <p>* Blue polybags are used to dispose gloves, syringes.</p> <p>- earlier medical waste was also collected by the Calcutta Municipal Corporation and was dumped at Dhampa in pit.</p> <p>- recently since the last year bio-medical waste collected at one disposal point is picked up by the government authorised agency which takes it to the incinerator at Howrah.</p>	<p>* waste segregation practices not clearly followed.</p>

## ART Centre at Carmichael School of Tropical Medicine 88, College Street, Kolkata

### Overview of Training programme regarding IC & WM Practices for counselors:

- Training programme on Infection Control and Waste Management practices provided.
- Training involved information of PPE and PEP and segregation of wastes and their disposal.

Interviewee	Comments & Feedback	Observation / Remarks
<p>Dr. Guha Asst. Professor in Tropical Medicine, Associated with the HIV programme at the ART centre of Hospital, Carmichael School of Tropical Medicine, Kolkata.</p>	<p>* <i>Overview of ART Centre</i></p> <ul style="list-style-type: none"> <li>• Patients given individual card</li> <li>• 799 patients registered since 29-3-2005</li> <li>• 1397 free RT registered earlier, but not received therapy for mostly medical reasons.</li> <li>• TB patients referred from DOT programme come.</li> <li>• Male patients are to bring wives (mandatory made from the Centre), else family member if not married.</li> <li>• Women patients to be accompanied</li> </ul>	

	<p>by a family member if separated from husband.</p> <ul style="list-style-type: none"> <li>• Widows not necessarily to be accompanied by a family member.</li> <li>• Sex worker is to be accompanied by a peer, if not a family member.</li> <li>• Since 31-1-2006 registered for ART: <ul style="list-style-type: none"> <li>- male patients – 589</li> <li>- female patients – 179</li> <li>- children - 23</li> </ul> </li> <li>• Family support of patients good.</li> <li>• PLHS at ART centre – 1/3<sup>rd</sup> patients are from Bihar, Jharkand, Orissa.</li> </ul> <p><i>As regards WBSACS</i></p> <ul style="list-style-type: none"> <li>• Problems faced on operational issues are reported to WBSACS, thus to NACO. And in turn NACO takes up matters with WHO.</li> <li>• WBSACS prompt and fast in solving problems.</li> <li>• ART centres of Midnapur Medical College and North Bengal Medical College trained by WBSACS and of Bardhwan Medical College trained at JJ Hospital, Mumbai.</li> </ul> <p><b>Limitations/problems faced and related suggestions</b></p> <ul style="list-style-type: none"> <li>• Reports sent monthly to WBSACS and 6 monthly to WHO (Cohet Analysis) do not have provision to include any observations/suggestions.</li> <li>• Having and maintaining data as hard copies difficult. Suggested to NACO and to WHO to have software package developed as quality related issues are looked after by WHO.</li> <li>• Monthly report format changed 3 times in 9 months by WBSACS which is inconvenient.</li> <li>• Formats for reporting to different agencies like WHO, WBSACS and NACO are different. Thus, inconvenient to maintain data.</li> </ul> <p>Preferrable - to have a single nodal</p>	
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	<p>agency.</p> <ul style="list-style-type: none"> <li>• Presently medicines are supplied by WBSACS. At times, there is shortage of medicines supply for 4-5 months. ART centres maybe given a provision, free hand to procure medicines, in case of need and emergency.</li> </ul> <p>* More autonomy and financial support be given to ARTs.</p>	
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### **PPTCT Centre, State Medical College, Kolkata**

Functioning since 1<sup>st</sup> January 2004, it is attached to the teaching hospital of the State Medical College. The centre is run by WBSACS and is headed by the Head of the Department of Obstetrics and Gynaecology, for smooth and effective functioning also for better co-ordination with the Hospital.

The centre has 2 counsellors and 2 technicians.

<b>Interviewee</b>	<b>Comments &amp; Feedback</b>	<b>Observation / Remarks</b>
<p>Ms. Shatrupa Counsellor - PPTCT Centre, [M.A., (Sociology); undergone Counsellor training given by WBSACS for 7 days.] State Medical College, Kolkata.</p>	<ul style="list-style-type: none"> <li>- Any pregnant woman upon registration at the Hospital OPD is directed to PPTCT centre.</li> <li>- Patient is given pre-test counselling in a group about nutritional requirements, HIV testing, treatment, etc., - orally as well as by the use of audio-visuals.</li> <li>- Patient asked to sign the voluntary consent form before testing.</li> <li>- Blood sample collected in the laboratory.</li> <li>- By the time patient visits doctor and undergoes routine tests, in ~ 1.5hrs report is ready.</li> <li>- Test results given to the patient the same day on a 1:1 basis.</li> <li>- If patient is HIV +ve then is put on follow-up until and after delivery, also is referred to VCCTC.</li> <li>- Patient advised to return with spouse and</li> </ul>	<ul style="list-style-type: none"> <li>- Confidentiality of counselling limited due to thin partition between counselling chamber and waiting area.</li> <li>- No posters seen.</li> </ul>

Interviewee	Comments & Feedback	Observation / Remarks
	<p>child after counselling.</p> <ul style="list-style-type: none"> <li>- During delivery Nevarapin tablet administered to mother and Nevarapin tonic for child.</li> <li>- The baby is tested for serostatus after 18 months.</li> </ul> <p>* to date 14878 patients registered since 1<sup>st</sup> January 2004, of which 83 have tested +ve for HIV.</p> <p><b>Performance review:</b> Quarterly review of performance of counsellors done by going through their monthly reports and on patients' reporting to Centres for follow-up counselling (even after delivery). Also on the report of nodal officers.</p> <p><b>Problems faced:</b></p> <ul style="list-style-type: none"> <li>- Lack of space so that counselling can be done confidentially</li> <li>- Resistance from Medical College staff, as the people of centre are appointed by WBSACS.</li> <li>- Requires a lot of running around due to non-co-cooperation from hospital authorities.</li> </ul>	
<p>Ms. Paromita Sen [D.M.L.T., + training in HIV/AIDS provided by WBSACS-3 days + 1 day Technician – PPTCT</p> <p>Ms. Phuleshwari Ghosh [B.Sc., D.M.L.T., + training in HIV of 3 days provided by WBSACS] Technician – PPTCT</p>	<ul style="list-style-type: none"> <li>- On 6/2/06, date of visit, 53 samples collected.</li> <li>- Testing time ~ 30 minutes / sample.</li> <li>- Results given to counsellors so that the patients can collect it on the same day, after 3 hours.</li> </ul> <p><b>Training on job organized by WBSACS:</b></p> <ul style="list-style-type: none"> <li>- technicians have refresher course/ training – 1 regarding regular technician training + 2 on quality control training + 1 training on testing.</li> </ul> <p><b>IC and WM practices:</b></p> <ul style="list-style-type: none"> <li>- wears gloves.</li> <li>- sharps put in separate bucket</li> <li>- gloves, syringes, gauges in separate bucket</li> </ul>	<ul style="list-style-type: none"> <li>- No posters seen.</li> <li>- Not aware of WM rules/guidelines.</li> <li>- No segregation of waste</li> <li>- Not aware of PEP</li> <li>- No hypochlorite / bleach solution in needle cutter bin also bucket – at testing and collection.</li> </ul>

### VCCTC Centre, N.R. Medical College, Kolkata

Counselling centre started in Sept/November 2002 and VCCTC started in April 2003.

Interviewee	Comments & Feedback	Observation / Remarks
Mrs. Shakuntala Counselor – VCCTC	<ul style="list-style-type: none"> <li>- VCCTC follows protocol as laid by WBSACS.</li> <li>- patients referred from:               <ul style="list-style-type: none"> <li>- doctors who can be admitted to the hospital or otherwise (~300 cases / month)</li> <li>- voluntary patients (~ 30-40 cases / month).</li> </ul> </li> <li>- Patient visits counselor– confidentiality encouraged.</li> <li>- Patient fills consent form. A number is assigned to each patient to maintain anonymity, and remove stigma.</li> <li>- Sent to laboratory for sample collection.</li> <li>- Report maintains anonymity – patient identified by his number only, patient’s name not revealed.</li> <li>- For in-ward patient report given to patient’s if not for legal relatives or doctors.</li> <li>- For voluntary patients, reports handed over to patients in person.</li> <li>- Patients advised to get their partners along with them.</li> <li>- Patients given pamphlet to understand / be educated about HIV/AIDS.</li> </ul>	<ul style="list-style-type: none"> <li>- Enclosed, separate room, enough space with posters, confidentiality possible.</li> </ul>
Dr. Banerjee Medical Officer, In-charge - VCCTC	<ul style="list-style-type: none"> <li>- Awareness created about HIV/AIDS, VCCTC, etc., in cable network.</li> <li>- 30% voluntary cases visit VCCTC.</li> <li>- People aware of disposable syringes.</li> <li>- Adequate supply by WBSACS for UP and PEP measures.</li> <li>- Monthly reports sent to WBSACS.</li> </ul>	
Mr. Anup Roy B.Sc., (Bio-Sciences) D.M.L.T.	<ul style="list-style-type: none"> <li>- On 6/2/06 day of visit, 20 tests done; 2 turned HIV +ve.</li> <li>- 5% hypochlorite solution maintained for disposal of reactive sample – gloves, and 2% for non-reactive sample.</li> <li>- Used cotton is collected in a polybag, later transferred to a central bin.</li> <li>- Needles/syringes immersed in hypochlorite solution in a polybag and later</li> </ul>	<ul style="list-style-type: none"> <li>- Central collecting bin not seen.</li> <li>- All hospital waste collected by state govt. authorized external agency to an incinerator at</li> </ul>

Interviewee	Comments & Feedback	Observation / Remarks
	<p>put to central bin which goes to KMC collection facility.</p> <ul style="list-style-type: none"> <li>- After testing, blood samples kept for 6 months (for documentation and in case reconfirmation be required)</li> <li>- Blood serum later put in hypo solution and later NGO picks up for disposal, twice a week.</li> </ul> <p><b>About IC and WM practices:</b></p> <ul style="list-style-type: none"> <li>- Aware of UP, but not of PEP.</li> <li>- No proper segregation and management of waste seen.</li> </ul>	Howrah.

**Society for Community Intervention and Research (Reg. No.: S/8447)  
2/2, Tilajala Road, Kolkata**

Has a detoxification centre. Has Needle Exchange Programme - works with IDVs, drug-addicts/therapists; oral substitution therapy – drug addicts attempting to withdraw and administers abscess management. Society has 4 drop-in centres and has tied up with other NGOs working in Kolkata and surroundings.

Society provides training in printing, gardening, etc., an alternate profession to drug addicts attempting to be rehabilitated.

Society is associated with NACO and WBSACS. Society is also linked with KNP+ (Kolkata Network for Positive People)

**Overview of Training programme regarding IC & WM Practices**

- Training / orientation programme on Infection Control and Waste Management Practices provided by WBSACS.
- Training involved information of UP, PEP and segregation of bio-wastes and their disposal.

**Overview of the Infection Control measures adopted**

- Use of personal protective equipment like gloves and masks during day to day operations by health workers.
- Awareness of UP and PEP prevails and health workers.

## **Overview of the Waste Management Practices adopted**

### **A. Within the facility:**

- a. 1% hypochlorite solution in a polybag is placed in a bin. The waste is collected in this polybag, later transferred to a box and handed over to KMC – which usually collects once in a week.
- b. In case KMC authorities do not come to collect, then waste is dropped in the backyard and burnt.

### **B. Outside the facility:**

- Not aware of disposal practices followed by Kolkata Municipal Corporation.

<b>Interviewee</b>	<b>Comments &amp; Feedback</b>	<b>Observation / Remarks</b>
Mr. Debashish {B.Com., M.S.W., training at KRIPA foundation, 6 days training at WBSACS etc.,} - Working with Society as counsellor for 6 months. - Supervisor – Calculation Methodology at the Society Mr. Rajkumar Peer [8 <sup>th</sup> pass] Assistant – Abscess Management	- Society has 4 drop-in centres. Any patient coming first time to any of the 4 drop-in centres referred to VCCTCs for HIV confirmatory tests. - HIV+ cases in community referred to KNP +, an NGO. - ~ 70 people come daily. - conducts counselling sessions, holds group discussions, organizes and monitors self help groups - Supervises and takes care of patients who refuse hospitalization.	- Not aware of disposal practices as followed by KMC.

## **Institute for Post-Graduate Medical Education and Research IPGMER -SSKM Hospitals, 244 AJC Bose Road, Kolkata**

Is a state government funded super-speciality teaching hospital having 1600 beds. Has strength of 1500 nurses. Has facility to treat 50 critically ill patients and has 20 OTs.

Nearly 30% of the patients admitted are treated free if they are recommended from the medical / academic institutions, state employees, if referred from MP / MLAs.

### Overview of Training programme regarding IC & WM Practices

- Training given to a few doctors and nurses. Information not disseminated to all ranks and all strength.
- Sisters are not really aware about UP and PEP.
- Health workers not very cautious about following IC, WM also UP practices.

### Overview of the Infection Control measures adopted

- IC Committee has just been formed. Guidelines being framed.
- To follow UP - even though personal protection facilities like gloves, masks available are inadequate in number.
- General cleanliness, hygiene in the hospital and wards not prevailing.

### Overview of the Waste Management Practices adopted

#### **A. Within the facility:**

- a. Segregation not clearly done at source. Health workers not clear about waste segregation.
- b. Wastes are collected and deposited at one place for disposal.

#### **B.**

#### **Outside the facility:**

- Waste is collected from the hospital by the state government authorized disposer and is incinerated by SembRamky Environmental Management Pvt. Ltd., in Howrah wherein the incinerator is located.

<b>Interviewee</b>	<b>Comments &amp; Feedback</b>	<b>Observation / Remarks</b>
Dr. Santanu K. Tripathi Prof. in Pharmacology, Medical Supdt., - Vice-Principal	<b>IC policy and practice</b> <ul style="list-style-type: none"><li>- IC committee recently formed, has met twice, guide-lines being framed.</li><li>- IC committee comprises of a doctor + nurses + microbiologist</li><li>- Universal precautions followed.</li><li>- IC as part of House working being compiled.</li><li>- Not aware of general IC guidelines received from DHS or any other agency.</li></ul>	- Unable to give any information as regards committees, government guidelines issued by any authorising agency.

Interviewee	Comments & Feedback	Observation / Remarks
	<p><b>WM Policy and practice</b></p> <ul style="list-style-type: none"> <li>- WM committee present, Central guidelines available.</li> <li>- Nursing Superintendent supervises segregation practices.</li> <li>- Since last year government authorised agency collects hospital waste at Rs.2.40/bed to treat it at the incinerator Not aware how and where.</li> <li>- Waste segregated as bio and non-biowaste – as hazardous (sharps, needle, syringes) and non-hazardous (cotton, gauge, etc.,)</li> <li>- Segregation is problem due to attitudinal reasons.</li> </ul> <p>Sister: Patient ratio is to be ideally 1:5 in general wards but for practical purposes seen usually as 1:10.</p> <p>Suggestions:</p> <ul style="list-style-type: none"> <li>- Hospitals should have more autonomy.</li> <li>- Government should take care of immunisation of medical staff against hepatitis, etc.,</li> <li>- Primary reason for IC and WM problem is lack of co-ordination and awareness.</li> <li>- Requires motivation and continuous monitoring for the success of any programme.</li> <li>- Staff overburdened, vacancies need to be filled.</li> </ul>	
<p>Ms. Gauri Kundu Sister In-charge Cardiology ward 1 &amp; 2 (exp: 5yrs in this hospital, total exp: 20 yrs)</p>	<ul style="list-style-type: none"> <li>- Disposable syringes used – very few supplied by the government. Rest patients buy.</li> <li>- Needle cut in a mechanical cutter and later disposed in a polybag kept in a bin with 2% bleaching solution along with gloves, needle, plastic covers.</li> <li>- Sweepers dispose waste as per their wish, don't use gloves.</li> <li>- Floor cleaning – twice a day with</li> </ul>	<ul style="list-style-type: none"> <li>- No posters</li> <li>- No safety practices followed.</li> <li>- Fans, cots very dirty.</li> <li>- Rats in toilet</li> <li>- Dirty wards, unhygienic situation prevails</li> <li>- No hypochlorite solution seen in needle cutter nor waste</li> </ul>

Interviewee	Comments & Feedback	Observation / Remarks
	phenol - Not clearly aware of PEP practices.	bin. - No segregation of hospital and bio-medical waste seen.
Ms. Deepika D.M.L.T. - Technician Blood Bank attached to VCCTC  Dr. Urpita M.B.B.S., Incharge of Blood Bank	- blood sample after testing in a test tube is kept for 7 days and later disposed, by putting it in acid hypochlorite - enough supply of essentials from WBSACS	- Technician not using gloves. - No segregation of cotton, tubes, non-hazardous waste. - No posters seen - Building undergoing renovation.
Laboratory (Blood Testing & Collection Centre) VCCTC	- Syringe and needle after use bent and put in a plastic jar containing hypo chlorite solution. - Gloves thrown out after use in another room	- No needle crusher / cutter available thus bent. - No use of gloves seen seen. - Enough posters of PEP seen. - Building undergoing renovation.
Sister in-charge Woodburn ward (special wards)	- Payment Rs.400/day for a single ward - Payment Rs.300/day for a double ward - extra payment of Rs.50/day for AC - no attached bathrooms - Blood, etc., put in Red polybag. - Gloves in Black bag. - Syringes, needles after cutting put in polybag with hypo solution.	- No correct practices of waste segregation / disposal seen - syringes seen in dust bin - hypochlorite solution not used.
Ms. Bharati Bhar Sister in-charge (exp: 2 yrs in this hospital total exp: 21 years) Operation Theatre besides Woodburn Ward	- OT disinfected everyday with carbolic solution and on Sundays thoroughly washed. - OT and all facilities washed and autoclaved - Gloves are sterilised and reused - Syringes and needles disposable - Swab, cotton, disposed	- No needle crusher or hypochlorite solution seen. - All waste disposed in a single poly-bag (Red) with no hypo-chlorite soln - Gowns not autoclaved - Sisters

Interviewee	Comments & Feedback	Observation / Remarks
	in red polybag - Yellow polybag used for gauge, bandages - Sink cleaned with acid – once a week.	not aware of hand wash procedure. - Sink stinks with thick dirt coating. - No waste segregation followed. - Autoclave drum also dirty.

**Darbar Mahila Samanwaya Samiti**  
**12/5 Nilmoni Mitra Street, Kolkata**

Runs many programmes under the Sexual Health Intervention programme like

- SHIP - STD/HIV Intervention Programme.
- GBIP – Ganga Bhagirathi Intervention Programme.
- North Bengal Project
- Ultadanga Street based intervention programme.

Sexual Health Intervention programme started in February 1992. Has 19 clinics in Kolkata and Howrah also 4 more clinics in West Bengal.

**Work Methodology**

**Programme/project is a peer based programme. Has more than 400 peer educators who create health awareness amongst sex workers and other commercial workers.**

The peer educators go round the locality, motivate sex workers and their clients to visit clinics. Clinics even though projected as general in nature (to prevent stigma) test and treat for STDs and work for condom promotion.

Peer educators speak and explain of behavioural change using exhibits, lecture-demonstration, using flip-charts, etc.

Along with the above said activities condom promotion is done peer educators and commercial sex workers are informed of the importance and the necessity of condom usage and condom disposal.

**Clinics:**

- Clinics are funded by WBSACS.
- Have 1 doctor + 1 sister (qualified who has also undergone a 3 month training for VDRL) and a counsellor.
- Have facilities for blood examination.
- Medicines supplied free of cost.
- All clinics have 1-2 sets of PEP kits.

**Overview of Training programme regarding IC & WM Practices**

- Training given all health workers and counsellors also peer educators as regards IC & WM practices given.

**Overview of the Infection Control measures adopted**

- UP – disposable gloves used for injecting, drawing blood, examination of every patient in all the clinics.
- Hypochlorite solution (of 4% conc.) within polybag placed in a bin.
- Needles after use are cut using either crushers or mechanical cutters, put in hypochlorite solution containing bags along with cotton, gloves, etc.,

**Overview of the Waste Management Practices adopted**

Even though all the health workers and peer educators are aware of waste segregation and management practices, they are unable to follow them and pass the waste to the agency handling hospital waste for the strict and complex regulations posed by Incinerator managing agency – like permissions of Municipal corporations, health and sanitation departments, etc.,

**A. Within the facility**

- Segregation not done at source.

- Polybags containing waste passed on to KMC on a daily basis.

## B. Outside the facility

- Waste bags passed on to KMC on a daily basis.
- Unaware how it is treated and where disposed finally.

Interviewee	Comments & Feedback	Observation / Remarks
Dr. Protim Roy Doctor in-charge	<p>- Autoclave of capacity 30,000 specula in 1 drum – facility at the central office. Disinfected specula kept in hypochlorite solution. All clinics of Kolkata collect from the central office.</p> <p>- Clinics outside Kolkata have small pressure cooker like autoclaves.</p> <p>- Sex workers educated on health aware-ness, use of condoms, condom disposal and not all sex workers are aware of condom rupture.</p> <p>- Average patients visiting clinics is 30 – 35 /day.</p> <p>- Patients treated for STI diseases. If not cured then either referred to VCCTC or blood is drawn and sent to NIMD for testing.</p> <p>- Submits monthly and quarterly reports to WBSACS</p> <p>- Problems faced with suggestions sub-mitted to WBSACS which have been redressed.</p> <p><b>Limitations / Problems faced</b></p> <p>- Most of the clinics are rented wherein the premises during the evenings work as social clubs. Thus unable to follow all waste segregation Practices.</p> <p>- Waste in a polybag kept in safe places and on the next day passed on to KMC.</p> <p>- Not feasible to pass on the waste to the Incinerating agency as they demand to adhere by strict rules and regulations, demand trade licences, authorised permission from Pollution Control Board, etc.,</p>	

Interviewee	Comments & Feedback	Observation / Remarks
	<p><b>Recommendations for problems faced</b></p> <ul style="list-style-type: none"> <li>- Rules be simplified so that waste can be segregated and passed to the incinerating agency.</li> <li>- Nursing homes and hospitals in the vicinity be authorised to collect waste from clinics run by NGOs and passed on to Incinerating agency.</li> <li>- Preferable if a clinic can have small autoclave which may cost ~ Rs.30,000=00 (inclusive of cost of drum + electricity charges of Rs.~500/month)</li> </ul>	

### **Howrah District Hospital, Howrah**

Is a 510 bedded state government run hospital wherein 70% of the beds are treated free and the rest 30% are for the paid category (charged moderately at Rs.25/day). A patient in a free bed is treated free for surgery also general medicines, diet and IV fluids.

#### **Overview of Training programme regarding IC & WM Practices**

- Structured IC scheme.
- A few doctors and nurses trained for IC and WM practices in the training programmes. Later information disseminated to others by Medical Superintendent.

#### **Overview of the Infection Control measures adopted**

- Good practices of disinfection in place.
- Personal protection facilities like gloves, masks available. General cleanliness, hygiene in the hospital and wards prevailing.

#### **Overview of the Waste Management Practices adopted**

##### **A. Within the facility**

- a. Segregation and disposal practices not very clear.

- b. Wastes are collected and sent to autoclaving facility within the hospital premises.
- c. After autoclaved waste in bins is piled at a common disposal point.

**B. Outside the facility**

- a. Waste is collected from the hospital by the Howrah Municipal Corporation and is dumped in open grounds.

Interviewee	Comments & Feedback	Observation / Remarks
Dr. S.K. Dhara Incharge doctor – STD clinic	<ul style="list-style-type: none"> <li>- Used disposable needles and syringes</li> <li>- Red polybag used for hazardous hospital waste.</li> <li>- Black bag used for non-hazardous waste</li> <li>- Needles / syringes are cut in a mechanical cutter and cut pieces are put in the bin of the cutter containing hypochlorite solution.</li> <li>- Remaining portion of needles/syringes put in a tub containing hypochlorite solution which is later discarded in a Red polybag sent to a common disposal point.</li> </ul>	- Facility clean, hygienic and full of educational posters.
Ms. Bithika Chakravarty, Sister in-charge – Blood Bank (exp: 1 year in Blood Bank total exp: 21 years)	<ul style="list-style-type: none"> <li>- Used disposable needles and syringes.</li> <li>- Blood sample drawn for testing is checked for blood group, Hb.</li> <li>- Donor to be tested for BP, weight, and for medical history.</li> <li>- Gloves used put in Red polybag / bin</li> <li>- Cotton, guages, swabs put in black polybag along with needles cut using a mechanical tong cutter.</li> <li>- Waste bags sent daily to incinerator in the hospital campus.</li> <li>- Aware of PEP and its availability at the EMO.</li> </ul>	<ul style="list-style-type: none"> <li>-facility clean</li> <li>- attendants have uniform but no apron.</li> <li>- not aware of putting needle, gloves in hypochlorite soln.</li> </ul>
Mr. Dhruba Gopal Shah Technician – Blood Bank (D.M.L.T., has undergone training for medical practices) exp: 4 years in this BB. total exp: 5 years		
Ms. Shushmita Staff nurse Received training in IC and WM in 1992-93.	<ul style="list-style-type: none"> <li>- Disposable needles and reusable (sterilised) syringes used in wards.</li> <li>- Weekly indent placed for stores. Abundant supply from stores for dispos-able needles and medicines.</li> </ul>	<ul style="list-style-type: none"> <li>-facility clean</li> <li>- waste put in polybags sent for disposal to the hospital disposal facility.</li> </ul>
Mohammed Ghousia Incharge – autoclaving facility	<ul style="list-style-type: none"> <li>- All waste, both biomedical hazardous and otherwise sent from hospital in polybags is transferred to Black bags having capacity upto</li> </ul>	

Interviewee	Comments & Feedback	Observation / Remarks
SNG Mercantile Co., Howrah.	40 kgs (mouth open) is loaded in tray and pushed into the autoclave. - Steam autoclave facility set to 140°C maintained for 35 min. - After the cycle is over bag tied back and put to the disposal site within hospital campus which is collected by the Howrah Municipal Corporation for dumping.	
Dr. S. Chakraborty (M.B.B.S., Dip in Public Health) Medical Superintendent (exp: 8 mts in this hospital total exp: 13 years as MS + 7 yrs otherwise)  Ms. Sushmita Nag, M.Sc., (Environment Management with Physiology) Assistant Medical Superintendent	- No separate IC or WM committee for hospital. The District Health and Family Welfare and Sanitation Committee take care of IC and WM related issues. - Aware of NACO IC but not seen a copy in this hospital. - Received training in health care management given by Data Consultancy for State Health Service employees ~ 3.5 years back. - TCS conducted training for nurses and doctors ~ 3.5 years back in IC and waste segregation measures.  <b>Infection Control Practices</b> - Universal Practices followed everywhere more strictly at the OTs. - MS has conducted 1day training to all health workers of the hospital.  <b>Waste Management Practices</b> - Placenta (uninfected) collected by Albert David Ltd., from all hospitals of West Bengal. - Earlier contractors' performance was poor. Thus contract cancelled. - Presently, scavenging contractor supplies people for scavenging. Workers supervised by Hospital staff. - Scavenging workers use gloves, apron, gum boots.	

**SembRamky Environmental Management Pvt. Ltd.**  
**Off: P-81; Dakshini Co-operative Housing Society, Kolkata**  
**Factory: 'F' Road, Belgachia, Howrah**

Interviewee	Comments & Feedback	Observation / Remarks
<p>Mr. Sandeep Datta General Mgr – Operations</p> <p>Mr. Krishnendu Datta Mgr – Plant Operations and QEHS</p>	<ul style="list-style-type: none"> <li>- Company is association of Semb of Singapore with Ramky of India. Semb deals with all bio and electric works management pioneers in Asia Pacific region.</li> <li>- Installation 1year old. Caters to the incineration needs of hospitals and diagnostic centres of Kolkata, Howrah, 24 Paraganas – North and South also Hooghly.</li> <li>- has 7 more plants in India.</li> <li>- regulating authorities DHE, PCB,</li> <li>- Government has 12500 beds in its hospitals in Kolkata</li> <li>- Agreement done before starting to work with any hospital.</li> <li>- Segregated waste collected from disposal points of hospitals all 7 days of the week.</li> <li>- Incinerator burning scientific – zero level pollution as certified by PCB.</li> <li>- Plastic base waste autoclaved and later formed into pellets which are collected by the ancilliary industries for recycling.</li> <li>- Other bio-waste and hazardous waste loaded into incinerator. Incinerator details: <ul style="list-style-type: none"> <li>- primary chamber - 850°C</li> <li>- secondary chamber – 1050 °C</li> </ul> </li> <li>- flue gas from incinerator pass through venturimeter scrubber. Particles gets settled.</li> <li>- water + particles recirculated and treated.</li> <li>- air analysis report done monthly by PCB.</li> </ul> <p><b>Training on WM Practices</b></p> <ul style="list-style-type: none"> <li>- Have given training programme to health care establishments as regards waste segregation.</li> </ul>	<p>- Very clean work areas and performance is very much pollution free and environment friendly.</p>

## Swasthya Bhawan, Salt Lake City, Kolkata

Houses all offices of directors related to the Department of Health services and education.

Interviewee	Comments & Feedback	Observation / Remarks
Dr. K.C. Barvi Director of Health Services, (Since January 2006)	<ul style="list-style-type: none"> <li>- Tertiary hospitals and district hospitals under the jurisdiction of DHS.</li> <li>- Training given to hospital staff for IC and WM practices.</li> </ul>	<ul style="list-style-type: none"> <li>- was casual in approach.</li> <li>- left for a meeting half way through and straight away went home.</li> </ul>
Dr. Jayashree Mitro M.D., (Community Medicine) (total exp: 35 years in the field; 8 years served as Principal, administrative exp: 10 yrs.) DME for the last 6 months.	<ul style="list-style-type: none"> <li>- Difficult to implement any changes also IC and WM practices until man power is increased.</li> <li>- No inspection of working of committees done presently.</li> <li>- Inspection on the performance of committees required.</li> <li>- Inspecting team should comprise of administrator, microbiologist, Sr. nursing personnel, etc.,</li> <li>- Team is to make quarterly visit to the hospitals and report to government.</li> <li>- Time frame plan and performance indicators are to be built.</li> <li>- Teaching hospitals should be referral hospitals.</li> </ul> <p><b>Institutional Policies</b></p> <ul style="list-style-type: none"> <li>- Prevent/reduce procedural delays.</li> <li>- Institute has to take stock of situation in hospitals.</li> <li>- More training needs to be provided for people at all levels.</li> </ul>	<ul style="list-style-type: none"> <li>- Observation and functioning very casual.</li> </ul>
Dr. Dutta S.N. In-charge WM Practices Jt. Director – PH & CD Dept. of Health Services	<ul style="list-style-type: none"> <li>- Training given to all doctors and nurses in WM practices.</li> <li>- Reorientation courses conducted every year</li> <li>- Training given by doctors.</li> <li>- In every hospital Ward Master oversees WM practices.</li> </ul>	<ul style="list-style-type: none"> <li>- Interaction with health workers at facilities go against what the Jt. Director said.</li> </ul>
Mrs. Ratna Kotal, Nodal Officer (Nursing) WBSACS, Kolkata.	<ul style="list-style-type: none"> <li>- 33 VCCTCs and 10 PPTCT centres in West Bengal - 9 in the different Medical Colleges and 1 in Lady Victoria Hospital.</li> <li>- No administrative will to implement changes</li> </ul>	

Interviewee	Comments & Feedback	Observation / Remarks
Exp: 27 years in total as staff nurse, teacher, principal and at WBSACS	<ul style="list-style-type: none"> <li>- Attitudinal problems of health workers and paucity of funds are responsible for the current situation of apathy</li> <li>- A Government Order and a team of microbiologist, nurse (say, Dy. Nursing Supdt) and doctor (say, Dy. Medical Supdt) in each hospital with due authority and accountability will yield results.</li> <li>- Preferred to have a Central Sterilised Supply Department to maintain standardisation in IC practices</li> <li>- Patients be divided with the number of nurses so that there is connection and confidence building.</li> <li>- Plans to have affordable incinerators at all hospitals if possible.</li> <li>- Practices of disposal of waste by burning in each hospital to be discouraged.</li> </ul>	
S. Suresh Kumar Project Director - WBSACS	- Despite all training it is the attitudinal problem of the staff which is responsible for the callous situation prevailing.	Dynamic, supportive for implementation of all projects and programmes of NACO.

### 3. STATE: NAGALAND

**Table 3: Facilities Visited in Nagaland**

Sr. No	Date	Contact Address	Facilities visited	Stake holders
1	9-2-2006	CHC, Medziphema	Community Health Centre	<ul style="list-style-type: none"> <li>• Ms. Intila, Staff Nurse</li> </ul>
2	9-2-2006	Oking Hospital and Research Clinic Pvt. Ltd., Down Town Clinic Annexe, Kohima	Private Nursing Home (biggest in the Nagaland)	<ul style="list-style-type: none"> <li>• Dr. V. Kesiezie, Surgeon – sole proprietor</li> </ul>
3	10-2-2006	Naga Hospital, Kohima	State level tertiary hospital – Blood Bank, VCTC Centre, ART Centre, PPCTC Centre, wards	<ul style="list-style-type: none"> <li>• Ms. Arnela, Technician – Blood Bank</li> <li>• Mr. Yota, Technician – Blood Bank</li> <li>• Dr. Margaret, Microbiologist, In-Charge</li> </ul>

<b>Sr. No</b>	<b>Date</b>	<b>Contact Address</b>	<b>Facilities visited</b>	<b>Stake holders</b>
				<ul style="list-style-type: none"> <li>– VCTC Centre</li> <li>• Ms. Akmala, Technician – VCTC</li> <li>• Ms. Liesudul, Technician – VCTC</li> <li>• Ms. Anla, Technician – VCTC</li> <li>• Mr. Atuo, Counsellor – VCTC</li> <li>• Dr. Doctor, In-Charge ART Centre</li> <li>• Ms. Alam, Counsellor – PPCTC</li> <li>• Ms. Abino – Technician – PPCTC</li> <li>• Dr. Atoshe, In-Charge, PPCTC</li> <li>• Dr. L. Angami, Medical Supdt.</li> <li>• Dr. Changkijd, Asst. Med. Supdt.</li> </ul>
4	10-2-2006	Office of Medical Directorate, Kohima	Offices of Health Ministry	<ul style="list-style-type: none"> <li>• Dr. Neiphi Kire, Jt. Director- Medical Services</li> </ul>
5	10-2-2006	Nagaland State AIDS Prevention & Control Society – WBSACS, Kohima.	Office of NSACS	<ul style="list-style-type: none"> <li>• Dr. Vizole, Dy. Director – In-charge, VCTCs &amp; PPCTCs</li> <li>• Dr. Vinito, Dy. Director</li> <li>• Dr. Kumini Kathipri, Project Director</li> </ul>
6	10-2-2006	Ministry of Health and Family Welfare, Govt. of Nagaland, Kohima.	Office of the Commissioner and Secretary	<ul style="list-style-type: none"> <li>• Shri. Rajiv Bansal, Commissioner &amp; Secretary – Dept. of Health and Family Welfare</li> </ul>
7	11-2-2006	Dimapur District Hospital, Dimapur	VCTC, PPCTC, Blood Bank	<ul style="list-style-type: none"> <li>• Ms. Pijano, Counsellor – VCTC</li> <li>• Ms. Bennino, Counsellor – VCTC</li> <li>• Mr. Aron, Technician – VCTC</li> <li>• Ms. Ninema, Counsellor – PPCTC</li> <li>• Ms. Labeni, Counsellor – PPCTC</li> <li>• Mr. Belie, Technician – PPCTC</li> </ul>

Sr. No	Date	Contact Address	Facilities visited	Stake holders
				<ul style="list-style-type: none"> <li>Dr. Lima, Medical Officer, In-charge - VCTC</li> </ul>
8	11-2-2006	'OASIS' Super Market, OC-7, Adjacent to Temporary Post Office, Dimapur.	NGO working with HIV + people	<ul style="list-style-type: none"> <li>Fr. Jose, Co-ordinator</li> </ul>

### Community Health Centre, Medziphema

- Medziphema is in-between a village and a town on NH 39.
- CHC is 30 bedded facility with one doctor Dr. Tensu, 1 Technician, 13 nurses (8 with CHC + 5 nurses with sub-centres), 9 attendants (4 male+5 female), 1 chowkidaar and 2 cooks.

Interviewee	Comments & Feedback	Observation / Remarks
<p>Ms. Intila Staff nurse Exp: 1 month in CHC Total exp: 7 years</p>	<ul style="list-style-type: none"> <li>- Out-patients ~ 40-50 / day</li> <li>- General cases mainly like fever, regular delivery cases, etc., come.</li> <li>- Complicated labour cases and others referred to District Hospital at Dhimapur.</li> <li>- Home deliveries are a common practice. Sister is not on duty and if called attends home delivery.</li> <li>• <b>Overview of IC and WM practices</b></li> <li>- No adequate supply of gloves, syringes, needles, etc.,</li> <li>- Needles sterilised for 5 minutes. Patients get disposable needles, gloves. Gloves in case not available used gloves washed with soap and water and reused.</li> <li>- Portable autoclaving facility.</li> <li>- Heard of UP and PEP but cannot recollect.</li> </ul>	<ul style="list-style-type: none"> <li>- Not aware of sub-centres.</li> <li>- Surroundings of CHC clean</li> <li>- Inside ward condition bad</li> <li>- The test room bin has no waste; used as a spittoon.</li> <li>- in injection room seen a common bin with gauge soaked in blood, plastic and paper – no hypochlorite solution seen.</li> <li>• Other posters seen but nothing about UP and PEP.</li> </ul>

Interviewee	Comments & Feedback	Observation / Remarks
	<ul style="list-style-type: none"> <li>- In case of wound/cut wash with water.</li> <li>- No disinfection Practices seen.</li> <li>• <b>Infection control practices</b></li> <li>- Use of personal protective equipment like gloves available for junior doctors, nurses and support staff. If disposable ones not available sterilised ones used.</li> <li>- Autoclaved, disinfected syringes are used.</li> <li>- Injections and tests conducted without use of gloves most of the times.</li> <li>- Hypochlorite solution used only in the laboratory by technician.</li> <li>• <b>Waste Management</b></li> <li>- All waste collected in bin and dumped in the pit at backyard.</li> </ul>	<p>* no waste segregation seen.</p>

**Oking Hospital and Research Clinic Pvt. Ltd.  
Down Town Clinic Annexe, Kohima**

Is the biggest private hospital in the state of Nagaland. Is a 76 bedded hospital. Nearly 120-200 patients from all economic strata visit the hospital per day.

The hospital has 17 doctors, 46 nurses (fully qualified JNM+ ), 12 attendants, more than 15 sweepers, 7 general laboratory technicians, 2 ECG technicians, 3 x-ray technicians, 4 ultra sound scanning technicians, 6-8 office staff, 2 drivers, 4 OT technicians/sisters, 8-10 peons, 7 in the canteen.

A patient in the general ward is charged Rs.300/day which includes rent, nursing and maintenance charges. Medicines and consultancy is charged above. A patient in a VIP suite is charged Rs.2500/day.

An Emergency and ICU ward are there which are not very well equipped but are able to handle any casualties.

Two male and two female beds are totally allocated free, including consultation, treatment, surgery, medicines, diet etc.,

Students of rural area after their 10<sup>th</sup> standard are given 1 year training free – to care of a patient, to give injections, measure temperature, BP, etc., They are also taught about basic first aid practices, delivery procedures and suturing. The students are exposed to Pharmacy and Preventive medicine. Students will have to go back to their villages and work. Since last more than 5 years nearly 100 students have been trained who at the end of their training receive a certificate.

**Overview of Training programme regarding IC & WM Practices**

- Health workers in the hospital oriented towards their self-formulated IC and WM practices.

**Overview of the Infection Control measures adopted**

- Use of personal protective equipment like gloves and masks depends on the gravity of the case. No standard practices followed.

**Overview of the Waste Management Practices adopted**

- A. Within the facility
  - a. Segregation of wastes is as enumerated in tabular column.
  - b. Wastes are collected and deposited at one place for disposal.
- B. Outside the facility
  - a. Waste is collected from the hospital by Military Hospital of Zakhama that takes it for incineration.

Interviewee	Comments & Feedback	Observation/Remarks
Dr. V. Kesiezie M.S., (total exp: 18 years)	<b>Overview of practices</b> <ul style="list-style-type: none"> <li>• IV bottles taken by people for recycling.</li> <li>• Pathological samples sent for biopsy.</li> <li>• Pathological samples otherwise are</li> </ul>	

Interviewee	Comments & Feedback	Observation/ Remarks
	<p>kept in Formalene.</p> <ul style="list-style-type: none"> <li>• Concerned authorities have not issued any guidelines as regards IC and WM practices.</li> <li>• Blood tested in all cases of TB, suspected HIV cases, and all OT related ones.</li> <li>• Because of frequent problems faced with needle crushers and cutters of late needle cutters not being used; needle and syringe after use are put in the same pack and thrown.</li> </ul> <p><b>IC practices</b></p> <ul style="list-style-type: none"> <li>• Gloves used depend on the gravity of the case.</li> <li>• In case of infectious cases like bronchitis, TB history, HIV/AIDS patients, gloves are used.</li> <li>• In case of infectious cases caution marked on case sheet so that all related health workers take care. In which case disposable needles, syringes and gloves used.</li> <li>• Gloves not used until suspected emergency.</li> <li>• Medical waste sent to Zakhama Military Hospital located nearly at 5 kms once a week, depending on the waste collected.</li> <li>• Hospital charges Rs.3000 for 6 months</li> <li>• Pathological waste like placenta/umbilical cord also amputated parts of the body returned to the patients as per the culture of the land. Patients and/or their relatives bury the same.</li> <li>• Other pathological waste put in formalene and stored till sent to incinerator.</li> </ul> <p>All waste – syringe, needles, gloves, gauges, cotton, etc., put in a polybag, tied and collected together are sent to incinerator when</p>	

Interviewee	Comments & Feedback	Observation/Remarks
	sufficient weight gets collected.	

### Naga Hospital, Kohima

Started as a military hospital during the II World War time by the Britishers. Formerly a fully state government funded State level Hospital (tertiary) of 250 beds is in 2004 made autonomous, but the process of autonomy has not been fully completed. Government funds suffice for salary and establishment. The Hospital administration is to generate the rest for its day to day medical expenses.

The hospital is fully free for the patients. The patients are nominally charged for diagnostic, investigations and x-rays done. The hospital is attached to the Nursing School. It has 56 doctors, 40 GNM staff, 40-50 ANM, 112 - 4<sup>th</sup> grade staff nearly 6 drivers, etc.

The Hospital has a Blood Bank, VCCTC, PPTCT and an ART centre.

Interviewee	Comments & Feedback	Observation / Remarks
<p>Ms. Arnela D.M.L.T., 1 month training on RNTCP – HIV/TB. Technician – Blood Bank (exp: 1year in this hospital total exp: 4 years)</p> <p>Mr. Yota 12<sup>th</sup> std., + training in Haematology for 1.5 months (exp: 2 yrs in this hospital)</p>	<ul style="list-style-type: none"> <li>- Disposable needles and syringes available. In case of shortage when faced (once in while) patients buy.</li> <li>- Slides after testing put in Cetrimide solution. Not aware of concentration.</li> <li>- Needle after usage cut with the mechanical handle type cutter and discarded in bin, which is later thrown by peons in the back yard.</li> <li>- Blood tested for HIV, for Malaria, Hepatitis, SBSG, SCV and VDRL.</li> </ul>	<ul style="list-style-type: none"> <li>- Charts of Blood donation promotion displayed.</li> <li>- No charts of UP and PEP seen.</li> <li>- Mr. Yota is relatively confident - aware of UP, not heard of PEP.</li> <li>- Ms. Arnela less confident - unaware of UP and PEP.</li> </ul>

Interviewee	Comments & Feedback	Observation / Remarks
total exp: 16 years)	<ul style="list-style-type: none"> <li>- Later blood samples bottles are dropped in a polybag, thrown/burnt at the backyard or on the way to Dhimapur</li> <li>- If any sample is found to be HIV +ve, it is injected with 10ml Formalene and kept for 30 minutes. Bag later cut open and buried (bag + blood) by sweepers.</li> <li>- Blood sample kept for a month in cold storage.</li> <li>- If a blood bag is not used within a month then blood discarded, as no blood component separating facility available.</li> </ul>	
<p>Dr. Margaret Microbiologist In-charge of VCCTC (Exp: 10 years since VCCTC started)</p>	<ul style="list-style-type: none"> <li>- 42 VCCTC centres in Nagaland.</li> <li>- 150 – 200 patients visit monthly.</li> <li>- 80-90% patients visit voluntarily, rest referred from doctors of the Hospital and else where.</li> <li>- 10-15% HIV +ve cases, trend of +ve cases increasing.</li> <li>- Monthly reports sent to NSACS and quarterly report for sentinel surveillance.</li> <li>- Logistics support requested is addressed by NSACS.</li> <li>- Need a PC for data entry and data storage and record keeping.</li> </ul>	<ul style="list-style-type: none"> <li>- No posters seen</li> </ul>
<p>Ms. Akmala D.M.L.T., Laboratory technician – VCCTC centre (exp: 1 year)</p> <p>Ms. Liesuldl Technician - VCCTC (exp: 7 yrs)</p> <p>Ms. Anla Technician – VCCTC (exp: 9 years)</p>	<ul style="list-style-type: none"> <li>- Recognize UP and PEP as words but cannot recollect.</li> </ul>	<ul style="list-style-type: none"> <li>- Needle thrown in bin with no hypochlorite solution.</li> <li>- Blood drawn without use of gloves.</li> </ul>
<p>Mr. Auto Counsellor – VCCTC</p>	<ul style="list-style-type: none"> <li>- Patients visiting gets introduced</li> <li>- Patient informed about HIV/AIDS,</li> </ul>	

Interviewee	Comments & Feedback	Observation / Remarks
(B.Theology + 3 months training in counselling+ 3 times training by NSACS)	<p>patient counselled for his past history, behaviours, gets signature on consent form</p> <ul style="list-style-type: none"> <li>- Blood sample collected and tested</li> <li>- Reports collected by patients either the same or next day</li> <li>- Report if –ve also counselled.</li> <li>- Report if +ve informed about health care, asked to get CD4 test</li> <li>- case then referred to ART centre, also counselled.</li> <li>- drop out in patients is 1-2% with the +ve patients.</li> <li>- All tests done free. Continuous supply of all medicines, and other related facility, etc.,</li> </ul> <p><b>Suggestion</b></p> <ul style="list-style-type: none"> <li>- more work of awareness creating needs to be done in backward area.</li> </ul>	
Dr. Abu Doctor-Incharge ART Centre	- NACO needs to supply medicines of Paediatric dosage.	
<p>Ms. Alam Counsellor – PPTCT (B.A., Dip in Psychology, counselor training at NSACS)</p> <p>Ms. Abino Technician - ANM staff (exp: 3 years)</p>	<ul style="list-style-type: none"> <li>- Gloves not regularly used.</li> <li>- Patients usually visit Hospital around their 5<sup>th</sup> month</li> <li>- After registration patients report to PPTCT, counselled preferably on a 1:1 basis for various diseases like HIV, Hep B, VDRL (usually oral with the help of charts), consent form got signed</li> <li>- Blood drawn in PPTCT sent to the microbiology lab later</li> <li>- Patients asked to collect report after 2 days.</li> <li>- Patient visits doctor <ul style="list-style-type: none"> <li>- patients visiting – 120-150/month, of which 1-2 test HIV +ve.</li> </ul> </li> <li>- in case of a + ve patient 1:1 post-test counselling given along with the spouse, asked to deliver in hospital and cases followed-up.</li> </ul>	
Dr. Atoshe M.D., (ObG) Incharge – PPTCT	- Patients are re-counselled, tested after they visit from PPTCT centre.	- Practices of IC and WM in labour room relatively better; also

Interviewee	Comments & Feedback	Observation / Remarks
	<ul style="list-style-type: none"> <li>- Monthly report sent to NSACS.</li> <li>- Most mothers even if +ve as they visit in late stages continue with pregnancy.</li> </ul>	of cleanliness and hygiene.
Paediatric + Male ward (general)	<ul style="list-style-type: none"> <li>- 39 bedded has 6 nurses and 3 student nurses</li> <li>- During night 1 staff nurse + 1 student nurse.</li> <li>- No IC Practices followed.</li> <li>- No good supply of gloves, syringes, needles, etc.,</li> <li>- Matron visits every morning the wards and doctors once during the day.</li> </ul>	<ul style="list-style-type: none"> <li>- No toilet facility for health workers and patients</li> <li>- All toilets in the hospital blocked for more than 15 days, except for 2 for a 250 bedded hospital.</li> </ul>
<p>Dr. L. Angami Radiologist Director / Medical Superintendent (exp: 5 years in present post, 26 years otherwise)</p> <p>Dr. Changkij M.D., (ObG) Asst. Med. Supdt. (exp: 15 in this hospital total exp: 25 years)</p>	<ul style="list-style-type: none"> <li>- Hospital declared autonomous in 2004</li> <li>- Bill passed, govt. order pending</li> <li>- Government funds suffices for salary and part of establishment charges</li> <li>- Hospital to generate rest for its medical services, etc.</li> <li>- Notification available but could not be implemented since no funds</li> <li>- State Government budget totally dependent on Central budget for all the N-E states.</li> <li>- During 2005-06 hospital received only 5.28 crore; of which 4.96 crore spent for salary rest 26 lakh for electricity.</li> <li>- Political system has no will</li> <li>- Guidelines issued cannot be implemented as no funding</li> <li>- Last 5 years Health minister visited 2-3 times/year</li> <li>- DMS visited thrice in 3 moths.</li> <li>- Budgetary provision for any implementation required</li> <li>- Autonomy should be supplemented by funds.</li> </ul>	<ul style="list-style-type: none"> <li>- No adequate supply of UP facilities</li> <li>- No posters seen</li> <li>- Total dearth of cleanliness, sanitation and hygienic facilities.</li> </ul>

Interviewee	Comments & Feedback	Observation / Remarks
	<p><b>IC Committee</b></p> <ul style="list-style-type: none"> <li>- Committee of 13 members present since 10 years comprising of Med. Supdt., Asst. Med. Supdt., microbiologist, matron, Member Secretary, senior doctors, etc., conducts quarterly meetings</li> <li>- Received NACO manual on IC but nothing from Government in the last 5 years.</li> </ul> <p><b>WM Committee</b></p> <ul style="list-style-type: none"> <li>- Present since the last 6-7 years. Committee consists of the Director, matron, Asst. matron, 4<sup>th</sup> grade staff, etc.,</li> </ul> <p><b>IC and WM Facility</b></p> <ul style="list-style-type: none"> <li>- No adequate supply of gloves, mask, needles, syringes, etc.,</li> <li>- No incinerator, waste burnt/dumped.</li> <li>- Liquid waste put to septic tank.</li> <li>- Tissues, pathological waste, gauges burnt near garbage area.</li> </ul> <p>Incinerator of 1kg capacity given by Central government in 2001 broke down</p>	

### Directorate of Health Services, Kohima

Interviewee	Comments & Feedback	Observation / Remarks
<p>Dr. Neiphi Kire, Jt. Director – DMS (exp: 6 years in current posting total 20 years)</p>	<ul style="list-style-type: none"> <li>- DMS in charge of all district hospitals and PHCs</li> <li>- District hospitals totally state funded; not adequate funds.</li> <li>- Central procurement practised by DMS.</li> <li>- Directs IC and WM practices</li> <li>- No training given in IC and WM Practices in the last 6 years.</li> </ul> <p>Opinion</p> <ul style="list-style-type: none"> <li>-Director be allowed to plan and properly framed time procedures be set and followed.</li> <li>- Each District hospital should have an</li> </ul>	

Interviewee	Comments & Feedback	Observation / Remarks
	incinerator and a proper sewerage system - Training be provided for IC - All waste in hospitals in single bin. - central procurement – not taken care of WM and segregation - procuring procedural delays. - No IC and WM related materials procured. - State health budget is 80 crore of which 75% goes to salary.	
Dr. Vizole M.D., (Paediatrics) In-charge of VCCTCs and PPTCTs NSACS	<ul style="list-style-type: none"> <li>- There are 42 VCCTC centres in Nagaland.</li> <li>- District AIDS units to be formulated – one for each district for decentralisation and for better reach out to every village.</li> <li>- NSACS supplies slides, documentaries to district units.</li> </ul> <p><b>Suggestions for effective implementation of NACP – III phase</b></p> <ul style="list-style-type: none"> <li>- Mobile health clinics for reaching rural places.</li> <li>- Can be tied up with health campaigns.</li> <li>- Take help from village health centres.</li> <li>- To reach out through the media especially radio.</li> <li>- Correct prioritisation.</li> </ul>	

Interviewee	Comments & Feedback	Observation / Remarks
<p>Dr. Kumini Kathipri M.D., (Community Health) Project Director NSACS</p>	<p><b>Suggestions for effective implementation of NACP – III phase</b></p> <ul style="list-style-type: none"> <li>- Health state subject. NACO can set up IC procedures; later programme needs to be taken care by the government.</li> <li>- State budget totally dependent on the central budget.</li> <li>- State situation represented to NACO.</li> <li>- NACO budget received by NSACS directed to hospitals to provide room/infrastructure to NACO funded projects like VCCTC, PPTCT, even though there was no provision for the same.</li> <li>- DG, NACO suggested to inform Ministry of Finance to allocate extra ear-marked budget for IC and WM practices.</li> <li>- The extension of VCCTC, PPTCT, ART centres, Testing facility be a part of the master plan of hospital.</li> <li>- Improve infrastructure in counselling centres.</li> <li>- Quality service prevails only when public/consumer demands.</li> <li>- Bifurcation of DHS and DMS in the state of Nagaland be done away with (exists no where). Bifurcation creates problems during implementation of any programme.</li> </ul>	
<p>Shri. Rajiv Bansal, Commissioner and Secretary Dept. of Health and Family Welfare Dept. of Higher Education Government of Nagaland, Kohima.</p>	<p><b>About institutional policies:</b></p> <ul style="list-style-type: none"> <li>- People in administrative posts need training in management and administration skills.</li> <li>- Hospital system should be open to have a professional with management background to take care of administration.</li> <li>- Assessment be done of the manpower of Hospital and stock of situation be taken. If need be manpower be trimmed and funds diverted.</li> <li>- Monetary allocations sanctioned under Central Government schemes to be done in phases and for any particular financial year and the process of planning, implementation takes time.</li> <li>- Rather than funds allocation the real problem is with correct utilisation and monitoring of resource.</li> <li>- Correct prioritisation – health, education.</li> </ul> <p>Facilitate entry of private doctors in rural area to set up health care facility – say by providing</p>	

Interviewee	Comments & Feedback	Observation / Remarks
	easy loan, subsidies etc. - Facilitate/allow privatisation. - Educate NGOs and make them professional.	

### **Civil Hospital, Dhimapur.**

Is a 150 bedded hospital and is state government funded.

### **Overview of training provided as regards IC and WM practices:**

- Training not provided.

### **Overview of IC Practices:**

- Gloves apart from the technicians of VCCTC, PCCTC, Blood bank used rarely by other health workers, used reusable.

### **Overview of Waste Management Practices:**

- No proper waste segregation practices seen anywhere in the hospital
- Waste collected together is burnt in the incineration facility of the hospital, which is not environment friendly.

Interviewee	Comments & Feedback	Observation / Remarks
Ms. Pijano, Counsellor – VCCTC Bachelor in Theology, 1 month training by NSACS (exp: 3 years in this centre total exp: 5 years)	- No facility for CD4 test. Patients visit voluntarily also are referred by doctors and NGOs. - Patients enter, register, introduction with counsellors, pre-test counselling done on 1:1 basis (mainly oral + pictures used + demo models used), patient given a code number, consent form signed.	- Enclosed room, enough space with posters, confidentiality possible.
Ms. Bennino B.A., 3 months training in counseling (exp: total 2 years)	- Blood sample collected by at the laboratory and patient collects report from counsellor. - If report –ve patient informed to come after 90 days, get again tested.	
Dr. Lima Medical Officer incharge – VCCTC	- If report suggests HIV +ve then referred to Care and Counsel centre. Patient given medicine and nutritional supplements.	

Interviewee	Comments & Feedback	Observation / Remarks
(exp: 5yrs in this post exp otherwise 23years)		
Mr. Aron D.M.L.T., Technician – VCCTC (exp: 3 years)	<ul style="list-style-type: none"> <li>- disposable needles after use cut using thermo mechanical needle cutters.</li> <li>- Needles/syringes, gloves after cutting put in a bin containing hypochlorite solution of concentration 1:20.</li> <li>- Cotton swabs put in a Red coloured polybag with no hyposolution.</li> <li>- So shortage of logistics.</li> <li>- PEP not available at Dhimapur Hospital, but at Naga Hospital, Kohima.</li> </ul>	- Cutter bin does not contain Hypochlorite soln nor the collecting polybag.
Ms. Ninema Counselor - PPTCT  Ms. Lobeni Counselor - PPTCT	<ul style="list-style-type: none"> <li>- PPTCT centre started in September 2002.</li> <li>- Patients after registration as outpatients, visit PPTCT, pre-counselling done preferbaly on a 1:1 basis.</li> <li>- Patients sign consent form for undergoing testing, blood sample collected for testing in counselors room (laboratory away from centre)</li> <li>- Patients visit the doctor in OPD and would return back usually after 2 days are asked to collect their reports from counsellors.</li> <li>- Patients visiting PPTCT 30-40 patients /day in their 4-5<sup>th</sup> month of pregnancy.</li> </ul>	- Needle cutter does not have Hypochlorite solution.
Mr. Bellie Technician – PPTCT (exp: 3 years)	<ul style="list-style-type: none"> <li>- Not clearly aware of the PEP facility / procedure.</li> </ul>	
Female Medical Ward 11 bedded	<ul style="list-style-type: none"> <li>- No waste segregation.</li> <li>- Sisters do not wear gloves.</li> <li>- All waste dumped into the same polybag with no hypochlorite solution.</li> <li>- Patients get needle/syringes, but not adequate in supply.</li> </ul>	
Blood Bank	<ul style="list-style-type: none"> <li>- Amongst 110 donors – 1-2 donors tested HIV +ve.</li> <li>- Blood drawn tested for VDRL, Hep B and C, HIV and Malaria</li> <li>- If report +ve blood discarded from bag.</li> </ul>	

Interviewee	Comments & Feedback	Observation / Remarks
	Blood + bag put in solution and later taken to incinerator.	

**‘Oasis’**

**Super Market, OC-7, Adjacent to Temporary Post Office, Dimapur**

- NGO runs a support group for HIV + patients since last 6 years providing them nutritional, medicinal and vocational job support.

**4. STATE: ANDHRA PRADESH**

**Table 4: Facilities Visited in Andhra Pradesh**

Sr. No	Date	Contact Address	Facilities visited	Stake holders
1	14-2-2006	Government General and Chest Hospital, Eragadda, Hyderabad	VCCTC, Care and Support Center	<ul style="list-style-type: none"> <li>• Mr. Syed Khadiruddin, Technican – VCCTC</li> <li>• Ms. Sandhya Rani, Counsellor – VCCTC</li> <li>• Mr. Nagaraju, Counsellor – VCCTC</li> <li>• Ms. Padma Stella, Staff Nurse</li> <li>• Dr. Ajay</li> <li>• Mr. Jagadish, Ward Boy</li> <li>• Dr. R. Jagannath Rao, R.M.O.</li> <li>• Dr. P.N.S. Reddy</li> </ul>
2	14-2-2006	LEPRA India, Secunderabad.	NGO having programmes for Truckers, VCCTC and PPCTC projects	<ul style="list-style-type: none"> <li>• Mr. Naidu, Counsellor and Nodal Officer – VCCTC and PPCTC</li> <li>• Mr. Sagar, In-Charge, Statistical Information</li> <li>• Dr. V. Rajashekhar, State Project Manager</li> <li>• Mr. M. Ramesh, Project Manager, PSH Project – Truckers</li> <li>• Dr. Sai Krishna, Project Coordinator – LEPRA India</li> </ul>
3	15-2-2006	AMR Area	Area Hospital	<ul style="list-style-type: none"> <li>• Mrs. Bipasha, aayah</li> </ul>

<b>Sr. No</b>	<b>Date</b>	<b>Contact Address</b>	<b>Facilities visited</b>	<b>Stake holders</b>
		Hospita, Bhaungiri.	– Labour room, VCCTC, PPCTC	<ul style="list-style-type: none"> <li>• Ms. Jayalakshmi, Head Nurse - Labour Room</li> <li>• Mr. N. Jagadish, Counsellor - VCCTC</li> </ul>
4	15-2-2006	Karunalayam Care and Support Centre, Karunapuram, Dist: Warangal	Care and Support Centre for HIV/AIDS patients	<ul style="list-style-type: none"> <li>• Fr. Jyotish, In-Charge, Karunalayam</li> <li>• Mr. Varsa Anujya, patient</li> <li>• Mr. Yadagiri, patient</li> <li>• Mrs. Tholassi, patient</li> </ul>
5	15-2-2006	District Hospital, Jangaon, Dist: Warangal	District Hospital – VCCTC, PPCTC	<ul style="list-style-type: none"> <li>• Mr. L. Shridhar, Technician – VCCTC</li> <li>• Mr. Ramesh, Counsellor – VCCTC</li> <li>• Ms. Padma D. Counsellor – PPCTC</li> <li>• Ms. Malathi Staff Nurse</li> </ul>
6	15-2-2006	Community Health Centre, Ghatkesar.	Community Health Center - VCCTC	<ul style="list-style-type: none"> <li>• Dr. Rajashekhar</li> </ul>
7	16-2-2006	HLFPPT, Hyderguda, Hyderabad	Project Support Unit of Hindustan Latx Family Planning Promotion Trust	<ul style="list-style-type: none"> <li>• Mr. Anthony, Project Coordinator</li> <li>• Dr. Anita Rego, Team Leader</li> </ul>
8	16-2-2006	IRDS, Sitaphalamandi, Hyderabad	NGO – running project for Commercial Sex Workersf	<ul style="list-style-type: none"> <li>• Dr. Kalpana, Doctor In-Charge</li> <li>• Ms. Shantamma</li> <li>• Ms. Swaroopa</li> <li>• Ms. Sushila</li> <li>• Ms. Sunita</li> <li>• Ms. Lalitha</li> <li>• Ms. Jaya</li> </ul>
9	16-2-2006	Apollo Hospital, Jubilee Hills, Hyderabad	Corporate Hospital with state of the art facility	<ul style="list-style-type: none"> <li>• Dr. B. Shyamala</li> </ul>
10	16-2-2006	Andhra Pradesh State AIDS Prevention & Control Society – APSACS, Hyderabad	Offices of APSACS and Directorate of Health Services	<ul style="list-style-type: none"> <li>• Dr. Ramana Rao, Dy. Director, In-Charge - Blood Bank</li> <li>• Smt. K. Damayanti, Project Director</li> </ul>

Sr. No	Date	Contact Address	Facilities visited	Stake holders
11	16-2-2006	PATH, Sultan Bazar, Koti, Hyderabad.	Office	<ul style="list-style-type: none"> <li>• Dr. Satish B. Kaipilyawar, Sr. Prg. Mgr - Immunisation</li> </ul>

### **The Government General & Chest Hospital Erragadda, Hyderabad.**

#### **General overview of Facility:**

The Government General and Chest Hospital Hyderabad, is a state government funded 670 bed hospital which is in existence since the past 100 years. Originally started by the Nizam of Hyderabad (the old building in use was donated by the Nizam), the hospital today offers multi-speciality services like Chest & spine related problems, also orthopaedics, Paediatric unit (chest related), Cardiology and Support and Care centre, while serving as a teaching hospital associated with Osmania Medical College.

The hospital has total staff strength of 56 doctors, 12 post graduate interns and 12 house surgeons. In addition to this, there are 105 nurses including 22 ward boys and 16 female attendants. The technical staff is nearly 25 and have nearly 10-12 laboratory technicians. The total of class 4 employees – sweepers, etc., amount to 240. Since the occupancy of the hospital is 70-75% of the total capacity at its peak, the staff strength managed based on the work load at different wards suffices the requirement.

The new building housing the **Care and Support Centre** was established recently in October 2005 and is dedicated to HIV/AIDS, TB and related infectious diseases post HIV infection. Prior to these unit AIDS / HIV patients were treated in separate wards of the hospital. This unit is built with the funds of APSAC. The Centre has a VCCTC centre apart from a microbiology lab, a CD4 testing facility and an OT.

The newly constructed Centre is 100 bedded housing 50 male and 50 female patients. Patients admitted generally belong to the economically backward classes, although no such criteria regarding the class of patients to be admitted exists.

### **Overview of Training programme regarding IC & WM Practices**

- Training programme/orientation on Infection control and waste management Practices provided. People are aware of the IC practices.
- Training involved information of UP, PEP, segregation of hospital related bio-wastes and their disposal.

### **Overview of the Infection Control measures adopted**

- Use of personal protective equipment like gloves and masks during day to day operations
- Segregation of needles and sharps and treating with hypochlorite solution before disposal.

### **Overview of the Waste Management Practices adopted**

- A. Within the facility –
  - a. Segregation of wastes.
  - b. Segregated wastes if hazardous are treated with hypo solution, collected and deposited at one place for disposal.
- B. Outside the facility
  - Waste is collected from the hospital by the state government authorized disposer and is incinerated in Pathanchauli, Hyderabad wherein the incinerator is located.

Interviewee	Comments & Feedback	Observation / Remarks
<p>Syed Khadiruddin Designation - Lab technician (VCCTC) Qualification – D.M.L.T., Training – In-house training on HIV/AIDS provided by APSACS. Exp – 3.5 years (in present place of occupation) Total Exp – 5 Years</p>	<ul style="list-style-type: none"> <li>• <b>Tests for detection of HIV positive cases</b> <ul style="list-style-type: none"> <li>- Comb AIDS</li> <li>- EIA comb</li> <li>- Retroquic</li> </ul> </li> </ul> <p>Comb Aids –first test carried out after collection of samples</p> <ul style="list-style-type: none"> <li>- Results if positive then the other two tests are conducted.</li> <li>- Results if negative no report is released.</li> <li>- Repeat tests are carried out twice after the first test after a window period of 3 months.</li> <li>- Blood bottles later if result – ve washed with hypochlorite solution, washed, autoclaved and put to use.</li> <li>- in case result has been +ve blood bottles are put with hypochlorite solution and discarded.</li> <li>- Plastic plates on which spot test are done is dipped in hypo solution for ½ hour and later discarded in the Blue polybag.</li> </ul> <ul style="list-style-type: none"> <li>• <b><u>Infection Control</u></b> <ul style="list-style-type: none"> <li>- During day to day operations of the lab, personal protective equipment (gloves &amp; masks) is used by the staff, which includes two trainees and a attendant.</li> <li>-In case of accidental cut / needle prick or contact of fresh wound with patient’s blood, saliva, etc. cleaning of the affected part with spirit and medication by consuming Pantrex tablets (PEP) as prescribed by the physician.</li> </ul> </li> <li>• <b><u>Waste Management</u></b> <ul style="list-style-type: none"> <li><b># Within the Facility</b> <ul style="list-style-type: none"> <li>-Plastic Wastes (syringes and tips) disposed in Blue polybag within dust bin</li> <li>- Needles cut in a thermo-mechanical crusher and disposed in 10% hypochlorite solution.</li> <li>- Blood stained cotton, bandages etc disposed in Yellow polybag within dust bin.</li> </ul> </li> <li><b># Outside the facility</b> <ul style="list-style-type: none"> <li>- Bio-medical wastes collected by the daily</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- The tests for determination of HIV/AIDS as mentioned are carried out in sequence, one after the other as per the conditions mentioned in the comments section.</li> <li>- Technicians of the lab adhere to the instructions of following the safety measures.</li> <li>- Trainees are not fully aware of PEP and this makes it important that training be imparted to the staff after short gaps.</li> <li>-Polybag for usage in dust bin is as per availability. Colour code as per Annexure I is not strictly adhered to.</li> <li>- Hypochlorite solution is not used in the needle crusher.</li> <li>- State government bio – waste disposer collects the waste as per the charges decided by the government which are Rs. 2/- per bed in</li> </ul>

Interviewee	Comments & Feedback	Observation / Remarks
	waged labourer and deposited into a disposal room, from where the State government authorized bio-medical waste disposer 'Bio-Hazard' collects the wastes regularly and burns the collected waste in the incinerator located at Pathanchauli, Hyderabad.	the Hospital.
<p>Ms. Sandhya Rani, Counsellor – VCCTC M.S.W., undergone 27 days training by APSACS (exp: 6 months in this centre total experience 10 years)</p>	<ul style="list-style-type: none"> <li>- Total 25-40 cases/day, less than 25% HIV +ve.</li> <li>- ~ 60% cases come voluntarily rest 40% referred.</li> <li>- Patient after registration undergoes pre-test counselling done on a 1:1 basis (introduction, information about HIV, etc.)</li> <li>- Patient signs consent form, blood sample taken for testing, results of samples tested given next day by the counsellor to the patient on a 1:1 basis.</li> <li>- Report if –ve, post counselling given (on window period, behavioural change, condom usage, safe sex practises), informed to come after the window period (3 months followed by another 3 months) for testing again.</li> <li>- Report if +ve post counselling done. Advised for CD4 test, directed to associate with the Network for HIV + patients and collect medicines.</li> <li>- As of now, no medicines given. Patients to collect medicine from the HIV + patients' network, also drop-in centres and care centres.</li> </ul>	
<p>Ms. Padma Stella Staff nurse since Dec 2005 in the Support and Care Centre (otherwise working as nurse since 1977)</p> <p>Dr. Ajay Qualification – M.B.B.S., M.D.,(Chest Medicine) Exp – 1 month (appointed by APSACS) Training – attended in house</p>	<ul style="list-style-type: none"> <li>- ART drugs, TB drugs provided, CD4 test and for other diagnostic treatment carried out.</li> <li>- patients admitted if very sick, as no other hospitals admit</li> <li>- If ART is to be provided</li> <li>- Referred patients in case of HIV + and /or TB.</li> <li>- Treatment totally free.</li> </ul> <p><b><u>Treatment of HIV + patients:</u></b></p> <ul style="list-style-type: none"> <li>- If CD4 count is less than 50- condition of patient considered serious, chances of secondary infections most.</li> <li>- If CD4 count less than 200 - Patient admitted, test for ART compatibility,</li> </ul>	<ul style="list-style-type: none"> <li>- Awareness of PEP exists although nurses may be unaware of universal precautions.</li> </ul>

Interviewee	Comments & Feedback	Observation / Remarks
<p>training programme &amp; provided training by APSACS on HIV/AIDS.</p> <p>In Charge Unit – I Care &amp; Support station for HIV/TB patients.</p>	<p>after condition stabilises discharged and given drugs every month free of charge.</p> <ul style="list-style-type: none"> <li>- If CD4 count more than 200 -</li> </ul> <p>Patient put on prophylactic treatment (as patient is easily prone to contract TB), patient therefore evaluated for TB and HIV +.</p> <p>Discharged after stable with medicines.</p> <ul style="list-style-type: none"> <li>• <b><u>Infection Control</u></b> <ul style="list-style-type: none"> <li>- Bin besides each patient</li> <li>- During day to day operations personal protective equipment like the gloves and masks are worn which are available in sufficient quantity quarterly by APSACS.</li> <li>- Gloves not necessarily changed for each patient.</li> <li>- Nurses are aware of procedures of UP and PEP but not the terms.</li> <li>- In case there is any exposure through cuts and pricks, first aid is provided and PEP administered.</li> </ul> </li> <li>• <b><u>Waste Management</u></b> <ul style="list-style-type: none"> <li>- The procedure followed is same as in other wards.</li> </ul> </li> </ul> <p>(same as mentioned earlier in above section )</p>	
<p>Microbiology and Pathology Laboratory</p>	<ul style="list-style-type: none"> <li>- Tips put in hypochlorite solution and discarded.</li> </ul>	<ul style="list-style-type: none"> <li>- gloves not used for testing</li> </ul>
<p>Jagadish Ward boy (exp: 15 years) Male Ward (general)</p>	<ul style="list-style-type: none"> <li>- Building old ~ 100 years.</li> <li>- Yellow bins with yellow polybags used for gloves, plastic tube, covers, etc.</li> <li>- Red bins with red polybags used for paper, cotton with blood, patient’s body fluids.</li> <li>⌚ Blue bins with blue polybag used for cover, gloves, etc.</li> <li>⌚ all waste disposed without hypochlorite solution, later next day segregated, hypo solution put in tied polybags and placed at the common disposal point of hospital</li> </ul>	<ul style="list-style-type: none"> <li>- The sanitary drains completely choked in some wards leading to overflow of drain water which comes into the wards. - Support staff unaware of UP, and segregation of bio – medical wastes.</li> </ul>

Interviewee	Comments & Feedback	Observation / Remarks
<p>Dr. R. Jagannatha Rao Designation – R.M.O. Exp – more than 10 years. Training – In house training regarding HIV/AIDS and waste management practices.</p>	<p>IC committee not present. However, the administration (health supervisor, Asst. Med. Supdt., matron, nurse supdt. and RMO-II) take care of the implementation and follow-up of IC measures.</p> <ul style="list-style-type: none"> <li>- WM committee not present. Medical Superintendent, RMO, matron, health supervisor jointly take regular rounds of the hospital, also care of the waste management also IC measures to be followed.</li> <li>- Waste collected by external agency – SembRamky for incineration at their Hayatnagar facility.</li> <li>- Quarterly visits from PCB and MCB are there to over IC and WM practices.</li> <li>- Information imparted to people during rounds for the implementation of IC and WM measures.</li> <li>- No shortage of any supplies.</li> </ul>	<p>- Few posters on HIV/AIDS displayed in hospital in Telugu, but nothing in Hindi/English. – No posters displayed about UP and PEP.</p>

## LEPRA India

### Sai Nagar, Secunderabad

#### PSH Project – Truckers.

The programme was started by LEPRA in 1998 with the funding of the Department of International Funding (DFID). The programme was aimed at truckers plying on the NH – 7 and the transit through Hyderabad. The highway being the longest i.e. 4500 Kms, there are 4 centres – 3 on the highway and one in Hyderabad. The programme of LEPRA concentrates on sex education, sexually transmitted diseases – STD, HIV/AIDS among the truckers, condom promotion and behaviour change among the drivers/truckers regarding sexual encounters of the truckers with the prostitutes and usage of condoms and its disposal. With 4 of its centers the programme aims to cater to 100% of the truckers operating on the NH – 7.

## **Overview of Training programme regarding IC & WM Practices**

- Educational shows organised on the road side places – petrol pumps, dhabas, etc., for imparting knowledge about health education to Truck drivers for about hygiene, STD, HIV/AIDS, promoting usage of condoms and proper disposal. The shows involve peer educators, counsellors, use of educating charts, flip-charts, etc.

### **Project:**

- **Mobile Clinic Initiative**

The infrastructure includes a vehicle supplied by NGO free of cost. LEPRAs pay Rs. 5 per km for the vehicle.

These clinics put a tent besides the road, counsellors who speak to the truckers, encourage them to visit the clinic where in the patients are educated, based on need be (found by physical appearance and sexual history) are tested. Suspected cases are given medicines which are free of cost. However an initiative has been undertaken to convince truckers to bear some cost, to make them responsible users. Money thus collected is diverted to help lorry cleaners who are in need of drugs.

The truckers are advised to take the prescribed dose of medicines and visit a Registered Medical Practitioner later.

### **Counselling:**

LEPRA finds it difficult to counsel, as have to sit besides the road and time spent with the truckers is very less and often the counselling is not one to one.

General issues that are addressed:

- One to one counselling (many a times not possible)
- Consequences of not taking treatment when diagnosed with STDs
- Full treatment
- Partner treatment

- Condom promotion
- Seeking medical advice (and its importance)

• **Initiatives by LEPRA**

Total peer educators – 80

Yearly honorarium to peer educators Rs 500/-.

More thrust is given to self satisfaction for doing this job, which will help saving lives.

In the first four year incentives were given in the form of gifts like chairs, tables, watches etc. However it became repetitive hence in the 5<sup>th</sup> year a picnic for all peer educators was organised. This also helped in greater interaction. They are also being honoured in public by distinguished personalities.

Presently 2 insurance policies are provided and if association is committed for a long span then premium will be filled by LEPRA. Insurance initiatives include Mediclaim policy for Rs.20,000/- and an Accident Insurance Policy for Rs.1,00,000/-. Premium: Mediclaim – Rs 450/- and Accident insurance – Rs 300/-.

NACO also is providing incentives. Suggestions have come for separately saving this money together and a part is donated for patients like truck cleaners who cannot avail the treatment due to financial reasons. A chit fund scheme so that the peer educators can avail small loans (for less interest) is also being worked out.

Interviewee	Comments & Feedback	Observation / Remarks
Mr. Ramesh M.S.W., Project Manager - PSH truckers (Exp- 8 years)	<ul style="list-style-type: none"> <li>- Setting up halt points at gaps of about 40 Kms,</li> <li>-Truckers during their transit spend time ranging between 24 hours to 7 days at the various halt points.</li> <li>-LEPRA people visit these halt points regularly and start there</li> <li>- interaction with the truckers involves general health conditions, HIV and safe sex</li> </ul>	

Interviewee	Comments & Feedback	Observation / Remarks
	<p>practices</p> <ul style="list-style-type: none"> <li>- Hesitation in open discussion regarding sex.</li> </ul> <p><b>Staff:</b>  Counsellors – 8  Field Workers – 2  Medical Officers – 2</p> <p><b><u>Mobile clinic:</u></b>  Total staff includes-  Outreach workers – 2  Counsellors – 1  Medical officer – 1</p> <p><b><u>Counselling</u></b>  Problems frequently encountered;</p> <ul style="list-style-type: none"> <li>- Distraction and time factor</li> <li>- Lack of proper environment</li> <li>- 7 SIT cases are counselled in 1 mobile van at a single halt point.</li> <li>- Motivation is given to visit VCCTC centre.</li> <li>-30% truckers come back to this area. 50% are counselled by LEPRAs and the remaining by peer educators who are total about 80 in the LEPRAs programme.</li> </ul> <ul style="list-style-type: none"> <li>• <b><u>Condom Promotion</u></b> <ul style="list-style-type: none"> <li>- explain what is a condom</li> <li>-why it should be used</li> <li>-how to be used</li> <li>-Demonstration</li> <li>-Promotion of different brands</li> </ul> </li> </ul> <p>Design of driver’s kit which includes a condom pack apart from other necessary items like comb, soap, hair oil etc.</p> <ul style="list-style-type: none"> <li>• <b><u>Infection control &amp; waste management</u></b> <ul style="list-style-type: none"> <li>-Education of truckers and commercial sex workers regarding disposal of condoms</li> <li>-Consequences of not disposing</li> </ul> </li> </ul>	

Interviewee	Comments & Feedback	Observation / Remarks
	properly -Promoting buying of condoms -Provision of condoms in brands -Hesitation in buying from medical shops/general shops like STD/ISD booth, hence provision of driver's kit. -ATC vending machines in the line of ATMs. All time condoms. -ATC machines have been a failure mainly due to technicalities of the machine	

### **AMR, Area Hospital, Bhaungiri**

#### **General overview of the facility**

The AMR area hospital is located in the town of Bhaungiri, Warangal district, Andhra Pradesh. It has a general hospital, sponsored by the state Government and serves the local populace of Bhaungiri and adjoining areas in Warangal District. The hospital has 14 nurses out of which 4 have been provided training on HIV/ AIDS by DCH at Nalgonda. It has a maternity ward. Each month on an average about 50 deliveries take place out of which maximum cases are normal deliveries. Caesarean cases are few, and amount to 15 – 20 in every month. Of all the deliveries, on an average about 3-4 cases are HIV +ve delivery cases. The hospital has an operational VCCTC centre run by APSACS and has a counsellor appointed. The VCCTC centre is operational since 2002.

#### **Overview of Training programme regarding IC & WM Practices**

- Specific Training programme on Infection Control and Waste Management Practices not provided, however training on HIV/AIDS was conducted by Department of community health (DCH).
- Training involved information of PPE and PEP and segregation of wastes and their disposal.

#### **Overview of the Infection Control measures adopted**

- Use of personal protective equipment like gloves and masks during day to day operations
- PEP awareness.

### **Overview of the Waste Management Practices adopted**

#### **A. Within the facility**

- Waste is segregated. Practices not as per WM guidelines.
- Segregated wastes are collected and deposited at one place for disposal.

#### **B. Outside the facility**

- Waste is burnt outside the hospital.

<b>Interviewee</b>	<b>Comments &amp; Feedback</b>	<b>Observation / Remarks</b>
<p>Ms. Bipasha Edn: 7<sup>th</sup> std. Aayah (exp: 13 years in all in this hospital)</p> <p>Ms. Jayalakshmi Head Nurse (Exp: 3 Yrs in present hospital) Overall Exp – 23 Years)</p>	<ul style="list-style-type: none"> <li>• <b>Infection Control</b> <ul style="list-style-type: none"> <li>- During normal dressing (PPE) gloves and masks not worn by staff</li> <li>-Gloves &amp; masks(PPE) worn only during OPD / Operating room / labour operations</li> <li>-Bleaching powder/Hypochlorite solution available for cleaning</li> </ul> </li> <li>If exposed to needle pricks/cuts, first aid availed.</li> <li>• <b>Waste Management</b> <ul style="list-style-type: none"> <li><b># Within facility</b> <ul style="list-style-type: none"> <li>-Wastes are segregated</li> <li>-During emergency labour all wastes deposited in one bin (Blood stained cotton, plastic syringes, needles, placenta)</li> </ul> </li> <li><b># Outside facility</b> <ul style="list-style-type: none"> <li>Wastes collected by contract staff and burnt.</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- Needle cutter not available.</li> <li>- No usage of Hypochlorite solution in waste collection bin.</li> <li>-PEP procedure display is only at one place in the hospital and the hoarding is in English.</li> <li>- Awareness of waste segregation exists, however poly bag usage depends on availability</li> </ul>
<p>Name – N. Jagdish Counsellor (VCCTC) M.A., M.Phil. (Social Science) Exp: 3 ½ years.</p>	<ul style="list-style-type: none"> <li>• <b>Infection Control</b> <ul style="list-style-type: none"> <li>-General awareness about condom usage exists among the local populace.</li> <li>- Need for further training &amp; awareness regarding PEP especially to level-4 staff in hospital.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>-Condom promotion done with the help of demonstration - PEP procedure dis-played in English near</li> </ul>

Interviewee	Comments & Feedback	Observation / Remarks
	<p>-PEP supply is intermittent</p> <ul style="list-style-type: none"> <li>• <b>Waste management</b></li> </ul> <p>Waste disposal awareness less among local populace.</p>	<p>VCCTC lab by way of a hoarding.</p> <p>-Demonstration of disposal of contra-ceptive is also provided.</p>

**Karunalayam  
Warangal, Andhra Pradesh**

**General overview of the facility**

Karunalayam, a 40 bedded hospital established in 2002, is mainly a Care & Support Centre for HIV / AIDS. This centre provides support to patients who are in an advanced stage of infection and who have been ostracized by family/society. Support is provided in the form of medicines, food and nutrition supplement. Food is also provided to patient’s attendants (as most of them are rural and distant places). The centre receives direct funding from agencies like APSACS, Catholic Health Association of India (CHAI). APSACS provides Rs 4000 per month per bed which amounts to Rs 9,60, 000 /- per annum and remaining funds are provided by CHAI. The finance provided takes care of the free medicines and food provided to patients.

The centre caters for patients from Warangal, Karimnagar, Nalgonda, Adilabad, Khammam who generally come on their own although some of them are referred by dropping centres of the institution located at these 5 centres. These drop-in centres provide drugs and counselling support and refer the serious cases to the main centre. The advantage of having drop-in centres is that a patient need not spend his own financial resources (which is already scarce) in coming to the main centre.

**Overview of Training programme regarding IC & WM Practices**

- Specific training programme on Infection Control and Waste Management Practices not provided, however general instructions given.

**Overview of the Infection Control measures adopted**

- Use of personal protective equipment like gloves and masks during day to day operations
- PEP awareness

### **Overview of the Waste Management Practices adopted**

#### **A. Within the facility**

- a. Segregation of wastes is as per annexure –I
- b. Segregated wastes are collected and deposited at one place for disposal.

#### **B. Outside the facility**

- Waste is disposed into a pit dug about 25 feet deep, 100 mts from the Centre.

Interviewee	Comments & Feedback	Observation / Remarks
<p>Father Jotish Director (Exp – 3 yrs in present organisation) Overall Exp –.NA</p>	<ul style="list-style-type: none"> <li>• <b>Infection Control</b> Mainly by: <ul style="list-style-type: none"> <li>- Counselling</li> <li>- Precautions</li> <li>- Demonstration</li> </ul> </li> <li>-Generally, non-compliance can be attributed to attitude of patients wherein it is observed that about 10% do not tend to follow safety and cleanliness guidelines because of the feeling that society at large is responsible for our condition and hence they should also get affected.</li> <li>- Behavioural problems can be observed in patients who have been commercial sex workers and tend to retain their urge to have sex inspite of being infected.</li> <li>• <b>Waste management</b> <ul style="list-style-type: none"> <li># <b>Within the facility</b> Segregation is being carried out.</li> <li># <b>Outside the facility</b> Waste disposal is mainly by segregation and burning in a pit</li> </ul> </li> <li><b>Suggestions</b> Government should provide funding so as to encourage individual incinerators. <ul style="list-style-type: none"> <li>- Training in villages as to how to segregate</li> </ul> </li> </ul>	

Interviewee	Comments & Feedback	Observation / Remarks
	<p>and dispose waste at home.</p> <p>- Provision of more ARV centres – say in all teaching hospitals.</p>	
<p><b>Varsa Anujya</b>  HIV +ve Patient  32 yrs. Male  Marital status – married since 14 yrs (ostracized by family)  Children – 2  Employment – Previously employed in Mumbai with BSES as a contractual staff</p>	<p>-Infected since 15 years; came to know 5 years ago</p> <p>-Probable reason of getting infected is due to having sex with commercial sex workers prior to marriage</p> <p>- Not had sex after being informed about infection</p>	<p>-General awareness about disease exists</p> <p>-Is aware of contraceptive usage if having sex, so as not to spread infection</p> <p>-Not used contraceptive, since didn't have sexual relation after being informed about infection</p> <p>-Not aware of proper disposal procedure of condom</p>
<p><b>Mr. Yadagiri</b>  HIV +ve patient  36 yrs, Male  Marital status – married (ostracized by family)  Children – 2  Employment – Labour</p>	<p>- Not aware of the time since when infected</p> <p>- Informed about infection since November 2005</p> <p>- Not had sex since informed about infection</p> <p>- Possible source of infection is sexual relationship with CSW</p>	<p>- aware of the disease</p> <p>- aware of condom usage</p> <p>- has not had sex since informed about infection</p> <p>- not used condom till date</p> <p>- not aware of proper disposal mechanism of condom</p> <p>- is most likely to throw away condom far from him after using it.</p>
<p><b>Mrs. Tholassi</b>  HIV +ve patient</p>	<p>-Aware about infection when tested during pregnancy</p>	<p>- general awareness about the disease</p>

Interviewee	Comments & Feedback	Observation / Remarks
21yrs, Female Marital status – Separated from husband Children – NA Employment – Counsellor/peer educator with Karunalayam	- Possible source is husband who had multiple partners -Husband in native village of Shreekakulam ; infected and taken care by parents - Aborted child when came to know about infection	exists - has not had sex since being infected - no multiple partners - never used condom - aware of usage of condom - aware of disposal of condom

**District Hospital, Jangaon  
Warangal District, Andhra Pradesh**

The district hospital at Jangaon caters to the general population of Jangaon, providing necessary medical support in the form of counselling in VCCTC and PPTCT. The VCCTC generally is proactive especially regarding communication and awareness about HIV/AIDS and the methods of its spread. The aspect of infections due to improper waste disposal is addressed. However, the general view among the counsellors is that more awareness programmes are necessary before complete understanding is imparted with effect to waste management and waste disposal.

The VCCTC centre run through APSACS has Mr. Ramesh as its counsellor and PPTCT councillor appointed is Ms Padma.

**Overview of Training programme regarding IC & WM Practices**

- Specific Training programme on Infection control and waste management Practices not provided.

### Overview of the Infection Control measures adopted

- Use of personal protective equipment like gloves and masks during day to day operations
- PEP awareness exists.

### Overview of the Waste Management Practices adopted

#### **A. Within the facility**

- a. Segregation of wastes is unclear and non-uniform.
- b. Segregated wastes are collected and deposited at one place for disposal.

#### **B. Outside the facility**

- Waste is collected by municipal agency

Interviewee	Comments & Feedback	Observation / Remarks
<p>Mr. L. Shreedar B.Sc., Lab Technician - VCCTC (Exp: 4 years in present hospital Overall exp – 8 yrs.)</p> <p>Mr. Ramesh M.A., (Social Work) Counsellor - VCCTC (Exp: 1 year in present hospital Overall exp – 4.5 yrs)</p>	<ul style="list-style-type: none"> <li>• <b>Infection Control</b> # PPE : -Usage of gloves during collection and sampling of blood from patients. - Disposable paper gloves and general plastic gloves are used during day to day work.</li> <li># PEP: -In case of accidental exposure (cuts and pricks etc) first aid is applied and after consultation of doctor PEP availed.</li> <li>• <b>Waste management</b> # Within the facility - Waste is disposed in polybag is unclear and non-uniform.</li> <li># Outside the facility - Waste collected by municipal agency.</li> </ul>	<ul style="list-style-type: none"> <li>- Masks are not used as they are not available</li> <li>- Supply of equipment is not regular.</li> <li>- PEP is not supplied to the hospital. In case of exposure, it is purchased from private medical vendor outside the premises and reimbursement claimed.</li> <li>-No information is available regarding method of disposal.</li> </ul>
<p>Ms. Padma D. M.S.W., 2 weeks induction training by LEpra, 3 refresher courses of 2 days each</p>	<ul style="list-style-type: none"> <li>- Pregnant ladies registering at the hospital OPD first visit PPTCT</li> <li>- They are counselled in a group of 5-6 (about modes of HIV</li> </ul>	

Interviewee	Comments & Feedback	Observation / Remarks
Counsellor - PPTCT (exp: 9 months)	<p>transmission, STDs, methods of testing HIV status) orally also using charts and DVD show.</p> <ul style="list-style-type: none"> <li>- Patient to fill the voluntary consent form before testing</li> <li>- Blood collected at the laboratory for testing</li> <li>- Patient is asked to meet the doctor undergo tests</li> <li>-Patient to visit collect reports from the counsellor next day</li> <li>- If report –ve patient counselled for safe practices</li> <li>- If report + ve 1:1 counselling done (about health care, imp. Of nutritional diet) suggested undergoing delivery at hospital, follow-up every month. Nevarapin tablet 200mg for mother 72 hours before delivery and Nevarapin tonic 5ml/kg body weight to the child within 72 hours of birth administered.</li> </ul>	
Ms. Malathi Staff Nurse (exp: 7yrs)	<ul style="list-style-type: none"> <li>- Gloves used for OT and labour room.</li> <li>- Disposable needle and syringe used.</li> </ul>	<ul style="list-style-type: none"> <li>- No gloves seen.</li> <li>-Blood stains noticed surrounding the dust bin.</li> <li>- Mechanical tong cutter seen no use of hypochlorite solution seen.</li> </ul>

## Community Health Centre, Ghatkesar

### General overview of facility

The CHC a 50 bedded hospital provides necessary medical support in the form of counselling in VCCTC. The VCCTC is newly installed and lacks proper PEP and PPE supply due to budgetary constraints. The hospital has staff has undergone a training in infection control and waste management.

### Overview of Training programme regarding IC & WM Practices

- Specific Training programme on Infection control and waste management Practices provided.
- Training involved PPE and PEP awareness and details of segregation of wastes

### Overview of the Infection Control measures adopted

- Use of personal protective equipment like gloves and masks during day to day operations
- PEP awareness exists.

### Overview of the Waste Management Practices adopted

#### **A. Within the facility**

- a. Segregation of wastes guidelines not uniformly followed.
- b. Segregated wastes are collected and deposited at one place for disposal.

#### **B. Outside the facility**

- Waste is collected by municipal agency

<b>Interviewee</b>	<b>Comments &amp; Feedback</b>	<b>Observation / Remarks</b>
Dr. Rajsekhar M.B.B.S., D.C.S., Resident Doctor (Exp: 8 years.)	<ul style="list-style-type: none"> <li>• <b>Infection Control</b> <b># PPE :</b> -Usage of gloves during collection and sampling of blood from patients. - Disposable paper gloves and general plastic gloves are used during day to day work.</li> <li><b># PEP:</b> -In case of accidental exposure (cuts and pricks etc) first aid is applied and after consultation of doctor PEP availed.</li> <li>• <b>Waste management</b> <b># Within the facility</b> - Waste is disposed in polybag. Segregation practices unclear and non-uniform.</li> </ul>	<ul style="list-style-type: none"> <li>-Masks are not used as they are not available</li> <li>-Supply of equipment is not regular.</li> <li>- PPE is not worn by the cleaning / housekeeping staff.</li> <li>- PEP is supplied to the hospital.</li> <li>-Waste segregation is not done.</li> <li>-There is no regular cleaning</li> <li>-General appearance of the unit is dirty and unhealthy</li> <li>-Municipal sweeper visits the hospital once in a day and collects the wastes.</li> </ul>

Interviewee	Comments & Feedback	Observation / Remarks
	# Outside the facility - Waste collected by municipal agency.	

**Hindustan Latex Family Planning Promotion Trust  
(Project Support Unit – AP)  
Hyderguda, Hyderabad 29**

*Dr. Anita Rego, Team Leader*

- a. Suggests use of small incinerators to be encouraged. Government should promote and help technology growth, providing soft loans and subsidies to set up incinerator in the hospital facility.
- b. To study the feasibility of use of bio-degradable plastics for the use of condoms.

**Integrated Rural Development Services (IRDS)  
Sitaphalamandi, Hyderabad**

An NGO working on a programme with commercial sex workers towards their health education, creating awareness about STD and HIV/AIDS, condom usage and condemnation since 1999. The Centre also runs a clinic.

The Center is funded by APSACS and is associated with HLPFPT. The clinic/programme is funded by Bill and Melinda Gates Foundation.

Interviewee	Comments & Feedback	Observation / Remarks
Ms. Shantamma (45) CSW and Peer educator (in profession since last 20 years)	- Are aware of STD diseases, HIV/AIDS through IRDS - Aware and insist on the use of condoms and proper condom disposal. - Aware of ways of condom disposal.	
Ms. Swaroopa (31) CSW and Peer educator (in profession since last 5 years)	- Would also educate other commercial sex about ways of having safe sex, promote use of condoms and safe disposal of the same. - Would promote CSWs to visit clinics for any health related problems.	

Interviewee	Comments & Feedback	Observation / Remarks
<p>Ms. Sushila (25) CSW and Peer educator (in profession since last 2 years)</p> <p>Ms. Sunitha (30) CSW and Peer educator (in profession since last 3 years)</p> <p>Ms. Lalitha (40) CSW and Peer educator (in profession since last 7 years)</p> <p>Ms. Jaya (28) CSW and Peer educator (in profession since last 8 years)</p>	<p>- Would educate HIV +ve women safe practices to be necessarily followed during menstrual cycles and otherwise.</p> <p>- Would educate HIV +ve CSWs to not to donate blood, insist on usage of condoms, not to involve in sex during menstrual cycle period; if inevitable to go for non-penetrative sex practices, follow hygienic practices.</p>	
<p>Dr. Kalpana, M.B.B.S., (exp: 1.5 years in this center. In total: 6 yrs)</p>	<p>- Enough gloves available for examination.</p> <p>- Waste segregation practices followed but no proper way of disposing.</p> <p>- Waste collected disposed which is picked by the City Municipality.</p> <p>- UP and WM chart supplied and BMGF.</p> <p>- PPE used.</p> <p>- Mechanical needle cutter used.</p> <p>- Hypochlorite solution used during the camps held, but not regularly.</p> <p>- Sharps put in Blue polybag after cutting</p> <p>- Gloves, gauges, cotton, swabs put in Yellow polybag.</p> <p>- Blood, cotton swabs soaked in blood, body discharge, etc., put in black polybag.</p> <p>- Scalpel, instruments put in hypochlorite solution for 30minutes, later washed with soap and water and sterilized for 1 hour.</p>	<p>- Hypochlorite solution not being used.</p>

### **Apollo Hospital, Jubilee Hills, Hyderabad**

Is a corporate hospital with state-of-the-art facilities.

#### **Overview of Training programme regarding IC & WM Practices**

- Specific Training programme on Infection Control and Waste Management Practices provided.

- Training involved PPE and PEP awareness and details of segregation of wastes

### **Overview of the Infection Control measures adopted**

- Use of personal protective equipment like gloves and masks during day to day operations
- PEP awareness.

### **Overview of the Waste Management Practices adopted**

#### **A. Within the facility**

- a. Segregation of wastes carried out
- b. Segregated wastes are collected and deposited at one place for disposal.

#### **B. Outside the facility**

- Waste is collected by private agency M/s G J Multiclave (India) Pvt Ltd

<b>Interviewee</b>	<b>Comments &amp; Feedback</b>	<b>Observation / Remarks</b>
Dr. B. Shyamala M.B.B.S., D.C.P., In-charge Blood Bank, (exp: in blood bank since 1989. Total exp: since 1975)	<ul style="list-style-type: none"> <li>• Have good practices of safety IC and WM.</li> <li>• Hospital has separate IC and WM committees.</li> <li>• Committees and head of various departments meet weekly and discuss problems faced, irregularities seen.</li> </ul> <p><b>Infection Control</b></p> <p><b># PPE :</b></p> <ul style="list-style-type: none"> <li>-Usage of gloves during collection and sampling of blood from patients.</li> <li>- Disposable paper gloves and general plastic gloves are used during day to day work.</li> <li>- Pipettes, needle cutters, blood sample cross matching tips all are disposable.</li> </ul> <p><b># PEP:</b></p> <ul style="list-style-type: none"> <li>-In case of accidental exposure (cuts and nicks etc) first aid is</li> </ul>	<ul style="list-style-type: none"> <li>- Masks are used for day to day operations.</li> <li>-Supply of equipment is regular.</li> <li>-PPE is worn by the cleaning / housekeeping staff.</li> <li>- PEP is supplied to the hospital.</li> </ul>

Interviewee	Comments & Feedback	Observation / Remarks
	<p>(cuts and pricks etc) first aid is applied and after consultation of doctor PEP availed.</p> <ul style="list-style-type: none"> <li>• <b>Waste management</b></li> </ul> <p><b># Within the facility</b></p> <ul style="list-style-type: none"> <li>- Waste is disposed in polybags as per WM rules/guidelines.</li> </ul> <p><b># Outside the facility</b></p> <ul style="list-style-type: none"> <li>- Waste collected by municipal agency.</li> </ul>	<ul style="list-style-type: none"> <li>- Waste segregation is done.</li> <li>- There is regular cleaning</li> <li>-General appearance of the unit is clean</li> <li>- Wastes collected by the private agency as mentioned in general overview.</li> </ul>

### APSACS - Complex of the Directorate of Health Services, Hyderabad

Interviewee	Comments & Feedback	Observation / Remarks
<p>Smt. K. Damayanthi Project Director APSACS</p>	<ul style="list-style-type: none"> <li>- Attitude of health workers should change, be more humane and responsible</li> <li>- A lot of doctors refuse to help deliver in case of a HIV + woman.</li> <li>- Should have more focused training also orientation courses aimed at covering all health workers.</li> <li>- Health workers should be made accountable.</li> <li>- For implementation of IC and WM measures Government orders and allocated funds very much required to ensure success.</li> </ul>	<ul style="list-style-type: none"> <li>- Dynamic, supportive of implementation of all projects and programmes of NACO.</li> </ul>

Table 2:

<b>TYPICAL IC-WM EQUIPMENT REPORTING FORMAT</b>				
<b>No.</b>	<b>Type of Material</b>	<b>Quantity per month</b>	<b>Whether Available/Operational (Y/N)</b>	<b>Whether Used (Y/N)</b>
<b>A</b>	<b>Infection Control</b>			
	<i>Disposable Syringes issued</i>			
	<i>Disposable Syringes used</i>			
	<i>Gloves issued</i>			
	<i>Gloves used</i>			
<b>B</b>	<b>Waste Management Equipment</b>			
	<i>Sterilizing equipment</i>			
	<i>Waste Collection Equipment</i>			
	<i>Needle cutters</i>			
	<i>Cleaning equipment</i>			
<b>C</b>	<b>IEC Material</b>			
	<i>IEC Material by type</i>			

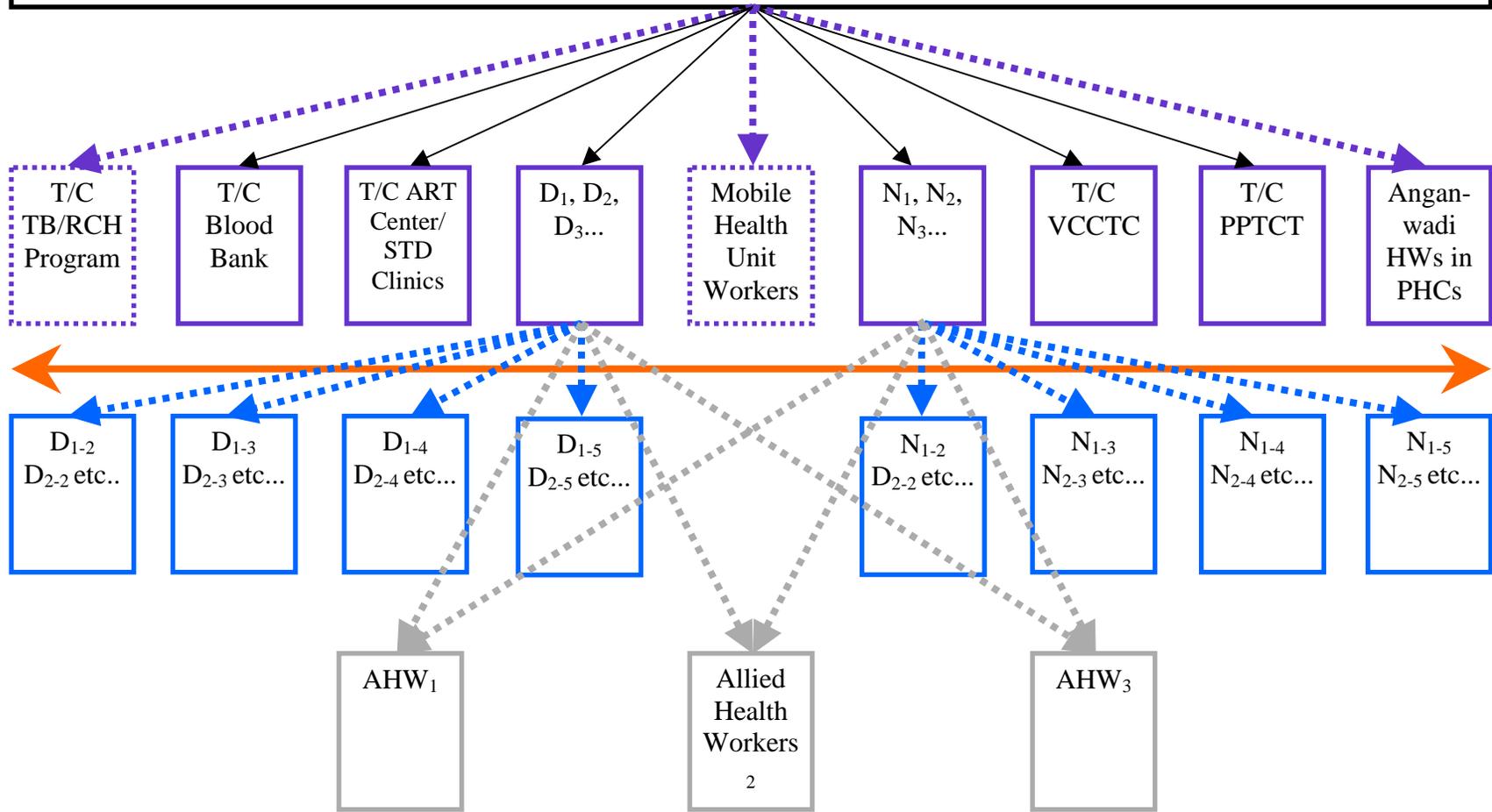
Table 3:

<b>TYPICAL WASTE REPORTING FORMAT</b>				
<b>No.</b>	<b>Type of Material</b>	<b>Quantity per month</b>	<b>Method of collection</b>	<b>Method of disposal</b>
<b>A</b>	<b>Infectious bio-medical Waste Management</b>			
	<i>Blood Samples( tubes or slides)</i>			
	<i>Blood Bags</i>			
	<i>Waste sharps</i>			
<b>B</b>	<b>Other Waste</b>			
	<i>Chemical Waste (from testing)</i>			
	<i>Solid waste</i>			
	<i>Liquid waste</i>			

Table 4:

<b>TYPICAL TRAINING REPORTING FORMAT</b>				
<b>No.</b>	<b>Type of IC-WM Training</b>	<b>Number per month</b>	<b>Hours of training</b>	<b>External faculty/Trainer</b>
<b>A</b>	<b>Orientation</b>			
	<i>Newly inducted staff by category</i>			
<b>B</b>	<b>Refresher</b>			
	<i>Staff by category</i>			
<b>C</b>	<b>Training the Trainers</b>			
	<i>Trainer by category</i>			

**Training Agency (Headed by Joint Director/Deputy Director (Training) of state SACs)**



- ⋯➔ Recommended Status
- ➔ Present Status
- ↔ Chain of Custody

$D_X$ : Doctor from healthcare facility X  
 $N_Y$ : Nurse from healthcare facility Y  
 T: Technician  
 C: Counselor

**IGNOU CERTIFICATE PROGRAM IN HEALTH CARE WASTE  
MANAGEMENT**

Realizing the importance of capacity building in a sound health care waste management system, IGNOU in collaboration with World Health Organization, South-East Asia Regional Office (SEARO) have developed a six-month Certificate program in Health Care Waste management, for the South-East Asia Region Countries. This program will help in developing the needed skills for health care waste management among the different health care functionaries.

The Program was formally launched on 10th March 2006, with Dr. Samlee Plianbangchang Regional Director, World Health Organization, South East Asia Region Office (SEARO) and Vice Chancellor IGNOU, Prof. H P Dikshit shall inaugurating the Certificate Program in Health Care Waste management.

A brief overview of the course contents is provided below:

## 4.9 Detailed Programme Design

Course Code	Title	Credits	Study Hrs
BHM-001	<b>Fundamentals: Environment and Health, Health Care Waste Management Regulations</b>		
	<b>Block 1: Understanding Our Environment</b>	1	30
	Unit 1 Introduction to Environment Unit 2 Environmental Pollutants Unit 3 Interrelationship of Environment and Health Unit 4 Waste Management		
	<b>Block 2: Health Care Waste: Definitions</b>	1	30
	Unit 1 Definitions, Types and Categories of Waste Unit 2 Principles of Health Care Waste Management Unit 3 Handling Health Care Waste		
	<b>Block 3: Need for a Sound Health Care Waste Management</b>	1	30
	Unit 1 Impact of Health Care Waste on Our Environment Unit 2 Impact of Health Care Waste on Human Health Unit 3 Safety Methodology, Worker Safety and Precautions		
	<b>Block 4: Current Status of Health Care Waste Management Legislation in South-East Asia Region Countries</b>	1	30
	Unit 1 Rules and Legislations Unit 2 Regulatory Mechanisms Unit 3 Current Status in India, Thailand, Indonesia, Sri Lanka, Bangladesh Unit 4 Current Status in Bhutan, DPR Korea, Timor Leste, Maldives, Myanmar, Nepal		
BHM-002	<b>Health Care Waste Management: Concepts, Technologies and Training</b>		
	<b>Block 1: Practical Aspects of Health Care Waste Management</b>	2	60
	Unit 1 Managerial and Administrative Aspects Unit 2 Integrated Infection Control Management Unit 3 Disinfection and Transportation Unit 4 Capacity Building, Training and Monitoring		
	<b>Block 2: Systems and Technologies in Health Care Waste Management</b>	2	60
	Unit 1 Systems Options Unit 2 Treatment and Disposal of Health Care Waste–Burn Technologies Unit 3 Treatment and Disposal of Health Care Waste–Non-Burn Technologies Unit 4 Innovative Concepts and Possibilities		
	<b>Block 3: Health Care Waste Management and Emerging Issues</b>	1	30
	Unit 1 Managing Waste Water from Health Care Facilities Unit 2 Management of Wastes from Immunizations Unit 3 Occupation and Patient Safety Unit 4 Success Stories		
	<b>Block 4: Training Manual for Waste Handlers</b>	1	30
BHMP-001	Project	4	120

## 4.9 Detailed Programme Design

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	<b>Block 4: Training Manual for Waste Handlers</b>	1	30
BHMP-001	Project	4	120

**Understanding and simplifying bio-medical waste management: A training manual for trainers**

*By Anu Agrawal, Ratna Singh*

*Published by Toxics Link, 01/01/2005*

**Contribution:** Rs.450.00, 10.00 US\$ (*Shipping and Handling charges extra*)

Training of hospital staff on bio-medical waste management is one of our focus areas. As we attempted to resolve particular problems and respond to the queries of the hospital staff, we enhanced our understanding of the practical problems and the unique needs of healthcare institutions. Apart from training hospital staff, we have also conducted various Training of Trainers (ToT) programmes all around the country, in association with various hospitals and Pollution Control Boards/ Committees.

By the end of such sessions, trainees are exposed to a lot of information, but they do not have enough time to assimilate everything. They have expressed the need for a comprehensive resource on training. This manual has been compiled to fulfill their requirement. The manual has been produced to provide a convenient, up-to-date training resource that will allow interested people and trainers to increase awareness on waste management and related issues at every level in their organization.

The training manual has six sections and each section has slides on a particular topic. Most of the points in the slides are self explanatory, but some of them, which may need explanations, have descriptive notes.

**Contents**

- An introduction to the manual
- How to use this resource
- Suggested training mechanism
- Section A: An overview of bio-medical waste management
- Section B: Implementing waste management in hospitals
- Section C: Training hospital staff
- Section D: Aspects of waste management
- Section E: Rules and policies
- Section F: Alternative technologies
- Section G: Incineration and its hazards
- Section H: Annexures