INFECTION MANAGEMENT AND ENVIRONMENT PLAN

GUIDELINES FOR HEALTHCARE WORKERS FOR WASTE MANAGEMENT AND INFECTION CONTROL IN COMMUNITY HEALTH CENTRES

Ministry of Health & Family Welfare
Government of India
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DFID Department for International Development

The World Bank
Preface

Biomedical waste refers to all wastes generated from healthcare and health research facilities and associated laboratories. While most of this is communal waste, a small percentage can be deemed infectious and/or hazardous. These include infected sharps and wastes with infectious, hazardous, radioactive, or genotoxic characteristics, which if inadequately treated and managed can have adverse impact on the environment and on public health through air, land and water pollution. Therefore institutionalizing effective waste management systems in all healthcare facilities is a key prerequisite to improving efficiency and effectiveness of healthcare.

The regulatory framework for environmental management in the health sector in India is provided by the Bio-Medical Rules (prepared in 1998; amended in 2000 and 2003), which apply to all persons/institutions generating and/or handling healthcare waste in any form. 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 or in the production or testing of biologicals and including categories mentioned in schedule-I of the rules”. The Rules, besides identifying the various waste categories, also recommend treatment and disposal methods and the standards to be laid down for the same.

The Ministry of Health & Family Welfare commissioned the development of a National Policy document to address the issues relating to infection control and waste management and define a framework for implementation of an Infection Management and Environment Plan (IMEP) in healthcare facilities. This policy document was commissioned under the Reproductive and Child Health Programme Phase - II, with technical and financial support from DFID and the World Bank.
The final IMEP document comprises of 2 volumes:

- A Policy Framework document which gives a broad overview and contains generic guidance to central and state level institutions on the type of systems and processes to be established for infection control and biomedical waste management.

- A set of Operational Guidelines which are designed as instruction manuals for healthcare workers at primary level healthcare facilities, i.e. Community Health Centres, Primary Health Centres and Sub Centres. These guidelines are in the form of simple pictorial presentations of the various steps needed to manage infectious waste in a hygienic, safe and environmentally sound manner.

The IMEP Guidelines will be implemented and monitored under the auspices of the National Rural Health Mission (NRHM) and will go a long way to internalise state-of-the art, best practices in managing health and environment risks in the healthcare institutions of our country.

Date: 1st April, 2007

(Naresh Dayal)
Secretary (Health and Family Welfare)
Ministry of Health and Family Welfare
Government of India
Acknowledgement

The Infection Management and Environment Plan document is an important component of the support to primary level healthcare being provided under the auspices of the National Rural Health Mission (NRHM) and Reproductive and Child Health Programme Phase - II. The Policy Framework document and the Operational Guidelines are intended to facilitate and enhance implementation of the Bio-Medical Waste Management Rules of the Government of India.

The vision and constant encouragement provided by Shri P.K. Hota, former Secretary, Health and Family Welfare enabled us to bring out these guidelines. I express my sincere thanks to Shri Naresh Dayal, Secretary, Health & Family Welfare under whose leadership these guidelines have been finalized.

Special thanks are also due to Ms. Ruma Tavorath, Environment Specialist, The World Bank, for her technical contribution and continued guidance to bring the document to its current shape. We are particularly thankful to Dr. Sean Doolan, Environment Adviser, DFID who conceptualized this document and to Mr. Stephen Young, Senior Infrastructure and Urban Development Adviser, DFID for the continued support. Ms. Ellora Guhathakurta, Programme officer, DFID deserves special mention for her meticulous and sustained follow-up and coordination throughout the administrative process.

I recognize the excellent contributions of Mr. S. Vaideswaran, Consultant, The World Bank and Dr. Megha Rathi, Consultant, DFID in successfully translating the concepts of the Policy Framework and Operational Guidelines into reality. Sincere appreciation is due to Shri S.S. Brar, Joint Secretary (RCH) and Shri A.P. Singh, Director (DC) for their leadership, encouragement and guidance.

I acknowledge the contributions of Dr. V.K. Manchanda, erstwhile Deputy Commissioner (MCH), Dr. Narika Namshum, Deputy Commissioner (Child Health and Training),
Dr. I.P. Kaur, Deputy Commissioner (Maternal Health) and Dr. Himanshu Bhushan, Assistant Commissioner (Maternal Health).

I would like to make a special mention of Dr. Manisha Malhotra, Assistant Commissioner, Maternal Health Division, for her unstinting support and unwavering commitment to finalizing, disseminating and enhancing the importance of this activity within the NRHM agenda.

The cooperation and technical inputs provided to this activity by the members of the “Working Group” deserves special mention. So does the contribution of the secretarial staff from the various organizations who have facilitated us in this important activity.

Date: 1st April, 2007

(S. Jalaja)
Additional Secretary
Mission Director, NRHM
Ministry of Health & Family Welfare
Government of India
## Contents

Waste Management in Community Health Centres

A. WASTE MANAGEMENT

1. Steps of waste management
   1.1 Segregation
   1.2 Collection and Storage
   1.3 Transportation
   1.4 Treatment and Disposal

2. Management of different waste streams
   2.1 Sharps
      2.1.1 Sharps and its kind
      2.1.2 Different kinds of needles and syringes
      2.1.3 Broken glasses
      2.1.4 Metal sharps

---

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Management in Community Health Centres</td>
<td>10</td>
</tr>
<tr>
<td>A. WASTE MANAGEMENT</td>
<td>15</td>
</tr>
<tr>
<td>1. Steps of waste management</td>
<td>17</td>
</tr>
<tr>
<td>1.1 Segregation</td>
<td>18</td>
</tr>
<tr>
<td>1.2 Collection and Storage</td>
<td>20</td>
</tr>
<tr>
<td>1.3 Transportation</td>
<td>22</td>
</tr>
<tr>
<td>1.4 Treatment and Disposal</td>
<td>24</td>
</tr>
<tr>
<td>2. Management of different waste streams</td>
<td>26</td>
</tr>
<tr>
<td>2.1 Sharps</td>
<td>26</td>
</tr>
<tr>
<td>2.1.1 Sharps and its kind</td>
<td>26</td>
</tr>
<tr>
<td>2.1.2 Different kinds of needles and syringes</td>
<td>27</td>
</tr>
<tr>
<td>2.1.3 Broken glasses</td>
<td>34</td>
</tr>
<tr>
<td>2.1.4 Metal sharps</td>
<td>36</td>
</tr>
</tbody>
</table>
2.2 Anatomical waste
2.3 Sputum cups and slides
2.4 Discarded blood bags
2.5 Plastic waste
2.6 Liquid waste
   2.6.1 Liquid waste spills
   2.6.2 Disposal of disinfectants
2.7 Mercury spills

B. INFECTION CONTROL
1. Hand washing
2. Personal Protective Equipments
3. Use of Disinfectants
4. Soiled linen management
5. Cleaning floors
6. Sterilization of reusable equipments
7. Storing medicines and chemicals
C. ANNEXURE

1. Schedule 1  
2. Schedule 2  
3. Standards for Deep Burial Pit  
4. Form III (Accident Reporting)
Waste Management in Community Health Centres

A Community Health Centre (CHC) caters to a population of around 1 lakh and undertakes various activities that generate different kinds of waste that need to be managed as per the Bio-medical Waste (Management and Handling) Rules, 1998. These rules make it mandatory for all health care facilities to have a sound health care waste management system. The present guidelines are intended to help the health care workers manage their waste and safeguard themselves and the community from the ill-effects of contaminated waste. This operational guide will help in establishing a sound Health care Waste Management system within the CHCs.

A CHC generates different kinds and quantity of waste based on the activities undertaken by it. The following table explains in brief the different areas and types of waste generated in a CHC.

Always keep your surroundings clean
Table: Areas of waste generation and kinds of waste generated in the Community Health Centres

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Areas of Waste generation</th>
<th>Activities performed</th>
<th>Types of Waste generated*</th>
<th>Consumables used for Managing Waste</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Operation Theatre</td>
<td>Surgical procedures and Emergency Obstetric Care like Caesarean and other medical intervention</td>
<td>Placenta, other pathological tissues, blood and body fluids, soiled waste, swabs, cotton, syringes and needles, blades, tubings and IV sets, gloves, masks, empty blood bags and urine bags</td>
<td>Coloured bags, bins, hub cutter/destroyer, 1% bleaching powder solution, Puncture Proof Container.</td>
</tr>
<tr>
<td>2.</td>
<td>Labour Room</td>
<td>Child birth (Deliveries)</td>
<td>Placenta, blood and body fluids, soiled waste, cotton, swabs, syringes and needles, blades, tubings and IV sets masks and gloves</td>
<td>- do-</td>
</tr>
<tr>
<td>3.</td>
<td>Neonatal Care</td>
<td>Care of the new born</td>
<td>Tubings, IV sets, gloves, syringes and needles</td>
<td>- do-</td>
</tr>
<tr>
<td>4.</td>
<td>Laboratory</td>
<td>Malaria, HIV, TB, and other disease testing facilities along with essential laboratory services</td>
<td>Blood and body fluids, syringes and needles, gloves, slides, AFB slides chemical waste, sputum, sputum cups and liquid waste</td>
<td>- do-</td>
</tr>
<tr>
<td>5.</td>
<td>Injection Room</td>
<td>Immunization and curative injections</td>
<td>Syringes and needles, ampoules, vials, broken glasses and gloves</td>
<td>- do-</td>
</tr>
<tr>
<td>6.</td>
<td>Wards</td>
<td>In-patient services</td>
<td>Blood and body fluids, syringes and needles, slides, ampoules, vials, wine bags, broken thermometers, plaster casts, chemical waste and liquid waste</td>
<td>- do-</td>
</tr>
<tr>
<td>S.No.</td>
<td>Areas of Waste generation</td>
<td>Activities performed</td>
<td>Types of Waste generated*</td>
<td>Consumables used for Managing Waste</td>
</tr>
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</tr>
<tr>
<td>7.</td>
<td>OPD</td>
<td>Out-patient services, routine examination of patients, treating patient with vector borne diseases and water borne disease like diarrhoea</td>
<td>Blood and body fluids, syringes and needles, slides, ampoules, vials, chemical waste, liquid waste, broken thermometer, gloves, cotton and swab</td>
<td>- do-</td>
</tr>
<tr>
<td>8.</td>
<td>Blood storage facility</td>
<td>Facility for storing blood</td>
<td>Blood and blood bags, gloves and other disposables</td>
<td>- do-</td>
</tr>
<tr>
<td>9.</td>
<td>X-Ray Centre</td>
<td>X-ray facilities are provided</td>
<td>X-ray films, chemicals</td>
<td>Bins and bags</td>
</tr>
<tr>
<td>10.</td>
<td>Store</td>
<td>Store</td>
<td>Discarded medicine</td>
<td>- do-</td>
</tr>
<tr>
<td>11.</td>
<td>Kitchen</td>
<td>Cafeteria services</td>
<td>Food waste, packaging material and other general waste</td>
<td>- do-</td>
</tr>
</tbody>
</table>

* General or non-biomedical waste is generated at all the points of waste generation in the health care.
Health care waste is a risk to all, it affects us in different ways.
WASTE MANAGEMENT
1. Steps For Waste Management

Step 1

SEGREGATION

Step 2

COLLECTION AND STORAGE

Step 3

TRANSPORTATION

Step 4

TREATMENT AND DISPOSAL
1.1 Segregation

**Do’s**

1. Always segregate waste into infectious and non-infectious waste at source of generation in the health care facility like CHC, PHC and Sub-centres

2. Infectious waste includes
   a. Sharps: Needles, blades, broken glass which are to be disposed in white/blue puncture proof container
   b. Non-Sharps (soiled waste): Infected plastics, syringes, dressings, gloves, masks, blood bags, urine bags are to be disposed in red plastic bins/bags
   c. Anatomical waste: Placenta, body parts to be disposed in yellow plastic bins/bags

3. Non-infectious (General) waste includes waste similar to household waste like packaging material, cartons, fruit and vegetable peels, syringe and needle wrappers, medicine covers to be disposed in green/black plastic bins or bags

**Don’ts**

Never mix infectious and non-infectious waste either at source of generation, during waste collection, waste storage, waste transportation or during final disposal of waste
Segregation

Always segregate waste at the source of generation.
1.2 Collection and Storage

**Do’s**
1. Always collect the waste in covered bins
2. Fill the bins up to the 3/4\textsuperscript{th} level
3. Clean the bins regularly with soap and water/disinfect the bins regularly

**Don’ts**
1. Never overfill the bins
2. Never mix infectious and non-infectious waste in the same bin
3. Never store waste beyond 48 hrs
Collection and Storage

**Bad:** Don’t overfill the bins

**Good:** Always fill only 3/4th bin
1.3 Transportation

Do’s
1. Always carry/transport the waste in closed containers
2. Use dedicated waste collection bins/trolleys/wheel barrows for transporting waste
3. Transport waste through a pre-defined route within the health care facility

Don’ts
1. Never transport the waste in open containers or bags, it may spill and lead to spread of infections
2. Never transport waste through crowded areas
Transportation

**Bad** - Don’t carry waste in open bags, and never carry it through crowded areas

**Good** - Always carry the waste in secure sealed containers/bags
1.4 Treatment and Disposal

Do’s

1. Always remember to disinfect and mutilate the waste before its final disposal

2. Remember the following while treating the waste streams
   a. Anatomical waste to be deep buried/incinerated
   b. Syringes to be cut (with hub cutters) and chemically disinfected with 1% bleaching powder solution at source of generation before final disposal into sharps pit
   c. Infected plastics to be chemically disinfected or autoclaved, shredded and recycled and sent for final disposal into municipal dumps
   d. General waste without any treatment to be sent to municipal dumps for final disposal

Don’ts

Never throw infectious waste into general waste without any pre-treatment and mutilation
Treatment and Disposal

Ensure disinfection and mutilation of waste before final disposal.
2. Management of Different Waste Streams

2.1 Sharps

2.1.1 Sharps and its Kind

Sharps are such objects that are capable of causing injuries by piercing the skin. Sharps include metal sharps like needles and blades and glass sharps like broken ampoules, vials and slides.
2.1.2 Different Kinds of Needles and Syringes

In the following pages, the waste management of:

a) Disposable syringes,  b) Auto-disable syringes and  c) Glass syringes has been illustrated

Bad - Mixing of waste

Good - Sharps in puncture proof container
a) Disposable Syringes

**Do’s**

1. Always wear protective gears like gloves while handling needles and syringes
2. Always collect needles and syringes in puncture proof containers
3. Always mutilate/cut the tip of the syringe and the needle with a needle and hub cutter before disinfecting them
4. Remember to detach the barrel and the plunger before disinfecting the syringe
5. Disinfect the mutilated needles and the syringes with 1% bleaching powder solution at least for one hour
6. After disinfection and mutilation of needles and syringes collect in puncture proof container
7. Final disposal of disinfected and mutilated syringes in general waste stream/recycling

**Don’ts**

1. Never mix sharps with other waste streams
2. Never throw the needles and the syringes without mutilation and disinfection into the waste bin
3. Never recap or bend needles
4. Never discard the sharps in polybags
5. Never burn the syringes
6. Never dispose the sharps in open areas
Disposable Syringes

Detach the Barrel and plunger

Disinfected and mutilated syringes
b) Auto-Disable Syringes

Do’s
1. Always wear protective gears like gloves while handling needles and syringes
2. Always collect the auto-disable syringes in puncture proof containers
3. Always mutilate/cut the tip of the syringe and the needle before disinfecting them with a needle and hub cutter
4. Disinfect the mutilated needles and the syringes with 1% bleaching powder solution for at least 1 hour
5. After disinfection and mutilation of needles and syringes always collect them in puncture proof containers
6. Final disposal of disinfected and mutilated syringes in municipal dumps/recycling

Don’ts
1. Never mix sharps with other waste streams
2. Never recap the needles
3. Never throw the needles and the syringes without mutilation and disinfection into the waste bin
4. Never burn the syringes
Auto-disable Syringes

Disinfected and mutilated auto-disable syringes.
c) Glass Syringes

Do’s

1. After using the glass syringes remove the needles by forcpes
2. Hold the needles with forcpes while cutting them by a needle cutter
3. Collect the glass syringes in a box
4. Remove the barrel and plungers of the glass syringe and sterilize them in a sterilizer or a cooker for at least 20 minutes
5. Remove the sterilized syringes with sterile forcpes and store them in sterile containers

Don’ts

1. Never reuse the glass syringes without proper sterilization. Ensure proper sterilization of the syringes
2. Never reuse the needles
   Always single use the needles
Glass Syringes

Boiled for 20 minutes

Sterile syringes in sterile containers for reuse
2.1.3 Broken Glasses

Do’s
1. Always safely cut and discard the ampoules and vials in sharps container
2. Finally dispose the broken glasses in sharps pit

Don’ts
1. Never cut the ampoules in such a way that they can hurt others
2. Never break glass sharps manually
Broken Glasses
2.1.4 Metal Sharps

**Do’s**

1. Discard the metal sharps like blades, lancets and scalples in puncture proof container with disinfectant solution
2. Finally dispose the metal sharps in sharps pit

**Don’ts**

1. Never dispose sharps in nonsecure area
2. Never discard the metal sharps in non-puncture proof containers
Metal Sharps
2.2 Anatomical Waste

Do’s
1. Always segregate anatomical parts from other waste streams at the source of generation in yellow bags/containers
2. Collect anatomical waste like placenta in closed bags/covered bins at the source of generation
3. Transport the placenta from source of generation to final disposal site in covered bins/bags
4. Dispose the placenta along with disinfectant in secure deep burial pit

Don’ts
1. Never mix the waste at source of generation or later during collection and transportation
2. Never dispose the anatomical waste in un-secure open areas or in water bodies

Never dispose anatomical waste in open
Anatomical Waste
2.3 Sputum Cups and Slides

Do’s

1. Always wear personal protective gears like gloves and masks while handling sputum cups and slides
2. Dispose the sputum cups and slides in two covered containers with 5% Sodium Hypochlorite solution for at least one hour
3. After disinfection dispose the:
   - Sputum cups into burial pits
   - Slides into sharps pit
   - Liquid waste into drains

Don’ts

1. Never handle highly infectious waste without wearing personal protective gears
2. Never break the slides after use, during disinfection or final disposal. Dispose the slides without breaking them
3. Never dispose any infectious waste without pre-treatment
Sputum Cups and Slides
2.4 Discarded Blood Bags

Do’s

1. Always puncture the discarded blood bags before disinfection
2. Disinfect the blood bags in 5% Sodium Hypochlorite solution for at least 1 hour
3. After disinfection and mutilation, discard the disinfected blood bags in general waste stream
4. Disinfect the cutting instrument used to puncture the blood bag

Don’ts

1. Never handle the blood bags without wearing gloves
2. Never discard the used blood bags without disinfection and mutilation for final disposal
Discarded Blood Bags

- Puncture the blood bag
- Disinfectant solution: 'SOAK IN 5% SODIUM HYPOCHLORITE SOLUTION FOR AT LEAST 1 HOUR'
- Disinfected and mutilated blood bag into general waste
2.5 Plastic Waste

Do’s
1. Always cut/puncture the plastic waste such as intra-venous tubes, bottles, syringes, latex gloves and mask by scissors before disinfection
2. Disinfect the plastics in covered containers with 1% bleaching powder solution at least for one hour
3. Dispose the disinfected and mutilated plastics in municipal dumps or send for recycling

Don’ts
1. Never dispose used plastics without any pre-treatment like disinfection and mutilation before final disposal
2. Never reuse the disposable gloves and masks
Plastic Waste

Removing mask and gloves

Mutilation
2.6 Liquid Waste

Liquid waste is any blood, body fluid, pus, any discharge from wounds or liquid chemicals.

2.6.1 Liquid waste Spills

Do’s
1. Clean the liquid waste spill by adding equal or more quantity of bleaching powder solution and leave the area for 30 minutes
2. Wipe the area with a swab/cloth
3. Discard the swab/cloth after cleaning the area into red bin meant for infectious waste
4. If possible dispose the liquid waste into the drains

Don’ts
1. Never clean liquid waste spills without adding disinfectant to the spills
2. Never reuse the cloth used for cleaning the spills for any other purpose

Reusing the cloth without disinfecting it

Cleaning with a cloth
Liquid Waste Spills
2.6.2 Disposal of Disinfectants

Do’s

1. Always dilute the disinfectant before disposal into drains
2. Wear personal protective gears while handling disinfectants
3. Always destroy the empty disinfectant container to avoid reuse

Don’ts

1. Never dispose the chemicals, disinfectants without diluting them
2. Never use expired chemicals or disinfectants. Send them back to the stores
Disposal of Disinfectants
2.7 Mercury Spills

Mercury is a hazardous chemical used in different instruments like thermometers and blood pressure instruments within the health care facilities. It has to be managed properly to ensure it does not cause harm to the health care workers and the community at large.

Do’s

1. Always wear personal protective gears like gloves and masks while handling mercury spills from breaking of thermometers or leaking blood pressure equipments.

2. Always collect mercury droplets together by using two cardboard pieces.

3. Drop the collected mercury into a bottle having some water. Tightly cover the bottle’s lid.

4. Send the bottle containing mercury back to the stores.

Don’ts

1. Never touch the mercury with bare hands.

2. Never throw the mercury in waste bins or drain.
Mercury Spills

Breaking of thermometer
1. Hand Washing

1. Hand washing is one of the most important infection control precaution to be followed by all health care workers

2. Always wash your hands before and after any procedure, examining two patients, handling waste, eating and drinking, collecting lab samples and handling blood and body fluids

3. Routine hand washing can be done by using soap and water
2. Personal Protective Equipments

1. Always wear personal protective gears while handling waste

2. Wearing head gears, eye covers (glasses), mask, apron, gloves and boots. These constitute the barrier for transmission of infections

3. Taking immunization against Hepatitis B and Tetanus are important universal precautions
3. Use of Disinfectants

1. Store bleaching powder in dry, dark and cool places
2. The bleaching powder container should always be kept closed
3. While preparing 1% bleaching powder solution add 1 tablespoon of bleaching powder in 1 litre water
4. Stir the solution well
5. After the solution is ready, pour the solution in the waste bin meant for disinfection of used plastics and sharps
6. Always remember to prepare new bleaching powder solution every day. Only use freshly prepared bleaching powder solution each day
Use of Disinfectants

PREPARATION OF BLEACHING POWDER SOLUTION

1. BLEACH
2. BLEACHING POWDER
3. MIX 1 TABLE SPOON BLEACHING POWDER IN 1 Ltr WATER
4. STIR WELL
5. 1% BLEACHING POWDER SOLUTION
6. POUR THE DISINFECTION INTO THE BIN WITH SYRINGES

PREPARE DISINFECTANT SOLUTION EACH DAY
4. Soiled Linen Management

1. Always wear gloves while handling soiled linen
2. Fold the soiled linen in such a manner that you do not get in contact with the soiled part
3. Add disinfectant to the soiled linen before sending it to washing
4. Store washed linens in clean and sterile area
5. Cleaning Floors

1. Wear Personal protective gears like gloves and apron while cleaning the floors
2. Clean the floors regularly
3. Use hot water and soap for routine cleaning of the floors
4. Add disinfectants to water for critical care areas like operation theater, neonatal ward
5. Mop/cloth needs to be disinfected after every use
6. Sterilization of Reusable Equipments

1. Always sterilize reusable instruments like scissor, knife, forceps, etc., before reusing them
2. Wash and clean the instruments before sending them for sterilization
3. After the instruments are sterilized, handle them with sterile gloves
4. Store the sterile instruments in special areas meant for storing sterile equipments
Sterilization of Reusable Equipments

Used instruments

Sterilization of used instruments
7. Storing Medicines and Chemicals

1. Always store medicines and other chemicals like DDT in separate storing areas.
2. Never store the chemicals and the medicines together. Chemicals may leach into the medicines and be a reason of concern to the patients and the staff.
3. Never store medicines beyond the expiry date.
Storing Medicines and Chemicals
## Schedule 1

<table>
<thead>
<tr>
<th>Option</th>
<th>Waste Category</th>
<th>Treatment &amp; Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category No. 1</td>
<td><strong>Human Anatomical Waste</strong> (human tissues, organs, body parts)</td>
<td>incineration@/deep burial*</td>
</tr>
<tr>
<td>Category No. 2</td>
<td><strong>Animal Waste</strong> (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)</td>
<td>incineration@/deep burial*</td>
</tr>
<tr>
<td>Category No. 3</td>
<td><strong>Microbiology &amp; Biotechnology Waste</strong> (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)</td>
<td>local autoclaving/micro-waving/incineration@</td>
</tr>
<tr>
<td>Category No. 4</td>
<td><strong>Waste sharps</strong> (needles, syringes, scalpels, blades, glass, etc. that may cause puncture and cuts. This includes both used and unused sharps)</td>
<td>disinfection (chemical treatment@/autoclaving/micro-waving) and mutilation/shredding ##</td>
</tr>
<tr>
<td>Option</td>
<td>Waste Category</td>
<td>Treatment &amp; Disposal</td>
</tr>
<tr>
<td>-----------------</td>
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<td>-----------------------------------------------------------</td>
</tr>
<tr>
<td>Category No 5</td>
<td><strong>Discarded Medicines and Cytotoxic drugs</strong>&lt;br&gt;(wastes comprising of outdated, contaminated and discarded medicines)</td>
<td>incineration@/destruction and drugs disposal in secured landfills</td>
</tr>
<tr>
<td>Category No 6</td>
<td><strong>Solid Waste</strong>&lt;br&gt;(Items contaminated with blood, and body fluids including cotton, dressings, soiled plaster casts, lines, beddings, other material contaminated with blood)</td>
<td>incineration@&lt;br&gt;autoclaving/microwaving</td>
</tr>
<tr>
<td>Category No. 7</td>
<td><strong>Solid Waste</strong>&lt;br&gt;(wastes generated from disposable items other than the waste sharps such as tubings, catheters, intravenous sets etc.)</td>
<td>disinfection by chemical treatment@&lt;br&gt;autoclaving/microwaving and mutilation/shredding##</td>
</tr>
<tr>
<td>Category No. 8</td>
<td><strong>Liquid Waste</strong>&lt;br&gt;(waste generated from laboratory and washing, cleaning, house-keeping and disinfecting activities)</td>
<td>disinfection by chemical treatment@ and discharge into drains.</td>
</tr>
<tr>
<td>Category No. 9</td>
<td><strong>Incineration Ash</strong>&lt;br&gt;(ash from incineration of any bio-medical waste)</td>
<td>disposal in municipal landfill</td>
</tr>
<tr>
<td>Category No. 10</td>
<td><strong>Chemical Waste</strong>&lt;br&gt;(chemicals used in production of biologicals, chemicals used in disinfection, as insecticides, etc.)</td>
<td>chemical treatment@@&lt;br&gt;and discharge into drains for liquids and secured landfill for solids</td>
</tr>
</tbody>
</table>

@@ 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 2

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

**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.
Standards for Deep Burial Pit

1. A pit or trench should be dug about 2 meters 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.
Form III (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.........................................