

ENVVIS Newsletter

Biomedical Waste

Introduction

Biomedical waste consists of solids, liquids, sharps, and laboratory waste including its container and any intermediate product, which is generated during the diagnosis, treatment or immunization of human being or animals, in research pertaining there to, or in the production or testing of biological and the animal waste from slaughter houses or any other similar establishment. All biomedical waste is hazardous.

Biomedical waste differs from other types of hazardous waste, such as industrial waste, in that it comes from biological sources or is used in the diagnosis, prevention, or treatment of diseases. Common producers of biomedical waste include hospitals, health clinics, nursing homes, medical research laboratories, offices of physicians, dentists, and veterinarians, home health care, and funeral homes.



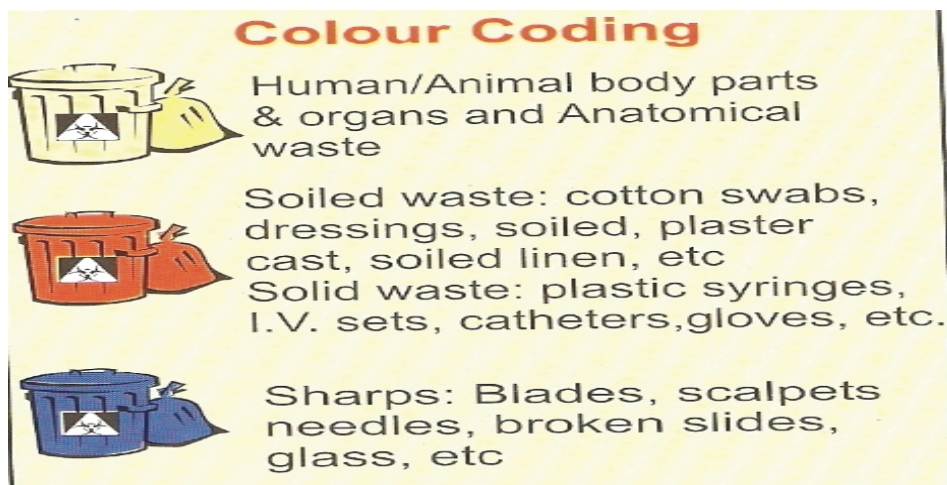
Categorization of Bio-Medical Waste

Bio-Medical Waste can be categorized into

Option	Treatment & Disposal	Waste Category
Cat. No. 1	Incineration /deep burial	Human Anatomical Waste (human tissues, organs, body parts)
Cat. No. 2	Incineration /deep burial	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)
Cat. No. 3	Local autoclaving/ micro waving/incineration	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 biological, toxins, dishes and devices used for transfer of cultures)
Cat. No. 4	Disinfections (chemical treatment/autoclaving/ micro waving and mutilation shredding	Waste Sharps (needles, syringes, scalpels blades, glass etc. etc. that may cause puncture and cuts. This includes both used & unused sharps)
Cat. No. 5	Incineration / destruction & drugs disposal in secured landfills	Discarded Medicines and Cytotoxic drugs (wastes comprising of outdated, contaminated and discarded medicines)
Cat. No. 6	Incineration , autoclaving/ micro waving	Solid Waste (Items contaminated with blood and body fluids including cotton, dressings, soiled plaster casts, line beddings, other material contaminated with blood)
Cat. No. 7	Disinfections by chemical treatment autoclaving/ micro waving& mutilation shredding.	Solid Waste (waste generated from disposable items other than the waste sharps such as tubing, catheters, intravenous sets etc.)
Cat. No. 8	Disinfections by chemical treatment and discharge into drain	Liquid Waste (waste generated from laboratory & washing, cleaning, house-keeping and disinfecting activities)
Cat. No. 9	Disposal in municipal landfill	Incineration Ash (ash from incineration of any bio-medical waste)
Cat. No. 10	Chemical treatment & discharge into drain for liquid & secured landfill for solids	Chemical Waste (chemicals used in production of biological, chemicals, used in disinfection, as insecticides, etc.)

Infectious waste is none which is capable of producing infectious disease. It is quite difficult to exactly identify infectious medical waste in bulk of waste.

COLOR CODING & TYPE OF CONTAINER FOR DISPOSAL OF BIO-MEDICAL WASTE



HANDLING AND TRANSPORTATION

Handling and Transportation activity basically has three components: collection of different kinds of waste (from waste storage bags/containers) inside the hospital, transportation and intermediate storage of segregated waste inside the premises and transportation of the waste outside the premises (to the treatment/disposal facility).

The collection containers for bio-medical waste have to be sturdy, leak proof, of adequate size and wheeled. Two wheeled bins of 120-330 litre capacity and four wheeled bins of 500-1000 litre capacity (IS 12402, Part I, 1988) may be used. Solid waste is filled in plastic bags, which should be strong, impervious and have right marking. Plastic bag should be 1.5 to 3 mm thick. It should never be overloaded. Liquid waste is stored in glass bottles. The 4 wheeled containers have two fixed wheels and two castors and they are fitted with wheel locking devices to prevent unwanted rolling. There should be sharp edges or corners, especially in metallic bins. For convenience as well as for avoiding any confusion, the colour code applicable for the bags / containers should also be used for the bins.

Transportation of Segregated Waste inside the Premises

All attempts should be made to provide separate service corridors for taking waste matter from the storage area to the collection room. Preferably these corridors should not cross the paths used by patients and visitors. The waste has to be taken to the common storage area first, from where it is to be taken to the treatment/disposal facility, either within or outside the premises as the case may be. The wheel-barrows containing general waste may be sent to a dumper container or further segregated as described under.

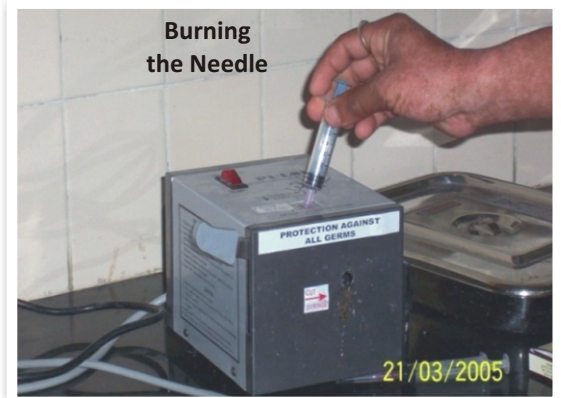


Collection and Transportation of Waste for Small Units

Smaller units, such as, nursing homes, pathological laboratories etc. do not have many departments/divisions and the generation of waste is small and normally they do not have treatment facility for the bio-medical waste.

In their case, intermediate storage area is not required. They should install a needle cutter and a small device for cutting plastic tubing, gloves etc. In case, highly infectious bio-medical waste is expected to be generated, they may consider installing a separate steam autoclave of suitable size exclusively for this purpose.

Adequate precaution must be taken to ward off any occupational hazard or environmental problem. This particular autoclave should never be used for sterilizing medical supplies or surgical equipment.



Transportation of Waste Outside

The risk of exposure during loading and unloading must be minimized. A double container is preferable. The spillage should be negligible; the container must withstand transport risk and rough handling. The vehicle, which may be a specially designed van, should have the following specifications:

- ❖ It should be covered and secured against accidental opening of door, Leakage/spillage etc.
- ❖ The interior of the container should be lined with smooth finish of Aluminum or stainless steel, without sharp edges/corners or dead spaces, which can be conveniently washed and disinfected.
- ❖ There should be adequate arrangement for drainage and collection of any run off/leachate, which may accidentally come out of the waste bags/containers. The floor should have suitable gradient, flow trap and collection container.
- ❖ The size of the van would depend on the waste to be carried per trip.
- ❖ In case, the waste quantity per trip is small, covered container of 1-2 cu. m.

WASTE TREATMENT AND DISPOSAL: The Rules and The Available Options

The 'Bio-Medical Waste (Management & Handling) Rules, 1998' has elaborately mentioned the recommended treatment and disposal options according to the 10 different categories of waste generated in health care establishments in Schedule I of the rules Standards for the treatment

technologies are given in Schedule V of the Rules, which must be complied with. A review of the above schedule would show that there is no single technology, which can take care of all categories of bio-medical waste. A judicious package has to be evolved for this purpose. For example, small and medium hospitals can opt for local (in house) disinfection, mutilation/shredding and dedicated autoclaving plus off-site incineration at a common treatment/disposal facility followed by disposal in sanitary and secured landfills.



Incineration

This is a high temperature thermal process employing combustion of the waste under controlled condition for converting them into inert material and gases. Incinerators can be oil fired or electrically powered or a combination thereof. Broadly, three types of incinerators are used for hospital waste: multiple hearth type, rotary kiln and controlled air types. All the types can have primary and secondary combustion chambers to ensure optimal combustion. These are refractory lined.

Standards for Incinerators are as follows

Operating Standards

- Combustion Efficiency shall be 99.00 %
- The combustion efficiency shall be computed as follows:

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

The temperature of primary chamber shall be 800 + 50 OC
 The secondary chamber gas residence time shall be 1 sec at 1050 + 50 OC with minimum 3% oxygen in the stack

Emission Standard

Parameter	Conc mg/nm ³ at 12% CO ₂ corr
Particulate Matter	150
NO _x	450
HCL	50

Autoclave Treatment

This is a process of steam sterilization under pressure. It is a low heat process in which steam is brought into direct contact with the waste material for duration sufficient to disinfect the material. These are also of three types: Gravity type, Pre-vacuum type and Retort type.

In the first type (Gravity type), air is evacuated with the help of gravity alone. The system operates with temperature of 121 deg. C. and steam pressure of 15 psi. for 60-90 minutes. Vacuum pumps are used to evacuate air from the Pre-vacuum autoclave system so that the time cycle is reduced to 30-60 minutes. It operates at about 132 deg. C. Retort type autoclaves are designed to handle much

larger volumes and operate at much higher steam temperature and pressure. Autoclave treatment has been recommended for microbiology and biotechnology waste, waste sharps, soiled and solid wastes Standards for Waste Autoclaving

- Temperature not less than 1210c and pressure of 15 psi (residence time 60 min)
- Temperature not less than 1350c and pressure of 31 psi (residence time 45 min)
- Temperature not less than 1490c and pressure of 52 psi (residence time 30 min)
- Each autoclave shall have graphic or computer recording device which will automatically and continuously monitor and record dates, time, operating parameters

Hydroclave Treatment

Hydroclave is innovative equipment for steam sterilization process (like autoclave). It is a double walled container, in which the steam is injected into the outer jacket to heat the inner chamber containing the waste. Moisture contained in the waste evaporates as steam and builds up the requisite steam pressure (35-36 psi). In the absence of enough moisture, additional steam is injected. The system operates at 132 deg.C. and 36 psi steam pressure for sterilization time of 20 minutes. The total time for a cycle is about 50 minutes, which includes start-up, heat-up, sterilization, venting and depressurization and dehydration.

Microwave Treatment

This again is a wet thermal disinfection technology but unlike other Thermal Treatment systems, which heat the waste externally, microwave heats the targeted material from inside out, providing a high level of disinfection. The input material is first put through a shredder. The shredded material is pushed to a treatment chamber where it is moistened with high temperature steam. The material is then carried by a screw conveyor beneath a series (normally 4-6 nos.) of conventional microwave generators, which heat the material to 95-100 deg. C. and uniformly disinfect the material during a minimum residence time of 30 minutes and total cycle is of 50 minutes. A second shredder fragments the material further into unrecognizable particles before it is automatically discharged into a conventional / general waste container. This treated material can be land filled provided adequate care is taken to complete the microwave treatment. In the modern versions, the process control is computerized for smooth and effective control.

Standards for Microwave treatment are as follows:

- o Microwaving shall not be used for cytotoxic, hazardous or radioactive waste, large metal items
- o The microwave should completely and consistently kill the bacteria and other pathogenic organisms that is ensured by approved biological indicator at maximum design capacity of each microwave unit. Biological indicators for microwave shall be Bacillus subtilis spores using vials or spores strips with at least 1×10^4 spores per mm.



Chemical Disinfecting

This treatment is recommended for waste sharps, solid and liquid wastes as well as chemical wastes. Chemical treatment involves use of at least 1% hypochlorite solution with a minimum contact period of 30 minutes or other equivalent chemical reagents such as phenolic compounds, iodine, hexachlorophene, iodine-alcohol or formaldehyde-alcohol combination etc. Preshredding of the waste is desirable for better contact with the waste material.

Sanitary and Secured Land filling

Sanitary and secured land filling is necessary under the following circumstances:

- ◆ Deep burial of human anatomical waste when the facility of proper incineration is not available (for towns having less than 5 lakh population and rural areas, according to Schedule I of the MoEF rules - Secured landfill).
- ◆ Animal waste (under similar conditions as mentioned above) - Secured landfill.
- ◆ Disposal of autoclaved/hydroclaved/micro waved waste (unrecognizable) - Sanitary landfill.
- ◆ Disposal of incineration ash - Sanitary landfill.
- ◆ Disposal of bio-medical waste till such time when proper treatment and disposal facility is in place - Secured landfill.
- ◆ Disposal of sharps - Secured landfill. This can also be done within a hospital premises

Standards for Deep Burial

- ◆ A pit or trench should be dug about 2 mt 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
- ◆ On each occasion, when waste are added to the pit, a layer of 10 cm of soil shall be added to cover the waste
- ◆ It should be lined with impermeable membrane and no shallow well should be in close vicinity
- ◆ Record of all pits to be maintained

Standards for Liquid Waste

Parameter	Permissible limit
pH	6.5-9.0
Suspended Solid	100 mg/l
BOD	30 mg/l
COD	250 mg//
Bio-assay test	90% survival of fish after 96 hrs

General Waste

The waste material generated from the office, kitchen, garden, store, chemicals counter etc., which are non-hazardous and non-toxic, may be taken care of as follows:

Composting of green waste - to be carried to a municipal facility or a private facility, if available. If suitable land is available, a hospital may consider composting its green waste within the campus itself taking all precautions regarding health and hygiene and safety to patients.

Recycling of packaging material (caution - medical supplies such as unused or scantily used disposable items or those of uncertain history should never be allowed to be recycled).

Comparison of treatment procedures for Biomedical Waste

Parameter	Sterilization	Incineration	Chemical Processing
Treatment Effect	No Change	Ashes	Shredded and Ground
Volume Change	1/3 reduced	4/5 reduced	4/3 reduced
Hazards	Low	Medium	Medium
Side benefits	None	Energy	Effluent use
Application	All	All	Most of waste
Kind of operator	Trained	Skilled	Trained person
Standardization	Necessary	Not required	Sometimes needed
Site on/off	Both	Both	Both
Kind of test	Simple	Complex	Specialized
Separation	Preferable	Not necessary	May need
Release to air	Small risk	Small Risk	Good Risks
Let off to water residue consider	Land filling	Land fill (depends)	Effluent to sewers
Cost	Low	High	Moderate
Regulation Govt.	Applicable	Record Purpose	Not Applicable



Disposal of treated Medical Waste

The treated waste is safe for disposal by any conventional method as it poses no risk but pathological waste or sharp sometimes need additional treatment. Landfill disposal and sanitary sewers are best mode of disposal. Burial in soil is best. This has universal application. Red Plastic bags which are disposal only should be used during transportation. Liquid waste can be discharged after treatment into the sanitary sewer system. It should never be disposed as landfill material.

Waste Minimization

It can be done by reducing the amount of material used, waste generated, recycling and reuse of waste if possible, reduction in volume of waste and recovery of energy from it. The source separation by generator will reduce quantum of medical waste. This is possible by using specially designed containers for infectious waste. The first act is volume and weight reduction. The dry compactness however is dangerous process if needles and scaps are involved.

Medical waste of unusual type

The antineoplastic drugs and various kind of hazardous chemical waste need a special technique of treatment. The chemical waste includes aromatic hydrocarbons, alcohols, ethers, esters and some mineral acids and corrosives bases. Some waste has multiple hazards.

Biomedical Waste Management : An Infrastructural Survey of Hospitals

Introduction

Hospital is one of the complex institutions which is frequented by people from every walk of life in the society without any distinction between age, sex, race and religion. This is over and above the normal inhabitants of hospital i.e patients and staff. All of them produce waste which is increasing in its amount and type due to advances in scientific knowledge and is creating its impact . The hospital waste, in addition to the risk for patients and personnel who handle these wastes poses a threat to public health and environment. Keeping in view inappropriate biomedical waste management, the Ministry of Environment and Forests notified the "Biomedical Waste (management and handling) Rules, 1998" in July 1998. In accordance with these Rules (Rule 4), it is the duty of every "occupier" i.e a person who has the control over the institution and or its premises, to take all steps to ensure that waste generated is handled without any adverse effect to human health and environment. The hospitals, nursing homes, clinic, dispensary, animal house, pathological lab etc., are therefore required to set in place the biological waste treatment facilities. It is however not incumbent that every institution has to have its own waste treatment facility. The rules also envisage that common facility or any other facilities can be used for waste treatment. However it is incumbent on the occupier to ensure that the waste is treated within a period of 48 hours

Classification of Medical Waste

1. Human blood and its products: It is infectious. The blood soaked bandage is hazardous, such materials must be steam sterilized before disposal.
2. Culture and Stock Agents: They have infectious microorganisms the culture must be treated before disposal.
3. Pathological Waste: It covers body tissues resulting out of surgery.
4. Contaminated Sharps: This cover injection needle, syringes, scalpel blades, disposable pipettes, capillaries, slides of microscope and broken pieces of glass.

5. Contaminated Laboratory Waste: This includes disposable appliances e.g. culture containers, swabs, pipettes, diagnostic tools and protective equipments. All such materials must be sterilized and properly treated before reuse.
6. Discarded Biological Waste: It includes vaccines, they are burnt. The production waste can be treated.
7. Contaminated Instruments and Bedding Sets: Unserviceable instrument should be handled with precautions. Gloves, masks, aprons, lab coats are nowadays disposable and immediately discarded.

Common Regional Facility For Final Disposal of Infectious BMW

Hospitals, private practitioners, emergency care centers though aware of the rules do not have the time or resources to arrange satisfactory disposal of biomedical waste. Self contained on site treatment methods may be desirable and feasible for large healthcare facilities. They will not be practical or economical for smaller institutes. An acceptable common system should be in place which will provide free supply of colour coded bags, daily collection of infectious waste, safe transportation of waste to off site treatment facility and final disposal with suitable technology.

Medical care is vital for our life, health and well-being. But the waste generated from medical activities can be hazardous, toxic and even lethal because of their high potential for disease transmission. The hazardous and toxic parts of waste from health care establishments comprising infections, bio-medical and radioactive material as well as sharps (hypodermic needles, knives, scalpels etc) constitute a grave risk, if these are not properly treated/disposed or is allowed to be mixed with municipal waste. Its propensity to encourage growth of various pathogen and vectors and its ability to contaminate other non-hazardous/non toxic municipal waste jeopardizes the efforts undertaken for overall municipal waste management. The rag pickers and waste workers are often worst affected, because unknowingly or un wittingly, they rummage through all kinds of poisonous material while trying to salvage items which they can sell for reuse. At the same time, this kind of illegal and material reuse can be extremely dangerous and even fatal. Diseases like cholera, plague, tuberculosis, hepatitis, diphtheria etc. in either epidemic or even endemic form, pose grave public health risks. Unfortunately, in the absence of reliable and extensive data, it is difficult to quantify the dimension of the problem or even the extent and variety of the risk involved.

The rules framed by Ministry of Environment and Forests (MoEF), Govt. of India, known as "Bio-medical Waste (Management and Handling) Rules 1998" notified on 20th July 1998, provides uniform guidelines and code of practice for the whole nation. It is clearly mentioned in this rules that the 'occupier' (a person who has control over the concerned institutional/premises) of an institution generating bio-medical waste (e.g. hospital, nursing homes, clinic dispensary, veterinary institution, animal house, pathological laboratory, blood bank etc) shall be responsible for taking necessary steps to ensure that such waste is handled without any adverse effect to human health and the environment.

The physico-chemical and biological nature of these components, their toxicity and potential hazard have different methods/ options for their treatment/ disposal. In Schedule I of the Bio-medical Waste (Management & Handling) Rules 1998, therefore, the Waste originating from different kinds of such establishments, has been categorized into 10 different categories as given below and their treatment and disposal options have been indicated accordingly :

Status of Disposal Facilities

Different methods have been developed for rendering bio-medical waste environmentally innocuous and aesthetically acceptable but all of them are not suitable for our condition. The

"Biomedical Waste (Management & Handling) Rules , 1998 " has elaborately mentioned the recommended treatment and disposal options according to the 10 different categories of waste generated in health care establishments in Schedule I of the rule . Standards for the treatment technologies are given in Schedule V of the Rules, which must be complied with. A comparison of the advantages and limitations of the different technologies for treatment of bio-medical waste is also maintained. A review of the above schedule in the case of Dehradun it was observed that there is no single technology, which can take care of all categories of bio medical waste. A judicious package has to be evolved for this purpose. For example, small and medium hospitals can opt for local (in house) disinfection, mutilation/shredding and dedicated autoclaving plus off-site incineration at a common treatment disposal facility followed by disposal in sanitary and secured land fill.

Quantification of Biomedical Solid Waste:

As on 31.03.2010 there 589 HCF's with 36 institutions having total 10096 beds. Out of 589 HCF's 268 are using CBWTF & 321 have their own treatment and disposal facility. Total 1872.33 kg/day waste is generated and 740.18 kg/day waste is treated. Status is summarized in table:



There is one CBWTF in Gharwhal Region namely M/s Medical Pollution Control Committee. This agency is having Incinerator, Autoclave, ETP and Deep burial. This facility is responsible for collection, transportation and treatment of waste from regions of District Dehradun, Haridwar, Pauri, Tehri etc.

Another facility is in Kuamun Regio at M/s Sushila Tiwari Forest hospital, Haldwani. This hospital has Incinerator, Microwave, Deep Burial and Shredder. This facility is responsible for collection, transportation and treatment of waste from regions of District Nainital, Udham Singh Nagar. Status of CBWTF is given in table:

Common Bio-medical Waste Treatment Facility as on March 31, 2010

S.No.	Name and Address of CBWTF	Name of cities/areas covered by CBWTF	Total no. of HCF's being covered	Treatment facilities installed at CBWTF (Incinerator/ Autoclave/Microwave Hydrclave/Shredder/ETP, etc.) and their capacities each. (in kg or litre per day)
1.	M.P.C.C. Mandawar Roorkee, Haridwar	Dehradun, Rishikesh, Roorkee, Haridwar, Vikasnagar	217	Incinerator: 100 kg/hr Autoclave: 50 kg/hr Shredder: 50 kg/hr ETP: Installed Deep Burial: Provided
2.	Govt. Sushila Tiwari Hospital Haldwani	Haldwani, Rudrapur, Kashipur	51	Incinerator: 100 kg/hr Microwave: 35kg/hr Shredder: 10 kg/hr Deep Burial: Provided

Management Plan for Biomedical Waste:

The management plan for Bio-medical waste is given under Biomedical Waste (Management & Handling) Rules 1998. This is required to be strictly monitored and implement through Awareness, Training and Regulatory Authority. This is given below:

Bio Medical Waste (Management & Handling) Rules, 1998 : The following Points of the Bio Medical Waste Rules are to be followed for Dehradun City :

Duty:

It shall be the duty of the 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 the human health and the environment.

Management of Bio-Medical Waste: Every occupier generating the bio-medical waste need to install an appropriate facility in the premises or set up a common facility to ensure requisite treatment of waste by 30.6.2000 in accordance with Schedule-I and in compliance with standards prescribed with Schedule-V

The bio medical waste need to be segregated into container/bags at the point of generation in accordance with Schedule-II, prior to its storage, transportation, treatment and disposal. The container shall be labeled according to Schedule-III.

Mandatory/Legal Requirement:

Every occupier of an institution, generating, collecting, receiving, storing, transporting, treating, disposing and/or handling bio medical waste in any other manner, shall make an application in Form-I along with the following fee structure to the Delhi Pollution Control Committee for grant of authorisation. The Form-I can be obtained after paying an amount of Rs. 100/- in the form of Draft in favour of UEPPCB. It can also be downloaded from this web site but an additional draft for Rs. 100/- in favor of DPCC may also be attached with the application at the time of submission of application.

Fee Structure

S.No.	Category	Fee (in Rupees)
1.	Clinics, pathological laboratories and blood banks	1000/- per annum
2.	Veterinary institutions, dispensaries and animal houses	1000/- per annum
3.	Hospitals, Nursing Homes and Health Care Establishments	1000/- per annum up to 4 beds and additional Rs. 100 per bed per annum from fifth bed onwards
4.	Operator of the facility of bio-medical waste (excluding transportation)	10000/- per annum
5.	Transporter of bio-medical waste	7500/- per annum



An operator of bio-medical waste facility may also engage in transportation of bio-medical waste on payment of additional fees prescribed for a transporter of bio-medical waste.

An application in Form-I appended to the aforesaid rule shall be made to the prescribed authority i.e. the Chairman, Delhi Pollution Control Committee, for grant of authorisation along with the checking of documents as given in check list, wherever applicable.

An authorisation shall be granted for a period of 3 years, including an initial trial period of one year for which a provisional authorisation will be granted. All authorisation shall be for a period of three years. Fee shall be payable for three years at a time. The above fee structure is subject to revision from time to time.

The Government's notification No. F.23(522)/95-Env/99 dated the 6th July 1999, issued in pursuance of rule 8(3) ibid shall stand superseded with immediate effect).

An operator of a facility shall make an application form in Form-I with the fee as applicable for grant of authorisation.

In addition, they shall also submit an annual report to UEPPCB in Form-II by 31st January every year to include information about the categories and quantities of bio medical wastes handled during the proceeding year and also 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 rules and guidelines issued. All records shall be subject to inspection and verification by the UEPPCB at any time.

The transporter, operator of a facility shall label the Bio-Medical strictly in accordance with the procedure given in Schedule-IV.

Penalty:

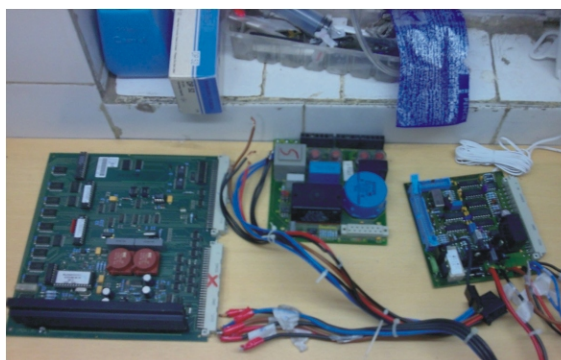
The defaulting hospitals/nursing homes etc. are liable to be penalized as per the provisions of Environment (Protection) Act, 1986 and other pollution control Acts.

Important Precautions : The following precaution should be taken while handling Biomedical waste

Never transfer sharps directly from person to person



Never recap the needles



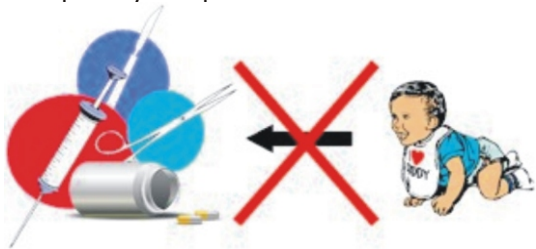
Never overload bins used for storing Bio Medical Waste



Do not inhale chemicals directly. Use always mask.



Keep away sharps medicines from children



Never transfer sharp directly



Always incinerate human anatomical waste.



General waste to be put in black container.



Display the Bio-Hazardous Symbol and the types of waste to be put in each container as per Schedule-II

