



स्वामी राम हिमालयन विश्वविद्यालय
Swami Rama Himalayan University

Policy for Bio-Medical Waste Management

Approved by the Board of Management in its 22nd Meeting held on
12th January 2019

Swami Rama Himalayan University

Swami Ram Nagar, Jolly Grant- 248 016, Dehradun, Uttarakhand

SWAMI RAMA HIMALAYAN UNIVERSITY

Policy for Bio-Medical Waste Management

1. Short Title & Commencement

- 1.1 This Policy shall be called "Policy for Bio-Medical Waste Management" of Swami Rama Himalayan University.
- 1.2 This Policy shall be deemed to have come into force from the date of approval of the Board of Management of the University.

2. PURPOSE:

All Biomedical waste shall be treated, destroyed, or disposed of as per the provisions of Bio Medical Waste (Management & Handling) Rule 2018. Being a statutory requirement, compliance is mandatory. This policy defines the instructions and methodology of Waste Management Process with an aim to

- Ensure the compliance to Statutory Requirements
- Prevent Infection to staff, patient, and attendant's objective
- Safety of the Environment

3 DEFINITIONS:

- 3.1 "Bio-medical waste" or 'BMW' means any waste, which is generated during the diagnosis, treatment or immunization of human beings or animals or research activities pertaining thereto or in the production or testing of biological or in health camps, including the categories mentioned in Schedule I appended to these rules;
- 3.2 HIV means Human immunodeficiency virus.
- 3.3 ESBL means Extended spectrum beta-lactamase.
- 3.4 VRE means Vancomycin-resistant enterococci.
- 3.5 ICD means Intercostal Drain.
- 3.6 WHO means World Health Organization
- 3.7 CPCB means Central Pollution Control Board

4. Preamble

- Hospitals are meant to ensure community health. Presently a lot of attention is being paid to the disposal of medical waste. The problem of medical waste disposal has acquired a serious proportion in urban areas of India. Infectious waste can transmit numerous diseases in the community and put those who handle waste, and live in its proximity, at risk.


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- Handling waste can be a potential health hazard (epidemic) to the public at large, especially healthcare workers, municipal employees and rag pickers. Comprehensive solutions to waste management lie solely in implementing systems of waste segregation, disinfection and treatment through the cooperation of hospital staff, and the medical personnel.
- Proper waste disposal, water treatment, disinfection, and sterilization of equipment can reduce the risk of infection among patients, health care workers and community. To minimize the spread of infection, it is important that hospitals / health caterers and the surroundings are kept clean and no waste is spilled anywhere outside or inside the hospital premises .A clean hospital has positive effects on its patients and its personnel.

5. SCOPE:

This policy applies to all types of wastes generated in the Hospital

6. RESPONSIBILITY:

Waste management supervisor/ Sanitary attendant, Nurse-in-charge, Housekeeping In-charge

7. PROCEDURE:

7.1 LEGAL COMPLIANCES (Legislation & Gazette)

The Biomedical Waste (Management and Handling rules) 2018 enacted through legislation and Gazette bind us to follow the rules and regulations of segregation, collection and disposal of the Bio medical waste, in order to;

- Prevent infection by maintaining good hygiene and sanitation.
- Protect the patient, patient attendants and all health care personnel from avoidable exposure to infection.
- Prevent environmental pollution.
- Manage waste in a clean, healthy, economical and safe manner.
- To minimize waste

7.2 Process Summary


Sl. No.	Activity	Responsibility
1.0	Types of waste generated	
1.1	All general and biomedical waste from the hospital is handled as per the protocols set by the Biomedical waste management rules (modified in 2018), Ministry of Environment and Forests.	Asst. Nursing Supervisor

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1.2	<p>General Waste</p> <ol style="list-style-type: none"> 1. Paper 2. Cardboard and packing materials 3. Aluminum Foil 4. Teabags 5. Disposable plates, glasses, bottles 6. Used polythene bags 7. Vegetable, fruit peels and left over food 	
1.3	<p>Bio Medical Waste</p> <ol style="list-style-type: none"> 1. Soiled cotton, dressings, bandages, plaster casts, amputated body parts, pathological specimens, pathology laboratory waste, microbiology laboratory waste 2. Plastics, disposable syringes, tubing's, catheters and bags 3. Sharps consisting of needles, blades, broken vials, ampoules, thermometers 4. Blood bags tested positive for HIV and Hepatitis B, C, VDRL &MP 5. Human parts, fetus, placenta, etc. 	
2.	<p>Operational guidelines</p>	
2.1	An operational and maintenance protocol is drawn up and filed as guidelines / requirement for day-to-day operations; also the exact description of methodology practiced under each activity such as segregation, internal and external transportation, pre-treatment, storage, post treatment and final disposal	Asst. Nursing Supervisor
2.2	The different levels of waste disposal at all levels of processes, and hospital areas are identified and responsibilities are assigned – as an organizational structure from management, supervision / monitoring, collection, treatment and disposal.	Asst. Nursing Supervisor
2.3	Daily collection loads by category, treatment and disposal data records maintained	Waste management supervisor
3.	<p>Segregation of Waste</p>	
3.1	Black bags are segregated as per classification above for general waste	


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3.2	Bio Medical Waste is segregated as 1. Red bags for infected and non-infected plastic disposable waste 2. Yellow bags for incinerable waste. The Red and Yellow bags have the Biohazard Emblem printed on them. All trolleys used for collecting and transporting BMWs have the Bio-hazard symbols on them and are adequately covered.	Sanitary attendant
4.	Collection of Waste	
4.1	A specific allotted area of the ward – the same place in each ward identified as waste disposal corner – but easily identified and accessible by nursing and sanitary staff	Nurse-in-charge / sanitary attendant
4.2	The general waste is collected from wards and transported to the garbage collection bin in every shift i.e. three times a day – All waste handlers wear thick impervious gloves and immunized for Hepatitis B	Sanitary attendant
4.3	Two rounds are made per shift - one for collecting incinerable waste and second for plastic (disinfected) waste and sharps.	Sanitary attendant
4.4	The BMW is collected and transported in a covered garbage trolley, displaying the Bio-Hazard Symbol.	Sanitary attendant
4.5	A duty roster is made monthly for general and biomedical waste collection	Housekeeper manager
4.6	Daily time table and roster drawn up and signed at the end of every shift to indicate each category of waste collected	Waste disposal supervisor / sanitary attendant
4.7	Daily weighing of bio medical waste generated from each area and keeping record of it.	Waste disposal supervisor / sanitary attendant
5.	Treatment of Waste	
5.1	Biomedical waste is segregated at the point of generation. Needles and syringes are being autoclaved and shredded in the shredder provided at the bio medical waste site.	Asst. Nursing Supervisor/ Sanitary attendant


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5.2	Only Plastic waste of HIV, Hepatitis B&C, (cut manually into 2-3 pieces), and sharps are disinfected by chemical disinfection in 1% Sodium Hypochlorite Solution in each ward in specific labeled chemical containers with biohazard symbols. The solution is changed as per Biomedical waste management rules.	Ward nurse / sanitary attendant
5.3	Microbiology and biotechnology (laboratory) waste is discarded in the Red bags	Sanitary attendant in lab
5.4	Liquid waste from laboratories is treated chemically before being let into the common municipal drains	Sanitary attendant in lab
6.	Disposal of Waste	
6.1	All incinerable waste is accumulated in a central garbage repository. This is picked up by the Medical Pollution Control Committee, an approved (external agency) every day except Sundays.	Sanitary attendant / Waste treatment facility personnel
6.2	Disposal of sharps – Needles are discarded <i>immediately after use, in puncture proof containers and collected by the sanitary attendant and handed over to the waste site. Autoclaving done and shredding done and handed over to the agency for disposal.</i>	Asst. Nursing Supervisor /Sanitary attendant
6.3	Leftover food is disposed of as feed for pigs.	
6.4	All general waste in black bags is carried away by the authorized contractors.	Sanitary attendant / municipal workers
6.5	All categories of waste are weighed each day and noted. This is common practice as weight limits are present for autoclave, etc. – to keep a record of and monitor different categories and total biomedical waste by the hospital.	Sanitary worker / Asst. Nursing Supervisor
7.	Emergency response plan	
	The emergency can include Needle prick , cut, or injury to the handler An accidental spill of biomedical waste inside or outside the hospital building There should be an emergency response protocol to handle each of these incidents adequately and quickly.	Medical superintendent / Asst. Nursing Supervisor


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8.	Monitoring of Waste Management	
8.1	Hospital Infection Control Committee (The committee meets monthly and streamlines issues related to waste management.)	HIC Chairperson
8.2	Bi-weekly inspection of waste flow from wards to the Central waste repository is inspected and defaults noted.	Asst. Nursing Supervisor/ Nurse manager
8.3	At least a monthly inspection of the waste management process all over the hospital needs to be inspected by the committee	Committee
8.4	Report Generation & Submission to Regulatory Authority - A report of compliance to regulatory requirements are taken and submitted annually to Government by 31ST January in format placed at Exhibit –II	Medical Superintendent
9.	Biomedical waste management training for 'good practices'	
	Waste management training of all categories of staff of all departments handling biomedical waste, adequate treatment, and disposal, is necessary at least one in six months	Medical Superintendent / Nursing Superintendent/ HICC/ Sanitary Supervisor
9.1	Records Generated Waste Management daily operations and maintenance protocol Monthly duty roster Waste Management Record including – Categories and amount of daily waste – Daily comments by waste supervisor – Bi weekly process inspection record – Monthly committee inspection record – Noting defaults – Noting incidents	
9.2	Other Associated processes Infection control process	


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8. Classification:

Categorization and classification of waste is important for the purpose of safe waste disposal. At Hospital, the waste generated has been broadly classified into the following categories:

8.1 Non – Infectious Waste

- 8.1.1 General office waste comprising wrapping paper, office paper, cartons packaging materials including plastic sheets, newspapers & bouquets.
- 8.1.2 Kitchen waste includes left over food, peels & dirty water generated from the hospital kitchen waste is further divided into two categories:
- Biodegradable waste. This waste includes peels of fruit and vegetable skins, leftover food, tea dregs & other natural kitchen waste.
 - General Waste as wrapping paper, aluminum foils and disposables

8.2 Infectious Waste


The Schedule for Biomedical waste handling Rules 2018 divides the biomedical waste into the following categories along with their segregation, collection, treatment, processing and disposal options.

TYPE OF WASTE	TYPE OF BAG OR CONTAINER TO BE USED	TREATMENT AND DISPOSAL OPTION
a) <u>Human Anatomical Waste:</u> Human tissues, organs, body parts and fetus below the viability period (as per the Medical Termination of Pregnancy Act 1971, amended from time to time)	Yellow colored non-chlorinated plastic bags	Incineration or Plasma Pyrolysis or deep burial*
b) <u>Animal Anatomical Waste:</u> Experimental animal carcasses, body parts, organs, tissues, including the waste generated from animals used in experiments or testing in veterinary hospitals or colleges or animal Houses.		
c) <u>Soiled Waste:</u> Items contaminated with blood, body fluids like dressings, plaster casts, cotton		Incineration or Plasma Pyrolysis or deep burial*

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<p>swabs and bags containing residual or discarded blood and blood components. Used caps and face masks should be discarded in a yellow bin.</p>		<p>In absence of above facilities, autoclaving or micro-waving/hydroclaving followed by shredding or mutilation or combination of sterilization and shredding. Treated waste to be sent for energy recovery.</p>
<p>d) (d) Expired or Discarded Medicines: Pharmaceutical waste like antibiotics, cytotoxic drugs including all items contaminated with cytotoxic drugs along with glass or plastic ampoules, vials etc.</p>	<p>Yellow colored non-chlorinated plastic bags or containers</p>	<p>Expired cytotoxic drugs and items contaminated with cytotoxic drugs to be returned back to the manufacturer or supplier for incineration at temperature >1200 0C or to common bio-medical waste treatment facility or hazardous waste treatment, storage and disposal facility for incineration at >12000C Or Encapsulation or Plasma Pyrolysis at >1200 0C. All other discarded medicines shall be either sent back to manufacturer or disposed by incineration.</p>
<p>e) Chemical Waste: Chemicals used in production of biological and used or discarded disinfectants.</p>	<p>Yellow colored containers or non-chlorinated plastic bags</p>	<p>Disposed of by incineration or Plasma pyrolysis or Encapsulation in hazardous waste treatment, storage and disposal facility.</p>
<p>f) Chemical Liquid Waste: Liquid waste generated due to use of chemicals in production of biological and used or discarded disinfectants, Silver X-ray film developing liquid, discarded Formalin, infected secretions, aspirated body fluids, liquid from laboratories and floor washings, cleaning, house-keeping and disinfecting activities etc.</p>	<p>Separate collection system leading to effluent treatment system</p>	<p>After resource recovery, the chemical liquid waste shall be pretreated before mixing with other wastewater. The combined discharge shall conform to the discharge norms given in Schedule- III.</p>


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<p>g) Discarded linen, mattresses, beddings contaminated with blood or body fluid.</p> <ul style="list-style-type: none"> • Shoe cover made of clothes; soiled or non- soiled, discarded apron made of clothes. 	<p>Non-chlorinated yellow plastic bags or suitable packing material</p>	<p>Non- chlorinated chemical disinfection followed by incineration or plasma pyrolysis or for energy recovery.</p> <p>In absence of above facilities, shredding or mutilation or Combination of sterilization and shredding. Treated waste to be sent for energy recovery or incineration or Plasma Pyrolysis.</p>
<p>h) Microbiology, Biotechnology and other</p> <p>i) clinical laboratory waste: Blood bags, Laboratory cultures, stocks or specimens of microorganisms, live or attenuated vaccines, human and animal cell cultures used in research, industrial laboratories, production of biological, residual toxins, dishes and devices used for cultures.</p>	<p>Autoclave safe plastic bags or containers</p>	<p>Pre-treat to sterilize with no chlorinated chemicals on-site as per National AIDS Control Organization or World Health Organization guidelines thereafter for Incineration.</p>
<p>Contaminated Waste (Recyclable)</p> <p>(a) Wastes generated from disposable items such as tubing, bottles, intravenous tubes and sets, catheters, urine bags, syringes (without needles and fixed needle syringes) and vacutainers with their needles cut) and gloves.</p> <p>(b) Plastic culture bottles and petri dish</p> <p>(c) Plastic shoe cover.</p> <p>(d) Plastic apron soiled or Non- soiled</p> <p>(e) ECG electric road</p>	<p>Red coloured non-Chlorinated plastic bags or containers</p>	<p>Autoclaving or micro-waving/ hydroclaving followed by shredding or mutilation or combination of sterilization and shredding. Treated waste to be sent to registered or authorized recyclers or for energy recovery or plastics to diesel or fuel oil or for road Making, whichever is possible. Plastic waste</p>
<p>Waste sharps including Metals: Needles, syringes with fixed needles, needles from needle tip cutter or burner, scalpels, blades, or any other contaminated sharp object that may cause puncture and cuts. This includes both used, discarded and contaminated metal sharps</p>	<p>Puncture proof, Leak proof, tamper proof containers</p>	<p>Autoclaving or Dry Heat Sterilization followed by shredding or mutilation or encapsulation in metal container or cement concrete; combination of shredding cum autoclaving; and sent for final disposal to iron foundries (having consent to operate from the State Pollution Control boards or</p>

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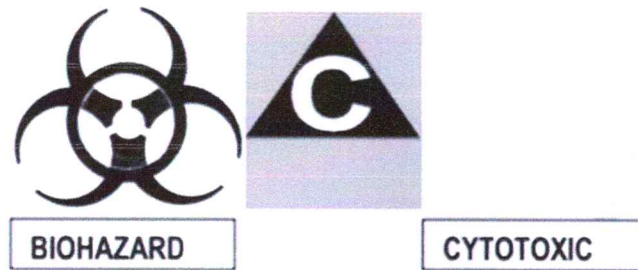
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		Pollution Control Committees) or sanitary landfill or designated concrete waste sharp pit.
a) Glassware: Broken or discarded and contaminated glass including medicine vials and ampoules except those contaminated with cytotoxic wastes.	Cardboard boxes with blue colored marking	Disinfection (by soaking the washed glass waste after cleaning with detergent and Sodium Hypochlorite treatment) or through autoclaving or microwaving or hydroclaving and then sent for recycling.
(b) Metallic Body Implants	Cardboard boxes with blue colored marking	
(c) Black	General waste office generated waste, disposable ,cups, plates, glass, wrapping plastic papers and empty water bottle, card boards ,newspapers	Sent to Local municipal corporation

Random inspection of outsourced biomedical waste treatment facility (Medical Pollution Control Committee (MPCC) at Bhagwanpur, Haridwar , Uttarakhand shall be carried out at least once in six months.

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8.2.1 Label for Bio-Medical Waste Containers/Bags



8.2.2 Sources of Waste in the Hospital

- Emergency Department
- Pharmacy
- Laboratory Department
- Day Care
- Operation Theatre
- Minor OT
- Dialysis Department
- Radiology Department
- Kitchen.
- OPD waiting areas
- OPD Consultation Rooms
- OPD Treatment Rooms
- Nursing Stations
- Blood bank
- Wards- ICU, General wards, Neonatal ICU, Pediatric ICU, Obs & Gynae, Labour Rooms etc

8.2.3 Segregation of Waste

- Segregation shall be carried out at the point of generation itself to keep general wastes away from becoming infectious.
- For this different color-coded bins shall be placed at all the areas of generation of waste
- The bins should be labeled (according to the waste) and lined with plastic bags (non-chlorinated/ puncture proof) with colors matching that of the bins as per recommendations.

8.2.4 Procedure of Segregation in Inpatient Area

- The inpatients departments generate all types of waste, which has to be segregated at the point of generation itself for an effective waste management practice in the hospital. Therefore, bins for both Infectious and non-infectious wastes are placed in all the wards.

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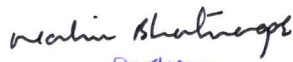
- The bedside of each patient shall have a bin meant for carrying only non-infectious waste like fruit peels, papers etc., unless the patient is classified as infectious.
- Bins for the infectious wastes shall be kept in a specific location (for example the nursing station) so that it is easy to carry them to the patient where the dressing is being done or the soiled dressings generated from the patients be carried to the infectious waste bin in a tray from the point of generation.

8.2.5 Procedure of segregation on Intensive care Unit

- Patients of Intensive Care units (ICU) are in a critical state and require support of vital functions until the disease process is arrested. Such patients are likely to have poor resistance to infection and are often unable to do things on their own and have full time nursing attendants.
- To prevent the spreading of infection further it shall be ensured that the waste generated in the ICU is not contained near the patients. The bins for infectious and non-infectious waste shall be located near the nurses' duty room in the ICU to prevent the spread of infection amongst the patients.
- The IV tubing and catheters and used syringes shall be kept separately in a container from where they can be disinfected chemically before their final disposal.
- All the sharps and glass ampoules shall also be placed in a blue color bin. The syringes and the needles should be discarded in a puncture proof container.
- All these bins shall be cleaned after every shift or the moment these bins become 3/4th full. The number of bins should be distinct, and their numbers and size should be proportional to the density of the wards and the medical procedures in the ward.

8.2.6 Procedure of Segregation in Operation Theatre

- The waste management strategy for the O.T. shall be designed in such a way so as not to impede an operation but to ensure that the waste reaches the main bin after being decontaminated and disposables properly disinfected and destroyed.
- As in all other areas, the waste disposal program shall be initiated after meetings with the staff. Management strategies based on these meetings shall be formulated so that the O. T staff can work smoothly without feeling any extra burden. Bins for infectious waste shall be lined with yellow bags and these bins will contain contaminated swabs, soiled bandages and amputated body parts.
- The bags with waste shall be sealed and stored outside the O.T to prevent liberation of bacteria during handling.
- Used instruments and sharps shall be
 - Counted after surgery
 - Washed under running tap water
 - Placed in a tray, sealed in bags and sent for autoclaving


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- A separate container for IV sets, tubing's catheters, gloves and syringes shall be provided in the O.T. After shredding these disposables shall be treated with a chemical disinfectant for at least an hour and then sent for their final disposal. As lots of medical kits are opened prior to the operation there is a lot of general waste generated. Hence a bin for general waste is kept in the O.T. in which all the packaging material shall be collected. In the changing room contaminated laundry shall be placed in the laundry bag which shall be sealed in waterproof bags and sent to the laundry for cleaning.

8.2.7 Procedure of segregation in Out Patient Department

- The OPD may also include a casualty/emergency ward. Each room in the OPD should have three bins. The bins are for the infectious waste which includes soiled bandages. The other bin is for general waste and the third bin for the disposable items and used gloves which can be mutilated and disinfected at regular intervals by a nursing-aid attendant.
- The used needles and syringes should be placed separately and destroyed by the needle cutter/destroyer, which is to be provided in each ward and department.
- The casualty should have bins for infectious waste, general waste and plastic waste. The number of bins for the infectious waste will depend on the number of beds in the room.
- Preferably each bed should have these bins. Bins for plastic waste and general waste should also be installed in each emergency. The plastic waste should be mutilated and chemically disinfected. There should be a tray for needles and other sharps. While treating a patient in the emergency the hospital staff should always wear protective clothing and gloves as the patient could be a carrier of any infectious disease.
- The waste disposal scheme in this area is as follows:
 - Segregation of the waste into different categories
 - Provide specific collection and disinfection systems for each type of waste generated.
 - There should be distinct containers for different types of waste
 - The design of containers should depend on the type of waste and disinfection method
 - The number of bins should be proportional to the waste generated in the casualty.


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9. Transportation of Waste

All waste containers shall be tied when they are 3/4th full Procedure – On Site Transport of Waste

- Segregated wastes have to be transported within the facility from the point of generation to the final waste disposal site. All bags should be fastened, small trolleys can be used or the bin themselves be carried. Care must be taken to avoid spills. Non-infectious waste should not be transported with infectious waste.

9.1 Guidelines for Transport of Waste

- When waste is collected, from a particular area, it will be wheeled downstairs to the basement where it will be weighed and transferred to the appropriate colored bin in the waste holding room. This will be done each shift.
- A large plastic bag will be used to line the wheel-able bin to prevent any liquid leaks from the waste bags from soiling the bin.
- This plastic bag is to be replaced each shift.
- The wheel-able bin will be cleaned and disinfected with Sodium hypochlorite solution once in 24 hrs. This will keep the bin sterile and odorless.
- While transferring waste to storage bins in the basement, housekeeping staff will wear a protective mask, heavy duty gloves, and rubber boots.

9.2 Storage of Waste

- Blue, Red, Yellow and Black waste will be held in the bins kept permanently in the waste holding room. Sufficient no. of bins will be kept to store waste for a period of 48 hrs.
- Kitchen waste will be placed in designated bins and will be stored for a maximum of 24 hrs.
- All plastic bags are to be tied securely and the lid of the bin is to be firmly shut.

9.3 Handling of Waste

Infectious Waste:

Infectious waste has to be kept separately in bins with lid and lined with **Yellow Colored** polythene bags wherever needed. The following special precautions are to be adopted with respect to infectious wastes:

- Proper labeling of waste containers minimize confusion in handling and disposal of waste.
- Under no circumstances should the infectious waste be mixed with the non-infectious waste.
- The bag lining the bin should be only 3/4th full to ensure that the waste does not spilt out.
- While carrying the bag containing infectious waste it has to be seated /tied.


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- The bags containing infectious waste should be collected at the centralized infectious waste bin located near the incinerator and disposed of by incineration.

9.4 Procedure for handling disposal Items

- Disposable items include single use products i.e. syringes, IV bottles, catheters, rubber gloves and. sharps, (sharps have to. be treated separately).
- As such items are often recycled and have the risk of being reused illegally, it is imperative that chemical disinfection be followed to minimize the risk of infected / contaminated disposal items prior to collection / segregation. The following on site disinfection procedure should be followed prior to their collection segregation.
- The disposables of HIV, Hepatitis B&C, and ESBL + ve, VRE + ve patients are dipped for a minimum duration of 1 1/2 to 2 hours in the chemical disinfectant solution of 1% NAOCL (Sodium Hypochlorite). Bins that are used for chemical disinfection are a set of twin bins, one inside the other, with the inner one being perforated and easily extractable.
- This helps ensure that the bleach solution in the outside bin permeates the inner bin containing the disposable items and minimizes contact when the contents are being removed.
- Disposable items like the gloves, syringes, IV bottles, catheters ICD's etc has to be shredded, cut or mutilated. This ensures that they are not reused under any circumstance. The fingers of the used gloves should be cut, and the same should be done for other disposable items.
- Extreme care should be taken while handling the needles and syringes, since most injuries occur between the point of use and disposal. Blood bags /sharps should be handled with proper protection.
- Once the disposable items have been snipped they have to be dipped in an effective chemical disinfectant for a sufficient time.

9.4.1 Precautions to be adopted for disposal of disposables

The following precautions/safeguards are to be adopted:

- Only disposable items of HIV, Hepatitis B&C, and ESBL + ve, VRE + ve patients are dipped for a minimum duration of 1 1/2 to 2 hours in the chemical disinfectant solution of 1% NAOCL after mutilation prior to disposable.
- Syringes & sharps should be handled with extreme care.
- The concentration of the bleach solution has to be 10 gms of bleach in 1 liter of water.
- The disposable items must be dipped in the bleach for at least. half an hour to ensure proper disinfection.
- The bleach solution has to be changed after each shift.
- Ensure that the syringe barrel is separated from its plunger before disinfecting it.

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9.4.2 Procedure – On Site Chemical Disinfection

- Chemical disinfection has a wide application and ensures disinfection for certain categories of wastes, such as disposables etc. and can be a cheap way of treating medical waste.
- A good disinfectant is bleach. For chemically treating the waste an optimum concentration of bleach has to be prepared. The concentration prescribed by the World Health Organization (WHO) is 10 gms of bleach in 1 liter of water.
- It must be cautioned that medical wastes that have been chemically disinfected should continue to be treated as hazardous. unless careful bacteriological testing has shown disinfection to be complete.
- The bleach solution should be prepared at the beginning of the shift. At the end of the shift or after the bin is full and the waste has been treated with the chemical disinfectant, it has to be disposed of. The waste should be collected in plastic bags from all the wards and other stations of the hospital to the final disposal site. The concerned personnel shall collect this at specific intervals.

9.4.3 Procedure – Disposal of Sharps

Handling of sharps is extremely difficult Sharps are responsible for a majority of injuries Sharps need separate attention from other disposables in a waste management scheme.

What Are Sharps?

- As defined by Central Pollution Control Board (CPCB) guidelines sharps consist of needles, syringes scalpels blades glass etc that are capable of causing puncture & cuts

Types of sharps

- The most commonly used sharps include single use hypodermic needles, syringes pasteur pipettes scalpel blades, blood vials test tube needles with attached tubing and culture dishes.
- Other types are broken or unbroken glass ware that was in contact with infectious agents, such as used slides and cover slips. The major percentage of the sharps include needles and syringes.
- The prime area of sharp generation is in the operation theater which contributes to a major portion of the sharps generated in the hospital The OT's generate a whole lot of blades, lancets, scalpels along with the needles. The other areas of the hospital are the wards, OPD's and laboratories which mainly generate needles and syringes.

Dangers Associated with Sharps

- The main danger of sharps is their inherent ability to cause puncture wounds and lacerations

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- Once sharps mix with municipal waste, rag pickers collect and resell them, endangering not only themselves, but also all those who trade in them and buy them.
- Body fluid carrying diseases have an increased possibility of being transmitted through injuries caused by these sharps to all those handling them, including hospital employees.

Procedure – Sharp Collection & Disposal

- It is important that sharps, be handled with special care to avoid needle stick injuries
- While handling sharps, gloves must always be put on by the handler
- Segregate sharps from the rest of the waste at the point of generation.
- Clipping, bending or breaking of needles to make them non usable must not be practiced as this may cause accidental inoculation.
- Used needles and syringes generated should be discarded in a puncture proof container and sterilized and shredded.
- Syringes and sharps must be autoclaved before final disposal/shredding.
- Place the sharps in a puncture proof container, which must be conspicuously labeled by the universal biohazard symbol.

Precaution in Handling Sharps

As most injuries are caused by sharps, their proper handling need not be over emphasized

- All the employees working inside the hospital must be vaccinated against Hepatitis B
- All the workers should put on gloves while dealing with infectious waste, especially sharps.
- Sharps should not be left casually on countertops, food trays, on beds as grievous injuries can result
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9.4.4 Safe Disposal of Waste

Waste will be handed over to the Waste Treating Unit in the following manner:

- All waste held in the storage bins will be wheeled up to the garbage truck itself. This will be done by the hospital's housekeeping staff.
- Waste plastic bags, whether Red, Blue, Yellow or Black will not be opened in the collecting truck but will be stored and transported out of the hospital premises directly.
- The contractors' garbage handlers will wear heavy duty gloves, masks, and rubber boots while transferring waste from the hospital's bins to the truck.
- Transfer of waste to the truck will be overseen by security.
- Asst. Nursing Supervisor will maintain a logbook which will document the date, and weight of the waste collected by the contractor.
- Waste will be disposed of every 48 hrs.

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REFERENCES:

- NABH Standard 5th Edition
- BMW handling rules 2018

RECORDS AND FORMATS:

- BMW maintaining logbooks

The University reserves the right to interpret, alter, amend, modify, cancel or withdraw any provision mentioned herein above in this Policy without any notice. However, the University shall adhere to the rules of the regulatory bodies governing bio medical waste management.

Notwithstanding anything stated in this Policy, for any unforeseen issues arising, and not covered by this Policy, or in the event of differences of interpretation, the Vice-Chancellor may take a decision and the decision of the Vice-Chancellor shall be final and binding.


Registrar
Swami Rama Himalayan University