SAFETY MANUAL

Saideep Healthcare & Research Pvt Ltd

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, Maharashtra 414003

Issue No: 01

Issue Date:

Copy No:

Holder's Name:

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REVISION HISTORY

Issue No.	Effective date	Revision Details

AMENDMENT SHEET

Amend No.	Page No.	Section/Clause No./ Para / line (as Applicable)	Date of Amendment	Amendment made	Reasons for amendment	Sign of Q. Mgr.

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1. UNIVERSAL PRECAUTIONS IN THE LABORATORY:

Definition: "Universal precaution" is defined as an approach to infection control where all humanblood and body fluids are treated as if known to be infectious for Blood borne pathogens. Specimensthat entail "universal precautions" are all excretions, secretions, blood, body fluid, and any drainage.Laboratory personnel should protect themselves from contact with these specimens by usingthe appropriate barrier precautions to prevent cross-transmission and exposure of their skin andmucous membranes, especially the eyes, nose, and mouth.

- Do not eat, drink or smoke in the laboratory.
- The laboratory should consider all the samples as infectious.
- Hands to be thoroughly washed after touching the patients.
- Gloves are to be used while handling blood, body fluids and pathological specimens of the patients.
- Needle stick injury or any injuries with other sharp instruments are to be prevented. It is done in thefollowing way:
  i. Do not bend or recap the needles. Do not leave sharps on the collection trays or tables. Use acontainer to carry needles, syringes and other sharp instruments and items.
  ii. Dispose all the sharps in puncture proof containers and ensure safe disposal.
- Avoid the spillage of blood and body fluids. If it occurs immediately flood the
- Spillage with sodium hypochlorite (1%) refer Spillage Policy Instructions(WI/SPIL/TS/P/02).
- Never pipette by mouth and never blow out pipettes that contain infectious material or other liquids.
- Mask,eye protecting glasses and gowns must be used if the splashes of blood or body fluids areexpected from the patients.

- All employees must be injected for HBV vaccinations.
- Clean all the furniture, bed and other articles belonging to patient with disinfectant.
- Garbage must be disposed in proper color coded bags.
- After any procedurewash the hands, dispose off the used gloves & infected waste in proper color coded bags.

2 BIOLOGICAL WASTE MANAGEMENT:

2.1.A. Definition:'Bio-medical waste' means any solid and/or liquid waste includingits container and any intermediate product, which is generated during thediagnosis, treatment or immunization of human beings or animals or in researchpertaining thereto or in the production or testing thereof .The rules framed by the Ministry of Environment and Forests (MoEF),Govt. of India, known as 'Bio-medical Waste (Management and Handling) Rules, 2016,' notified on 28th March 2016, provides uniform guidelines and code of practice for the whole nation.

2.3 Table: Categories of biomedical waste

OPTIONS/color code	WASTE CATEGORY	TREATMENT & DISPOSAL
CAT.1 **Yellow bag**	Human anatomical waste (human tissues, organ, body parts)	Incineration / deep burial
CAT.2 **Yellow bag**	Animal waste (animal tissues, organ, body parts carcasses, bleeding parts, fluid , blood and experimental animals used in research, waste generated by veterinary hospital colleges, discharges from hospital , animal houses)	Incineration / deep burial

CAT.3 **Yellow bag**	Microbiology and biotechnology waste (waste from Local autoclaving/laboratory cultures, stocks or specimen of microorganisms live or attenuated vaccines, human and animal cell culture used in research and infectious agents from research and industrial laboratories, waste from production of biological ,toxins dishes and devices used for transfer of cultures)	microwaving/ incineration
CAT.4 **White** **Puncture proof, Leak proof, tamper proof containers**	Waste sharps (needles, syringes, scalpel, blades, glass etc. that may cause puncture and cuts. This includes both used and unused sharps)	Disinfection (chemical treatment / autoclaving/ microwaving and mutilation/shredding)
CAT.5 **Yellow bag**	Discarded medicines and cytotoxic drugs (wastes comprising of outdated, contaminated and discarded medicines)	Incineration / destruction and drugs disposal in secured landfills
CAT.6 **Yellow bag**	Soiled waste (items contaminated with blood, body fluids including cotton, dressing, soiled) plaster casts. Lines, beddings, other material contaminated with blood	Local autoclaving/ microwaving/ incineration
CAT.7 **Red bag**	Solid waste (waste generated from disposable items other than the wastesharps such as tubings, catheters, intravenous sets etc.)	Disinfection(chemical treatment/ autoclaving/microwavingand mutilation/ shredding)
CAT.9	Incineration ash (ash from incineration of	Disposal in municipal landfill

	any biomedical waste)	
CAT.10 **Yellow bag**	Chemical waste (chemical used in production of biologicals, chemicals used in disinfection, as insecticides etc.)	Chemical treatment and discharge into drains for liquidsand secured landfill for solids

2.4 Handling Biomedical Waste In The Lab:

A. All wastes are collected in colored plastic disposable bags as follows:
   i. Non infectious waste e.g. paper, plastic, boxes cardboard is collected in BLACK disposal bags.
   ii. Infectious wastes are divided into sharps & non-sharps.
   iii. Sharps e.g. burnt needles, scalp veins; surgical blades etc in special puncture proof containers.
   iv. Non sharps absorbent material e.g. gauze pieces, bandages, cotton swabs, etc in yellow bag.
   v. Non-absorbent contaminated material e.g. plastic pipette tips, Plastic syringes & gloves are disposed into RED disposal bags.

B. The liquid waste is treated with 1% hypochlorite solution for 30 minutes (minimum) the liquid is emptied in the drainage.

2.5 Handling Spills: Ensure proper PPE is used.

i. Cover the spill with absorbent material. Do not let it spread.
ii. Pour 1% hypochlorite solution.
iii. Let it remain for 20-30 min.
iv. Remove the absorbent material with gloved hands and discard in yellow bag.
v. Clean the area with a mop soaked in disinfectant.
vi. Wash the mop in running tap water and dry it.

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1.6 SOP Of Disposal Of Waste Generated At Phlebotomy:

- While handling contaminated material put on gloves.
- The needles used for blood collection should be burnt in "needle & syringe cutter and burner". The remains of the cut needle fall into the collecting box of the "cutter".
- Do not recap the remaining portion and discard into needle collection box.
- Break the syringe tip in the cutter.
- Discard the used syringes after cutting the nozzle into RED BAG.
- The laboratory staff is made aware of "universal precautions" while handling contaminated material.

- The RED BAGS are collected by Municipal Corporation.
- The used contaminated swabs should be discarded in theRED bags.
- The left over portions of the needles are collected in different plastic or card board box& are also placed in the RED bag.
- The bags are delivered to municipal collection vehicles.
- The paper cover of the syringes is discarded in general dry waste container with a black bag.

2. <u>Maintaining Environmental Conditions</u>:

- The laboratory provides adequate lighting & air-conditioned environment in order to facilitateoptimum performance of personnel & equipment.
- The room temperature is monitored, controlled & recorded twice a day of all the departments to have a check on environment conditions which does not invalidate the results or affect the quality of results or affect the comfort of patients. The acceptable range for room temperature is 20-30º C and humidity
- Refrigerator temperature is also recorded daily to have a check on storage condition of the materials (reagents) which would otherwise affect the stability of reagent (result). The acceptable range is 2-8º C. For deep freezer range is -10 to -30º C. (in which lyophilized controls/calibrators are preserved).

- The record of these environmental conditions is maintained by the technician/phlebotomist. If temperature or count is not within the acceptable range, it is brought to the notice of Quality manager / Lab Director. Accordingly corrective action is been taken.

- Dust & humidity control is taken care by air-conditioned environment.

- Closed glass doors are provided in processing area to avoid sound & vibration levels

- Entry of unauthorized persons into sampling and testing areas is prohibited to safeguard samples as well as other material, which may affect the quality of the examination.

- Regular housekeeping procedures are carried out and record of cleaning maintained.

3. WORK SPACE CLEANING:

- The work space/table tops is cleaned with disinfectant (1% hypochlorite) and/or detergent.

- The external surface of equipment is also cleaned with the Hypochlorite/isopropyl alcohol.

- Fixed furniture is dusted & wiped on a daily basis.

- The area, including the work surface should be cleaned and disinfected after every spill.

- The cleaning and disinfecting is done every time when finds it necessary.

4. SAFETY PRECAUTIONS TO AVOID ADVERSE INCIDENTS:

6.1 Protocol For Accident Handling:

- If an accident takes place in the laboratory first the victim should be taken care of.

- The accident should be recorded either by the Quality Manager and brought to the notice of the Director.

- The causes of the accident should be investigated into by the director.

- Once the cause is ascertained, remedial action can be recommended to eliminate or minimize such events.

6.2 Electrical Safety Precautions:

- Never overload circuits.

- Power strips with their own fuses or circuit breakers may be used where multiple outlets are needed.

- Never use extension cords. If one is needed on a temporary basis, the cord must be less than 12 feet in length, approved, and have only one outlet at the end.

- Be sure all equipment is grounded by using three prong plugs only. Check the ground on all outlets annually.

- Keep hands dry when working with electrical equipment. If liquids spill on electrical equipment, unplug immediately if it can be done safely and dry the equipment with a hair dryer.

- Never use electrical equipment when any "problem conditions" occur such as frayed power cords, sparking noises or overheating smells, damaged plugs and any feeling of small shocks or tingling.

- Contact Quality Manager for any of the electrical problems.

- Contact the Director if the problem is not solved in an hour of detecting it.

6.3 <u>Fire Safety Precautions</u>:

i. In the event of a fire or other hazardous situation (major chemical spills and electrical problems), all employees must remember the **RACE** acronym for appropriate action.

ii. **Rescue:** Move all people in the vicinity of the hazard beyond a fire door.

iii. **Alert:** Notify the fire department through a phone call. When phoning, be prepared to give your name and the location and extent of the hazard. Also alert other personnel in the area and tell them to help you.

iv. **Confine:** Try to keep the hazard in one location by closing all doors and windows. Turn off all gas supplies, remove all flammables, and assure that all smoke doors are closed. Disconnect all electrical equipment where appropriate. Turn AC off.

v. **Extinguish** a fire with an approved fire extinguisher only from a point of safety. Never turn your back on the fire; move the extinguisher back and forth at the base of the fire.

vi. Other **fire safety** precautions that employees must know include:

- The proper evacuation plan and what the exit routes are for the area. Be certain that the exit route remains unobstructed.
- Location & use of the fire alarm / extinguishers.
- The telephone number for calling the fire department.
- Storing incompatible chemicals separately.
- Keeping flammable liquids away from sources of ignition such as motors, and switches.
- Using safety can to store flammable liquids if any. Keep flammable liquids in an approved fire safety cabinet. Keep doors of the cabinet closed.

6.4 **First Aid Procedures:** Ensure First Aid is available in the lab.

- The laboratory has a policy for reporting and taking corrective actions in case of adverse incidents such as accidental trauma or injury occurring in the laboratory.
- The adverse incidents to be reported and corrective actions to be taken for the same in the laboratory include the following:

a. Accidental contact with a Corrosive Chemicals (Acid / Alkali) :

- Splash and wash the affected part immediately with plenty of water.
- Bathe the affected part with cotton soaked with dil. alkali. (on contact with acidic chemical).
- Bathe the affected part with cotton soaked with N/10 HCL.(on contact with alkali chemical)
- Splash the eyes with plenty of water, if the affected area is eyes.
- Immediately seek for medical help for further treatment & follow up.

b. Accidental Swallowing:

- Spit out immediately.
- Wash the mouth with plenty of water.
- Immediately seek for medical help for further treatment & follow up.

c. Injury by broken glass:

- Wash the wound with disinfectant solution.
- Cover with gauze and antiseptic solution.
- Immediately seek for medical help for further treatment & follow up.

d. Injury with burns :

i) In case of **minor burns**, bathe the affected area in cold water & immediately seek for medical help for further treatment & follow up.

ii) In case of **major burns**-

- Put out the fire with a towel/blanket.
- Pour cold water on the affected parts.
- Try to remove the smoldering clothes.
- Immediately seek for medical help for further treatment & follow up.

e. Bleeding:

- Make the victim lie down.
- Apply direct pressure to wound with sterilized gauze.
- Clean the wound with antiseptic & immediately seek for medical help for further treatment & follow up.