

BMU/HSE-02



Hazardous Substance and Hazardous Waste Management Plan

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1. HAZARDOUS SUBSTANCES AND HAZARDOUS WASTE POLICY STATEMENT:

Baqai medical university is committed to fulfill compliance with local and federal laws and regulation for the purpose to manage hazardous waste in an environmentally friendly manner. The Health, safety and environmental department is responsible for making policies and procedures for the management of hazardous material and hazardous waste. Baqai medical university is also committed to run hazardous material and hazardous waste management programs. The HSE Engineer is responsible to oversee the defined process of periodic collection of hazardous waste in coordination with the departmental representatives/ administration for the safe method of disposal and to minimize risk of waste generation. Administration department is responsible for transportation, storage and disposal of hazardous materials from cradle to grave. This is the responsibility of the departments to maintain record and track hazardous material from collection to disposal location in university. Departments are recommended to dispose of the wastes as per MSDS and the instructions issued by HSE department to deal with hazardous waste in departmental units. All policies should be implemented by the departmental head in coordination with HSE Engineer and non compliance must be strictly avoided. If any department fails to comply with hazardous material and waste management

programs, then training need assessment would be conducted over there and the staff may be trained by refresher training programs till the time they gain sufficient knowledge to become safety conscious.

2. INTRODUCTION:

2.1 Goal:

The ultimate goal of hazardous material waste management programs is to protect the health, safety and environment for human beings. Waste minimization is a critical part of hazardous material and waste management programs. With the provision of these programs, the quantity and cost of hazardous waste can be effectively reduced. Also waste handling staff will get awareness about hazards related to hazardous waste. Front end users (students) get awareness about hazardous material with the scheduled training provided by lab staff.

Purchase planning will be minimizing the quantity of hazardous material storage & generation by the departmental laboratories.

2.2 Objective

The objective of hazardous material and waste management plan is to use a visionary approach to minimize hazardous waste by taking precautionary measures and also taking proper

care while handling and disposal of such undesired material. This program is intended to provide awareness/ Instructions to faculty & staff in management of these undesired materials and hazardous waste.

3 HAZARDOUS MATERIAL AND HAZARDOUS WASTE REGULATIONS:

The Sindh environmental protection agency has strict rules and regulations for disposal of hazardous waste from labs. And hospital waste management. The Sindh hazardous substance rule 2014, hospital waste management 2014 and Sindh occupational health and safety act 2017 are legitimate guidelines for health, safety and environmental protection in Sindh province. Baqai medical university is committed to fulfill all legislative and legal requirements to preserve the environment and to protect staff, students and faculty from harmful effects of hazardous material by providing them required training and taking adequate measures for their safety and health. Baqai medical university is also working for the segregation, transportation and disposal of hazardous material as per SEPA guidelines.

Under the SEPA rules and regulations any organization can be fined by the SEPA (Sindh Environment Protection Agency) if found not performing in accordance with federal and local laws and regulation. Considering these requirements, hazardous

materials and waste management plans should be followed in real letter and spirit and disciplinary action shall be taken by the management against the violators which may lead to even termination from service depending upon the nature of violation.

4 WASTE TYPES:

Waste generated by Fatima hospital and other university departments have been subcategorized into non hazardous (food waste, plastic waste, wooden waste, metallic waste) and hazardous (pathological waste, chemical waste, geno-toxic waste, infectious waste, pharmaceutical waste and sharps) waste.

This plan also provides guidelines and best practices to create awareness of chemical waste that requires special disposal and management methodology. Special procedures for continued operation and control of the generation of hazardous chemicals should be controlled in the departmental labs, under the guidelines of SEPA and overseen by HSE Engineer.

5 DEPARTMENTAL RESPONSIBILITIES:

All departments are requested to read this plan and develop their internal departmental schedules and develop methodology with the help of MSDS, SEPA guideline and

quantity of waste generated with the assistance of HSE engineer for disposal of such materials as per plan requirements. All departments are required to develop disposal procedures for the labs where chemicals are being used.

6 HAZARDOUS WASTE MANAGEMENT SYSTEM:

Hazardous waste in Baqai medical university is divided into two categories:

6.1 Hospital Waste Management:

Fatima hospital of Baqai medical university is working in compliance with Sindh hospital waste management rule 2014. The method of approach is to collect waste on a daily basis from the departmental collection points and dispose of weekly. The segregation of waste is from the waste generation location and is done by trained staff in three types of waste bins (Red, Blue and Yellow). The central waste management team collects waste from the hospital emergency gate and also brings down waste from the first floor through a ramp to deliver at the incarnation area. The hazardous risk waste generated by the hospital is being dealt with care and disposed of under the guidelines provided by Sindh Environmental Protection Agency (SEPA)

6.2 Chemical Waste Management:

Chemical wastes generated by the departments are disposed of as per SEPA guidelines. The expired chemicals are returned to the supplier. In any case if the chemical could not be returned to supplier it will be disposed of as per method described in MSDS by SEPA Approved 3rd party contractor, as per SEPA guideline of chemical waste in hospital waste management rule 2014:

“Chemicals from diagnostics and experimental work, and any relevant material having hazardous chemical contamination such as cleaning, housekeeping, disinfecting, mercury clinical equipment, spillage and cadmium from discharge batteries”

All kinds of above mentioned waste comes in hazardous chemicals under hazardous substance rule 2014 SEPA guideline, is disposed as per disposal method written in rule.

7 WASTE MINIMIZATION STRATEGY:

Non risk waste: BLACK/ BLUE

All the non risk waste is being minimized by the strategic approach of REDUCE-REUSE-RECYCLE-ENERGY RECOVERY.

The non risk wastes are: Paper, cardboard, food waste and can be disposed of through a contractor for the purpose of recycling.

8 WASTE MANAGEMENT POINTS:

Initially departments dispose of waste in Red, Blue and Yellow containers in front of all departments. the details regarding color coding have been provided as:

1. Blue waste bin: non risk waste
2. Red waste bin: infectious waste
3. Yellow waste bin: geno toxic, chemical waste, radioactive and pharmaceutical waste
4. Hard plastic/metallic container: sharps

The waste in waste bins/containers are already segregated by the departmental collection points and taken to the incineration area where these waste is transported by the SEPA approved 3rd party waste Disposal Company and disposed of as per SEPA guidelines.

 **Baqai Medical University**

INFECTIOUS WASTE	PLASTIC WASTE	GENERAL WASTE
<p>Bandages, Gauze, Cotton or any other thing(s) in contact with Body Fluids, Human Tissues Contaminated Chemical, Plaster / Caster, Mask, Gloves and Pharmaceutical Discarded Items, Drugs, Ash etc.</p> <p>آلودہ مواد، استعمال شدہ کیپٹس اور قراپ، پلاسٹر وغیرہ، داکھ اوریات، انسانی اعضا، دستانے اور استعمال شدہ ماسک</p> 	<p>Catheters, Injections Syringes, Tubings, I.V. Bottles, etc</p> <p>پلاسٹک کا مواد، حقن آلوزروٹی یا پٹی جیسے کہ کیلیبر، نیپکے، ڈرپ، ٹنگلیاں، لیپارٹری آسٹم اور گندے خون کے بیگ</p> 	<p>Empty Bottles & Cartons of Juices, Water and Cold Drink, Common Garbage, Fruit Peels, Paper Card Boards, etc.</p> <p>جوس، پانی اور شراب کی بوتلیں اور ڈسپے، عام استعمال کی اشیاء کا کچرا، پھلوں کے پتے کا تھکے گئے وغیرہ</p> 

From Health Safety Environment (HSE) As per South Hospital Waste Management Rule 2014

9 RISK ASSESSMENT:

Environmental Risk Assessment (ERA) is conducted by HSE on yearly basis to:

The ERA Conducted by HSE is for the following purpose/objectives:

1. Protection of employee's health and safety by Proper evaluation, packing and labeling of materials under use, protects the health and safety of employees handling or potentially exposure to hazardous chemical waste.
2. Reduction of hazardous chemical waste volume in the laboratory the volume of hazardous chemical waste generated at the University can be reduced by:
 - a. Disposal of non-hazardous wastes separately from hazardous chemical wastes.
 - b. Utilizing procedures for chemical waste minimization (Lab Safety Manual).
 - c. recycling of unused and reusable chemicals in teaching and research laboratories.
3. Compliance with regulations to ensure that BMU is in compliance with federal, and provincial regulations

regarding packing, labeling, storage, transportation and disposal of hazardous chemical wastes.

10 WASTE GENERATION TYPES AND CATEGORIES:

Waste is disposed of in containers having color coding as below:

10.1 Hospital Waste:

Waste generated during diagnosis, treatment, immunization or in production or testing of biological research activities and operations.

10.2 Geno-toxic waste: YELLOW

Cyto-toxic drugs and outdated material, vomits, faeces or urine from patients treated with cyto-toxic drugs or chemicals and materials such as syringes or vials contaminated from preparation and administration of such drugs. YELLOW

10.3 Chemical Waste: YELLOW

Chemicals from diagnostics and experimental work, and any relevant material having hazardous chemical contamination such as cleaning of laboratory equipment, housekeeping, disinfecting, mercury clinical equipment, spillage and cadmium from discharge batteries are the main source of chemical waste.

10.4 Infectious waste: RED

Waste contaminated by any types of pathogens such as bacteria, viruses, parasite or fungi

AREAS: LABORATORY, SURGICAL WARD, INFECTED PATIENTS WARD.

10.5 Liquid waste:

Washing lab, cleaning lab, housekeeping, disinfecting activities

Areas: LABORATORIES, MICROBIOLOGICAL LAB.

Treatment: disinfection by chemical usage at least 1% hypocrite solution then discharge and drained

10.6 Radioactive Waste: YELLOW

Liquid, solid and gases contaminated by radioactive nuclides generated from in-vitro analysis imaging or investigating therapeutic procedures.

Treatment: treated in a facility with lead walls.

10.7 Pharmaceutical Waste: YELLOW

Expired pharmaceutical products, spilled contaminated products, surplus drugs, vaccines, sera, pharmaceutical discarded items such as bottles, boxes, gloves, masks, tubes or vials'.

10.8 Sharps: RED

Needles, syringes, scalpels, infusion sets, saws and knives, blades, broken glass and any other items that could puncture.

12 SCHEDULE AND FREQUENCY OF WASTE COLLECTION:

Baqai Medical University
Hazardous Waste Management

Department: _____

Sr. #	Area/Location	Waste Type	Quantity	Disposal Duration

13 EFFECTIVE ARRANGEMENTS OF ONSITE:

BMU has an incineration area behind Nizam Stadium which is separated from the approach of staff and labor. All the waste is collected there and segregated.

HAZWOPER (Hazardous Waste Operations and Emergency Response):

13.1 First Responder Awareness Level:

- Any liquid found on lab floor, consider it as chemical spill and take action as described
- Witness or discover hazardous substance release
- Initiate emergency response by notifying departmental representatives
- Take no further action after notification.
- Understand what hazardous materials are and the risk associated with them
- Understand potential outcomes by hazardous substances.

13.2 Defensive Response (Operation Level 2):

Respond to actual or potential releases to protect persons, property or environment

- Recognize hazard and risk by hazardous Communication
- Select Proper PPEs as per risk evaluated
- Perform basic control, containment and confinement
- Implement basic decontamination
- Understand relevant SOPs and Procedures
- Perform basic record keeping

□ Respond to release; Close valve, spillage control.

14 TRAINING SCHEDULE:

Training is provided to all staff by HSE as per defined schedule. The training schedule and material is attached in the training file/ manual.