ROYAL CENTRE FOR DISEASE CONTROL

SOP No. RCDC/QMS/QSE/SOP/2.5

STANDARD OPERATING PROCEDURE FOR WASTE DISPOSAL

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1. ACRONYMS AND DEFINITION

RCDC	Royal Centre for Disease Control
QMS	Quality Management System
MSDS	Material Safety Data Sheet
SOP	Standard Operating Procedure

2. PURPOSE

This SOP definesidentification and segregation, Handling, Storage, transportation and disposal of variouskind of wastesat RCDC.

3. APPLICATION

This SOP applies to all staffthatgenerates, collect, receive, store, transport, treat, dispose, or handle wastes in any form at RCDC.

4. RESPONSIBILITIES

4.1.Lab personnel

- Train on, read, understands this SOP and properly performs the procedure in accordance with this SOP
- Fill out each form as indicated in the SOP.
- Report any deviations of the SOP in writing to the Section Head.
- Ensure waste is well segregated at point of generation
- Ensure safety boxes that are ¾ full are closed, stored appropriately and ready for collection.
- Transport to the onsite temporary storage area within respective section or division

4.2.Section Head

- Ensure availability of all the required Commodities- Color coded bins, bin liners and PPEs
- Ensure that designated personnel receive documented training on this SOP and follow this SOP.

- Verify all forms related and results obtained from this procedure.

4.3. Head of RCDC

- Provide an adequate temporary storage area in the facility that is secure, easily cleaned and leak-proof together with a waste transfer trolley

4.4. Cleaners

- To ensure that segregation is done at point of generation and remedial action taken accordingly.
- Quantification of the commodities and ensuring continuous supply of commodities
- Ensure appropriate bin placement
- Ensure safe handling and collection of Bio medical waste
- Ensure the collection of the waste as outlined in the table 1
- Tie the bin liners and collect the waste from the generation point
- Replace the liners
- Develop a waste collection plan

4.5. Quality Manager

- Shall ensure that the appropriate PPEs are provided for all workers in healthcare waste stream.

5. PRINCIPLE

Waste generated from the centre must be segregated. Infectious wastes are considered hazardous. It should not be mixed with general waste. It requires special handling, treatment and disposal practices.

6. PRECAUTION

- Avoid spillage of the waste.
- Avoid needle-prick injuries.
- Wear rubber gloves during transportation of chemical wastes.

7. MATERIALS AND EQUIPMENT

- Color coded bins and liners
- Waste segregation charts
- Appropriate PPE
- Waste transportation trolleys
- Temporary storage area

8. PROCEDURE

8.1. Waste Identification and segregation

- The bio-medical waste must be segregated at the point of generation in accordance the segregation as per Table 1;
- All bags, containers or bins directly used in the collection of bio-medical wastes are labeled with appropriate Hazard Symbol (Table 1)
- Bins used for holding the colour coded bags should be of the same colour. In case a bin of the same colour is not available due to some reason, a neutral colour bin may be used with a prominent sticker of the colour of the bag pasted on the lid and/or body. The size of the sticker must be approximately of half the size of the lid of the bin.

Table 1: Waste category and color codes

Category	Examples of Wastes	Color of Bin and Liner	Marking
General or non-infectious	Paper, packaging materials, plastic bottles, food, cartons	Green	No recommended marking
Infectious	Laboratory specimens and containers use for biological agents, Gloves, blood, body fluids, used specimen containers	Red –pedal action	
Chemical	Formaldehyde, batteries, photographic chemicals, solvents, organic chemicals, inorganic chemicals	Brown	Marking will vary with classification of the chemical
Radioactive	Any solid, liquid, or pathological waste contaminated with radioactive isotopes of any kind	Yellow	Radioactive symbol
Sharps Box (Safety Box)	Needles, Syringes, broken vials	White/yellow safety boxes (WHO Approved)	

8.2. Handling and Collection of bio medical wastes

Types of Biomedical Wastes

- Solid Biomedical Waste (i.e. plasticware, tubing, pipette tips, gloves)
- Liquid Biomedical Waste (i.e. cultures, stocks, vaccines)
- Sharps Waste (i.e. needles, glass, scalpels, razor blades)

8.2.1. Procedures for Solid Bio-Medical Waste

- Remove the collection bags (liners) from the bins as per schedule.
- Tie/knot the liners
- Replace the liners immediately with new ones of the same type
- Take the waste to the decontamination area within the section/division (Autoclave-see SOP for autoclaving).
- Collect the waste from decontamination room and place in the trolley for transportation to storage area.

8.2.2. Procedures for Liquid Bio-Medical Waste

- Place all the potentially infectious liquid wastes in a discard pan lined with a biohazard bag.
- Decontaminate before emptying intoappropriate location.
- Liquids that have been autoclaved or decontaminated using bleach can be disposed of using the sanitary sewer system.

NOTE: *Decontamination with a chemical other than bleach may require special disposal procedures.*

8.2.3. Procedures for Sharp Waste

- The containers for sharps are color coded as per table 1. It must be closable, puncture-resistant, leak-proof on the sides and bottom.
- Wet items and small amounts of liquids (e.g., a few ml of blood remaining in a tube) can be disposed in these containers. Larger volumes of liquids should be handled as liquid waste.

- Containers should be easily accessible and located close to work areas where sharp materials are used.
- The containers must be maintained upright.
- These containers need to be replaced routinely. Do not allow these containers to become overfull. These containers should be closed and removed when 2/3 full.
- Do not remove the lids from these containers or force objects into them.
- Needle must not be bent or re-capped

8.3. Waste Storage and Transportation

8.3.1. Waste Storage

- Restrict access to storage areas.
- Wear PPE when handling waste.
- Maintain segregation at the designated storage area
- Place the Safety boxes in a dry floor to avoid soaking
- Maintain cleanliness in the storage area

Note: *Waste should not be stored for more than 2 days before treatment.*

8.3.2. On-site transportation

- Wear appropriate PPE
- Take the trolley to the temporary storage area/ generation sites
- Knot bin liners and place them in the trolley
- Collect the safety boxes, ensure the safety boxes are not more than ¾ full and closed
- Safety boxes must not be stored for more than one week in a service delivery point and must be disposed off.
- Take the trolley through designated route to avoid contact with the people and other clean areas

8.3.3. Offsite transportation

- Develop a schedule of waste collection by Thimphu Thromde
- Always wear PPE when handling waste

8.3.4. Documentation

- Fill the waste receipt log with waste treatment staff.
- Summarize the daily waste quantities in a weekly waste quantification tool

8.4. Chemical Wastes

- Label each container you package with its identity – Material Safety Data Sheet
- Attach a properly, completed Chemical Discard Tag on each waste container.
- Each hazardous chemical waste disposal container must have a "Hazardous Chemical Waste for Disposal" label, which is completely filled out.
- Segregate the chemicals considering chemical compatibility when packaging.
- Store chemicals in closed containers that will not leak.
- Store liquids separately from solids.
- If you have multiple containers of the same chemical, pack your chemicals in a strong chemical waste receptacle.
- Chemical waste must be collected by specialized chemicals waste collectors.
- Collectors must be licensed and they should know how to request for the collection of chemical /hazardous waste.
- Always refer to MSDS when disposing chemicals for guidance on the best method of disposal.
- Small amounts of pharmaceutical waste may be incinerated with the other wastes.
- Disposal of chemical waste and contaminated items to trash and/or municipal sanitary/ sewer must be done after pre-treatment of chemicals waste all the times.
- Strong Acids may be neutralized using alkaline chemical reagents before disposing into laboratory sinks.
- Ethidium bromide and polyacrylamide gels and any such toxic chemicals should be discarded in a separate container (containing 5-10% Hypochlorite with 24 hrs.

retention time), which can be incinerated or buried time to time as and when needed.

9. REFERENCE

- Guideline on Biosafety for Health Laboratories, Bhutan, 2018
- Health Care Waste Management Standard Operating Procedures First Edition, 2016 republic of Kenya Ministry of Health
- Environmental Health and Safety Division Biological Safety Office, Augusta University.