Waste and Spill Management

Category:	**QUALITY MANAGEMENT**		
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Prepared by:	Mr. Meshal M. Al-Sharafa	Original Date:	Sep 2024
Approved by:	Dr. Alaa Abdullah AlMasud	Effective Date:	

1.0 PURPOSE

Processing and storage of Human Biological Material could involve the use of hazardous chemicals. Measures and precautions should be taken to ensure that personnel handle these chemicals with care to avoid contamination and injury. Disposal of used chemicals should be done safely and with adherence to local regulations.

2.0 SCOPE

The Occupational Health and Safety Procedures at the natural health research center hosting Nourah's tissue biobank have procedures that should form the basis of safety precautions for biological and chemical handling and disposal and spills . However, this procedure covers basic steps that should be followed to ensure that personnel are adequately informed to avoid contamination, damage to the environment and personal injury. These procedures in this standard operating procedure (SOP) apply to all wastes at the biobank.

3.0 ROLES AND RESPONSIBILITIES

The SOP applies to all personnel from Nourah's tissue biobank member that work at the biobank site and are responsible for handling, storing and disposing of hazardous chemicals.

Biobank Personnel	Responsibility
Laboratory Technician/Technologist	Handle and dispose of Hazardous Chemicals in biobank and be familiar with chemical safety procedures
Pathologist/Pathologist assistant	Handle and dispose of Hazardous Chemicals in biobank
Designated safety committee member	To assist with the monitoring of the use of chemical and disposal of waste.

4.0 MATERIALS, EQUIPMENT, AND FORMS

The materials, equipment and forms listed in the following list are recommendations only and may be substituted by alternative/equivalent products more suitable for the site-specific task or procedure.

Material to be used	Site
Hazardous Chemicals and waste	
Disposal Receptacles	
Identifying Labels	

Appropriate Forms and Manifests	

5.0 POTENTIAL HAZARDS

In this part of the SOP, we explain the potential hazards from chemicals and methodologies used in this procedure. It will also contain information on how to handle these chemicals and the level of biosafety i

Material	Safety and handling

6.0 PROCEDURES

6.1 WASTES DISPOSAL GUIDELINES

6.1.1. Biospecimen processing generates chemical and biohazard waste. It is essential that the types of waste that will be generated are assessed, and that procedures are put in place to properly dispose of this waste.

6.1.2. Segregate the waste according to its types, (biological, chemical, sharp .. etc.)

6.1.3. The final disposition of hazardous waste must be the responsibility of the environmental health and safety department in accordance with the local regulations.

6.1.4. Disposing of biohazard waste and chemicals used in biobank facilities down a sink drain or as regular garbage is unacceptable

6.1.5. Effective management techniques for Laboratory Hazardous Waste guidelines can reduce the amount of chemical waste. For example:

6.1.5.1. Order and stock quantities of reagents or chemicals in amounts consistent with use.

6.1.5.2. An agreement to receive long expiry dates and to return additional unused chemicals to the store or vendor.

6.1.5.3. Substitute non-hazardous or less hazardous materials for the hazardous ones whenever feasible.

6.1.5.4. Identify chemicals that can be disposed of safely in the normal trash or sanitary sewer system and utilize these avenues of disposal.

6.1.5.5. Annual review of procedures will seek optimal methodology, which may limit hazardous waste production.

6.1.6. Liquid Reagents and Chemical Waste Disposal

6.1.6.1. All reagent and waste will be collected in waste container, labeled with the name of waste (reagent or chemical) and date of discard.

6.1.6.2. Disposal will be done in ventilated area e.g. formalin, alcohol and xylene waste.

6.1.6.3. Chemical waste disposal form will be fill out, including name of reagent or chemical, date of disposal, volume and technologist signature.

6.1.6.4. Waste container will be picked up by collecter staff and the chemical waste disposal form will signed by him.

6.1.7. Biological Waste: Dispose sponge / cloth used for cleaning of lab working benches and items contaminated with blood, free- flowing blood, blood components and patient specimen plastic containers to medical waste bin.

6.1.8. Surgical Specimen Disposal

6.1.8.1. All specimens are kept in Anatomic Pathology grossing area's storage shelves for 2 weeks after the verification of final report.
6.1.8.2. Every week, after making sure that final reports have been verified, remove specimen that have been stored for 2 weeks from the shelves.
6.1.8.3. Remove specimen container caps and discard tissues in red biohazard bag.
6.1.8.4. Collect specimen formalin in formalin waste container for chemical waste disposal in ventilated area.
6.1.8.5. Discard empty specimen containers in the black bags.
6.1.8.6. Close the bag and tie with rubber band.
6.1.8.7. Put the bag in another red biohazard bag and tie.
6.1.8.8. Fill up the tissue for burial disposal form and attach it to the specimens to be buried.
6.1.8.9. Sign the tissue for burial disposal form.
6.1.8.10. Put all specimens in a box and seal it
6.1.8.11. label it as tissues specimens for burial.
6.1.8.12. The tissues will be picked up by the Mortuary staff representative.
6.1.8.13. The mortuary staff will sign the burial disposal form.

6.1.9. Amputation

6.1.9.1. After grossing and taking representative sections from amputated limb.
6.1.9.2. Put amputated organs in a biohazard bag that contains a piece of cloth or under pad soaked in 10% neutral buffered formalin.
6.1.9.3. Store amputated limb in refrigeration 2-8 ºC and leave it until report is signed out.
6.1.9.4. After reporting the grossing, tech in charge will wrap the amputation with under pad.
6.1.9.5. Put wrapped specimen in red biohazard bag and wrap it.
6.1.9.6. Close the bag and tie with or without a rubber band, fill the tissue for burial disposal form and sign it.
6.1.9.7. The amputated limb will be picked up by the Mortuary staff representative or porter, the tissue for burial disposal form will be signed by mortuary staff.

6.1.10. Disposal of Fetus

6.1.10.1. Wrap the fetus by pad and put it inside red biohazard bag and wrap it.
6.1.10.2. Put the fetus inside box and seal it and label it as fetus for burial.
6.1.10.3. Fill up the burial disposal form.
6.1.10.4. The tissues will be picked up by the Mortuary staff representative or porter, the tissue for burial disposal form will be signed by mortuary staff.

6.1.11. Glass Slides and Block Disposal

6.1.11.1. After completing retention time for glass slides and blocks pull out from the filing and collect them in yellow safety containers.
6.1.11.2. Label yellow container properly and fill out Glass Slide and Block Disposal Form
6.1.11.3. The container will be picked up by Housekeeping staff for disposal.
6.1.11.4. If there is any broken glass slide or glass wear collect them in yellow safety container with the help of forceps**.**

6.1.12. Sharps Disposal

6.1.12.1. Dispose all sharps, glass tubes, glass containers and reagents glass vails to sharp container.
6.1.12.2. Close the sharp container when it became three quarter (3/4) full.
6.1.12.3. Keep the sharp container on its holder and do not replace it on the floor.
6.1.12.4. Arrange with environmental services department to collect immediately and directly from its holder.

6.2 SPILL MANAGEMENT

6.2.1 Biological Spills

6.2.1.1 The biobank laboratory must have a special biological spill kit designed for any biological spills

6.2.1.2. Follow the manual procedure and all staff should be trained on how to use it.

6.2.2 Chemical Spills

6.2.2.1. The biobank laboratory must have a general chemical spill kit (absorbent towel) designed for minor chemical spills

6.2.1.2. Follow the manual procedure and all staff should be trained on how to use it.

6.2.3. **Formaldehyde Spills**

6.2.3.1. Wear proper PPE , including respirator, google and gloves.

6.2.3.2. Distribute POLYFORM_F, starting from outside to inside.

6.2.3.3. POLYFORM-F must be added to spill at a rate of 1 to 1.

6.2.3.4. Leave the POLYFORM-F for 10-15 minutes for polymerization and solidification.

6.2.3.5. Collect the spills with scope and scraper.

6.2.3.6. Dispose all materials in hazardous waste container.

6.2.3.7. Contact environmental services for further clean up before allowing traffic.

6.2.3.8. Report the incident to direct section manager and safety officer.

7.0 REFERENCES

7.1 Refer to 3-110203-879(4) policy of king Abdullah bin Abdulaziz hospital university

7.2 2. CAP, Collage of American Pathologist Check lists.

7.3 3.CLSI, Clinical Laboratory Safety; Approved Guidelines.

8.0 REVISION HISTORY

SOP No.	Date Revised	Author	Summary

9.0 APPENDICES

Appendix A Tissue for Burial Disposal Form

Appendix B Chemical Waste Disposal Form

Appendix C Glass Slide and Block Disposal Form