

## Appendix J

### University of Alabama at Birmingham Medical Waste Management Plan

- I. Definitions per the Alabama Department of Environmental Management Land Division 13-Solid Waste Program, Chapter 335-13-1, Medical Waste (ADEM), 49 CFR 173.134 Hazardous Materials Regulations and UAB policy.

Medical waste shall be interpreted to mean:

- A. Animal Waste: Carcasses and body parts, regulated bulk blood and body fluids, and surgical waste from animals exposed to human infectious agents as a result of the animal(s) being in contact with biologicals and pharmaceuticals in testing, production and research.

Note: At UAB all animal carcasses and body parts shall be treated as medical waste and returned to the area designated by the Animal Resources Program (ARP) for disposal by UAB or its contractors.

- B. Blood and Body Fluids: All human bulk blood, bulk blood components (serum and plasma) and bulk specimens of blood, tissue, semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, and amniotic fluid from patient treatment areas, clinical and research laboratories.

Note: ADEM has interpreted bulk blood to mean a volume of blood that is fluid to the point of leaking but does not include materials that are stained or tainted with blood. Accordingly, ADEM uses the example of plastic tubing that contains enough blood that can flow out of the tubing would be sufficient quantity to be considered "bulk blood". Tubing that has a residue or stain of blood, but not fluid, would not be considered medical waste.

- C. Microbiological Waste: Discarded cultures and stocks of human infectious agents and associated microbiologicals; human and animal cell cultures from medical and pathological laboratories; waste from production of biologicals; discarded live and attenuated vaccines; culture dishes and devices used to transfer, inoculate, and mix cultures.

- D. Pathological Waste: All discarded human tissues, organs and body parts which are removed during surgery, obstetrical procedures, autopsy, laboratory, embalming, or other medical procedures, or traumatic amputation.

- E. Renal Dialysis Waste: All liquid waste from renal dialysis contaminated with peritoneal fluid or with human blood visible to the human eye. Solid renal waste is considered medical waste if it is saturated, having the potential to drip or splash regulated blood or body fluids.

- F. Sharps: Any used or unused discarded article that is capable of cutting or penetrating the skin or can cut or puncture packaging material during transportation and has been or is intended for use in animal or human medical care, medical research or in laboratories using microorganisms. (Ex: hypodermic needles, IV tubing with needles attached, scalpel blades and syringes with or without needles attached). Glassware, glass blood vials, glass pipettes, and similar items that are contaminated with blood, body fluids, or microorganisms are to be handled as sharps.

Note: These items are to be placed directly into designated and approved sharps containers located as close to the work area as possible. They will be transported to treatment and disposal facilities by UAB or its contractor.

Other glass items that are not contaminated with blood or body fluids or other hazardous materials are to be discarded in rigid, puncture-resistant containers which are labeled "glass only" or "broken glass only" as appropriate. These containers will be removed from the facility by environmental services and disposed of in the landfill.

- G. Surgical Waste: All materials discarded from surgical procedures which are contaminated with human bulk blood, blood components, or body fluids, included but not limited to disposable gowns, dressings, sponges, lavage tubes, drainage sets, underpads, and surgical gloves.

## II. Collection of Untreated Waste

- A. Medical and surgical waste will be separated from non-medical waste and placed into designated and approved medical waste containers at the point of generation, i.e., patient rooms, surgical suites, patient treatment areas, laboratories, etc. The specific criteria to make the separation of medical vs. non-medical waste will be in accordance with the definition as stated in Section I of this document.
- B. Medical waste (except sharps) will be placed in red, plastic bags (usually 35 gallon capacity). ASTM-D tested red transport container liners containing medical waste will be properly and completely secured into labeled, designated transport containers with covers or other approved containers to avoid leakage or spillage. Sharps (see definitions ) will be placed into leak proof, rigid, puncture resistant containers (approved sharps containers) and sealed to prevent loss of contents (ADEM 335-13-7-.02). The outermost container for medical waste shall meet state and federal regulations and be conspicuously labeled with the words "Medical Waste" or "Bio-Hazardous" or "Infectious" and/or contain the International Biological Hazard Symbol.
- C. In research areas medical waste shall be securely located away from traffic flow.

## III. Identification of Medical Waste

Medical waste contained in sealed, red, plastic bags and sharps containers will be placed in transport containers with covers which are rigid, puncture resistant, and leak resistant and prepared for pickup by UAB or its contractor. In UAB Hospital areas, medical waste will be moved to 2 collection points in and adjacent to the UAB hospital(s) for temporary storage before being picked up by UAB or its contractor. The outside container will be identified by bar codes which will contain the name and address of the generator (UAB) and the date the medical waste was moved to the pickup location or if temporary storage is utilized (see definition below), prior to pick up by UAB or its contractor.

All secondary containers, carts, or transport vehicles used in the collection or movement of medical waste within the labs, departments or units shall be identified and decontaminated as appropriate by the user.

## IV. Temporary Storage of Untreated Medical Waste

"Storage" as used in this sense would mean storage of the packed outside containers prior to pickup by UAB or its contractor.

Temporary storage for UAB Hospital will be accomplished at the solid waste compactor buildings. These buildings will be single-purpose (waste handling) for the purpose of this plan. The Medical Waste Temporary Holding Facilities will be identified by contrasting color signage specifying "Medical Waste". The "facilities" will be capable of full closure and will be secured and locked when not attended. Floors and wall surfaces which may come in contact with medical waste will be cleaned with a germicidal soap solution on a weekly schedule. The management of this facility will be under the direction of the Director of University Hospital Environmental Services (205) 934-4782.

The Medical Waste Temporary Storage Facility premises will be included in the UAB (Hospital) pest control contract coverage for insects and vertebrate pests.

Any UAB employee whose duties require exposure/contact with medical waste in any form will be furnished with and required to wear gloves and such other protective clothing as required by their department supervisor(s).

Hospital units and departments should avoid holding medical waste in any temporary holding area on UAB Hospital premises longer than six (6) days before pickup by UAB or its contractor where treatment will be rendered by appropriate methodology. When temporary holding areas are used, they are to be clearly identified and secured.

UAB shall maintain records for three (3) years. UAB OH&S will maintain transport/treatment records for campus locations. Hospital Environmental Services will maintain records for UAB Hospital. This information will include the name and location of the generator, i.e., UAB Hospitals, Birmingham, Alabama.

V. Transportation of Untreated Waste to Treatment Facility

Any medical waste collection, transport or disposal company contracted by UAB must meet all local, state, and federal requirements and provide copies of permits to OH&S.

Certain categories of medical waste (eg, Select agent, CJD) may be transported from the several collection sites on the properties of UAB to the following UAB storage and treatment facility:

University of Alabama at Birmingham  
221 14th Street South  
Birmingham, Al 35194  
(205) 934-3797  
Contact: Eric Grace, Manager of Hazardous and Regulated Materials

Transportation of medical waste will comply with the following conditions:

- A. There shall be no mixing of radioactive waste, chemical waste, or any other type of hazardous waste with untreated medical waste prior to transportation to the treatment/disposal facility.
- B. Untreated medical waste shall not be mixed with other solid waste in the same transport vehicle unless all of the waste is treated as medical waste. Leaking, improperly sealed or unlabeled containers shall not be accepted by the medical waste transporter. Medical waste shall not be compacted in a transported vehicle. Medical waste shall be transported only in an enclosed vehicle and no untreated medical waste shall be released to the environment.

UAB employees who transport medical waste from those designated collection sites at UAB to the disposal facilities shall be thoroughly familiar with all rules and

regulations pertaining to the movement of untreated and treated medical waste. Instructors for transportation training will be one of following:

Incinerator Plant Supervisor  
Hazardous and Regulated Materials Facility Manager  
Biosafety Officer

Training records for these employees will be available for inspection at the HRMF located at 221 14th Street South Birmingham, AL 35294.

Additionally, the following conditions shall be met and followed by UAB and its contractor:

All vehicles shall be identified with the transporter, business name, telephone number, a "Medical Waste" designation (or appropriate name or symbol), and the ADEM permit number.

#### VI. Transportation Treated Waste

Treated medical waste will be transported to an approved landfill in approved containers. Appropriate certification of treatment will be provided on an "as needed basis" from the treatment facility permittee to the permittee of the disposal facility.

#### VII. Treatment Measures

All medical waste, according to the definitions (ADEM 335-13-1.03 and 49 CFR 173.134 Hazardous Materials Regulations and UAB policy), generated by UAB hospitals, clinics and medical research laboratories will be treated according to the treatment schedule as indicated by ADEM 335-13-7 and 49 CFR 173.134 Hazardous Materials Regulations and UAB policy.

Complete treatment of medical waste will be accomplished by incineration, and/or steam sterilization.

##### A. Incineration Methods

Incinerators decontaminate and destroy medical waste using high temperature combustion. Specific conditions and regulations as these may apply to the incineration process conducted by UAB's medical waste contractor or at the UAB Hazardous and Regulated Materials Facility are as follows:

1. Storage requirements for untreated medical waste shall comply with those storage regulations stated in this Program.
2. Combustible medical waste shall be rendered non-recognizable during the incineration process and prior to disposal in the sanitary landfill.

##### B. Steam Methods

Decontamination of waste by autoclaving uses the combination of moisture, pressure and heat to kill microorganisms.

Portions of medical waste generated at UAB will be treated at the point of generation by autoclaving. This waste will then be transported to the final treatment facility by UAB or its contractors before disposal.

1. Hazardous chemicals and radioactive wastes will not be included in any autoclaving process.
2. Autoclaves at UAB shall be equipped with a continuous temperature and pressure monitoring device or an equivalent ADEM approved test. Efficiency of each autoclave used for medical waste treatment at UAB shall be checked using Bacillus stearothermophilus at least once after each forty hours of operation.
3. An operational, written log for each UAB autoclave used for medical waste shall include at least the following information:
  - a. Date, time and operator for each cycle
  - b. Temperature and pressure maintained during cycle
  - c. Method used for confirmation of temperature and pressure
  - d. Dates and results of calibration and maintenance

#### VIII. Disposal of Treated Waste

All treated medical waste intended for disposal in a sanitary landfill shall be disposed of in an approved facility. Specific conditions and requirements regarding proper disposal of treated medical waste include the following points:

- A. Written certification to the effect that medical waste has been properly treated shall be provided to the transporter permittee or his designee and to the waste disposal facility.
- B. Certification shall be provided at least on an annual basis.
- C. Proper records shall be maintained concerning storage, transportation and final disposal of medical waste generated by UAB hospitals, clinics and medical research laboratories. These records will be maintained for at least three years and will be available for review upon request by ADEM or DOT representatives.

#### IX. Education and Training

- A. An education program designed to provide information about the types of medical waste encountered in the workplace and identify appropriate procedures, personal protective equipment, and precautions used for handling and disposing of medical waste in accordance with UAB, the Alabama Department of Environmental Management and the US Department of Transportation requirements is available through the UAB Department of Occupational Health & Safety to all employees who manage or have contact with medical waste.
- B. All employees who manage or have contact with medical waste are required to attend one in depth medical waste training session at the time of their initial assignment and a refresher every three years. Periodic updates may be conducted thereafter in conjunction with other safety programs or as separate courses. Hospital employees will receive updates during their annual safety update sessions.

- C. Consultation and response to questions regarding medical waste issues will be provided on request by contacting the UAB OH&S Biosafety Program.

X. Coordination and Implementation of Medical Waste Management

- A. The UAB Medical Waste Management Plan is designed to be in compliance with local, state, and federal regulations. The UAB Department of Occupational Health & Safety in conjunction with the Institutional Biosafety Committee and other affected parties reviews and revises the plan yearly and as regulations and guidelines mandate.
- B. Any modifications to this plan are to be reviewed by the UAB Department of Occupational Health & Safety. Container approval must be coordinated through the UAB Department of Occupational Health & Safety's Biosafety Program.

References:

Alabama Department of Environmental Management Land Division-Solid Waste Program,  
Division 13, Code 335-13, November 1993.

US Department of Transportation Hazardous Materials Regulation 49 CFR 173.134

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ASM Press, 1995

U.S. Department of Health and Human Services, Centers for Disease Control/National Institutes of  
Health, Biosafety in Microbiological and Biomedical Laboratories, Atlanta, GA: 1993.

U.S. Environmental Protection Agency, "Managing and Tracking Medical Wastes - A Guide to the Federal  
Program for Transporters", EPA/530-SW-89-022. Washington, DC: September 1989.

U.S. Environmental Protection Agency, "Managing and Tracking Medical Wastes - A Guide to the Federal  
Program for Generators", EPA/530-SW-89-021. Washington, DC: September 1989.

Congress of the United States Office of Technology Assessment, "Issues in Medical Waste  
Management", OTA-BP-O-49. Washington, DC: October 1988.

## REVIEW SCHEDULE

Implementation Date: \_\_\_\_\_

Reviewed (Circle Responses)		Updated		Date	Biosafety Officer
Yes	No	Yes	No		
Yes	No	Yes	No		
Yes	No	Yes	No		
Yes	No	Yes	No		
Yes	No	Yes	No		
Yes	No	Yes	No		