

US EPA ARCHIVE DOCUMENT

Mississippi Regulations Governing Medical Wastes

Sustainability and Compliance in
the Healthcare Industry

July 30, 2008

Medical Wastes

- According to the U.S. EPA, solid wastes generated by hospitals represent approximately 1% of the municipal solid waste stream (about 15 lbs per patient daily);
- On average, about 15% of that is potentially infectious wastes and the remaining 85% is comprised of paper, packaging, plastics and food wastes.

Applicable State Laws/Regulations

- Adopted Standards For the Regulation of Medical Waste in Healthcare Facilities Licensed by the Miss. State Department of Health (Nov. 1989);
- Mississippi Nonhazardous Solid Waste Management Regulations; and
- Mississippi Solid Waste Law (Miss. Code Section 17-17-1, et seq.)

MSDOH Medical Waste Standards

- Definitions

- *Infectious Medical Wastes* – solid or liquid wastes which may contain pathogens with sufficient virulence and quantity such that exposure to the waste by a susceptible host has been proven to result in an infectious disease.
- *Medical Wastes* – all waste generated in direct patient care or in diagnostic or research areas that is non-infectious but aesthetically repugnant if found in the environment

MSDOH Medical Waste Standards

- The following wastes are to be considered infectious wastes:
 - Wastes from care of patients with Class I/II diseases transmitted by blood or body fluids
 - Cultures and stocks of infectious agents;
 - Blood and blood products (serum, plasma, other);
 - Pathological wastes (tissues, organs, body parts, fluids);
 - Carcasses, parts and bedding of animals exposed to pathogens in research;
 - All discarded sharps contacted by infectious agents;
 - Others wastes determined infectious by generator or classified by State Dept of Health.

MSDOH Medical Waste Standards

- A Medical Waste Management Plan is required for generators to include the following:
 - Storage and containment provisions for infectious medical waste and medical waste;
 - Treatment and disposal provisions for infectious medical waste and medical wastes.

MSDOH Medical Waste Standards

- Storage and Containment Standards
 - Must be conducted in a manner that is protected from animals, weather conditions, does not provide breeding place or food source for insects and rodents and minimizes exposure to the public;
 - Infectious waste (untreated -except for sharps) may not be stored for more than seven days above a temperature of 38° F
 - Infectious waste may not be stored above a temperature of 32° F for a period of more than 90 days.

MSDOH Medical Waste Standards

- Storage and Containment Standards
 - Containment of infectious wastes must be conducted separate from other wastes;



MSDOH Medical Waste Standards

- Storage and Containment Standards
 - Enclosures or containers used for infectious wastes shall be secured to discourage access to unauthorized persons and shall be marked with prominent warning signs on or adjacent to the exterior of any entry door, gates or lids;
 - Infectious wastes, except for sharps, shall be contained in double disposable bags or single bags that are 1). impervious to moisture, 2). Strong enough to preclude ripping, tearing, or bursting 3). Securely tied to prevent leakage or expulsion of wastes during handling.

MSDOH Medical Waste Standards

- Storage and Containment Standards
 - All bags used for containment and disposal of infectious wastes shall be distinctive in color and display the universal symbol for infectious wastes;
 - Compactors nor grinders shall be used to process infectious medical wastes unless the waste has been rendered non-infectious;

MSDOH Medical Waste Standards



- Universal Symbol for Infectious Medical Wastes

MSDOH Medical Waste Standards

- Storage & Containment Standards for Sharps
 - All sharps must be contained in leak-proof, rigid, puncture resistant containers tightly lidded to prevent loss of contents and shall be labeled accordingly;



MSDOH Medical Waste Standards

- Storage & Containment Standards for Sharps
 - Sharps containers may not be compacted except in the institution itself and shall not be placed for disposal in a mobile trash compactor;



MSDOH Medical Waste Standards

- **Storage and Containment Standards**
 - Wastes in disposable containers must be placed for storage or transport in disposable or reusable drums or bins with leak proof secure covers and shall be kept clean and in good repair;
 - Reusable containers for wastes shall be thoroughly washed and decontaminated each time they are emptied unless the surfaces are protected by disposable liners, bags or other devices;
 - Decontamination may occur through exposure to hot water or a chemical sanitizer;
 - Trash chutes shall not be used for transfer of infectious medical wastes.

MSDOH Medical Waste Standards

- Treatment and Disposal Standards
 - Treatment of infectious waste may occur by one of the following methods:
 - Incineration (requires MDEQ air permit);
 - Steam sterilization;
 - Chemical sterilization.
 - Recognizable human remains must be disposed by incineration or interment or in another manner approved by the MSDOH.

MSDOH Medical Waste Standards

- Operating Standards for Incinerators:
 - Incinerators require air emissions control permits from the MDEQ;
 - Incinerator must be operated in compliance with the MDEQ permit conditions;
 - Incinerator must provide complete combustion of the waste to carbonized and mineralized ash.

MSDOH Medical Waste Standards

- Operating Standards for Steam Sterilizers:
 - Written operating procedures must be developed including time, temp, pressure, waste types, containers, loading pattern, water content and load maximum;
 - Must attain sterilization cycle temp of at least 250° F for one half hour or longer (variant on load sizes to achieve sterilization of entire load;
 - Thermometers must be calibrated annually.

MSDOH Medical Waste Standards

- Operating Standards for Steam Sterilizers:
 - Use of heat sensitive tape or other similar device for each container processed to indicate adequate sterilization conditions;
 - Use of biological indicator (*Bacillus stearothermophilus*) placed on the center of a load processed under standard operating conditions at least monthly to confirm adequacy of sterilization conditions;
 - Maintain records of procedures for at least one year;
 - Disposal of sterilization fluids by sewer system unless prohibited by MSDOH, MDEQ or Owner of Sewer System.

MSDOH Medical Waste Standards

- Operating Standards for Chemical Sterilizers:
 - Shall only use chemical sterilants recognized by the U.S. EPA (e.g. ethylene oxide, glutaraldehyde, & hydrogen peroxide);
 - Sterilants must be used according to manufacturer specifications;
 - Sterilants must render infectious waste non-infectious;
 - Process must be tested with indicator *Bacillus subtilis* spores or other equivalent organisms on a quarterly basis to ensure effectiveness of treatment.

MDEQ Solid Waste Regulations

- Infectious medical wastes and medical wastes are regulated as solid wastes in Mississippi and not as hazardous wastes (except where such wastes meet the definition of hazardous wastes);
- The processing of solid wastes on the site of generation are exempt from the Nonhaz. Solid Waste Mgt. Regs. (I.B.8).

MDEQ Solid Waste Regulations

- Storage, Collection and Transportation Standards
 - Must be stored in a manner to prevent fire, safety or health hazards, providing food or harborage for animals or vectors, contained so as not to result in litter;
 - Containers must be of sufficient size and strength and in sufficient numbers to adequately contain the amount of waste generated and stored between collection events;
 - Collection must occur on a sufficient frequency to prevent attraction of vectors and public nuisance conditions.

MDEQ Solid Waste Regulations

- Storage, Collection and Transportation Standards
 - Vehicles and equipment used for transport must be operated to prevent loss of liquids, solid wastes and to minimize health and safety hazards to collection personnel and to the public;
 - Vehicles must be maintained & cleaned in sanitary condition to prevent odors and vector attraction;
 - Any spillage of wastes during collection or transport must be promptly cleaned and remediated;
 - MDEQ does not currently require identification or certification of medical waste transporters.

MDEQ Solid Waste Regulations

- Treatment and Disposal Standards
 - All commercial infectious waste treatment facilities must have a solid waste management permit from MDEQ (*Commercial facilities includes those that accept wastes for compensation or from more than one generator not owned by the facility owner*);
 - Commercial infectious waste treatment facilities may require other environmental permits from MDEQ if the facility has air emissions, process water discharges, or storm water releases that exceed permitting thresholds.

MDEQ Solid Waste Regulations

- Treatment and Disposal Standards
 - Solid Waste Management Permit requires:
 - Local Approval (planning and zoning);
 - Demonstration of Siting Criteria Compliance;
 - Completed Disclosure Statement;
 - Plan of operation and facility design that must minimally comply with MSDOH standards for storage & treatment of infectious medical wastes;
 - Recordkeeping to certify the receipt & adequacy of treatment for the generator & the receiving disposal facility.

MDEQ Solid Waste Regulations



- Waste Disposal at Landfills

MDEQ Solid Waste Regulations

- Treatment and Disposal Standards
 - All medical wastes and infectious wastes rendered non-infectious by treatment must be minimally disposed at a municipal solid waste landfill or similar facility;
 - All MSW landfills must prevent the disposal of infectious medical wastes at their landfill facilities under individual solid waste permit restrictions;
 - MDEQ conducts unannounced inspections of all commercial treatment and disposal facilities.

Mississippi Solid Waste Laws

- Solid Waste Law, MS Code, Section 17-17-1, et seq
 - Provides minimum standards for transport, management and disposal of solid wastes and prohibits the unauthorized dumping and open burning of such wastes;
 - Grants MDEQ authority to inspect property or vehicles where a regulated activity is occurring;
 - Provides that solid wastes become the property of the commercial collection enterprise at the point of collection and the property of the treatment facility operator upon delivery to the facility.

Mississippi Solid Waste Laws

- Solid Waste Law, MS Code, Section 17-17-1, et seq
 - Provides that Local Governments have both the duty and authority to direct the flow of solid wastes locally through a 20 year solid waste management plan;
 - Sets the waste reduction and recycling goal of 25% for the State of Mississippi and requires that the shall implement actions to achieve that goal.

Other State Environmental Laws

- Prevents the management of wastes in such manner so as to cause pollution of the air or waters of the state (49-17-29);
- Provides that the unauthorized dumping of solid wastes in certain quantities or for commercial purposes may be a misdemeanor or felony crime (97-15-30).

Issues on the Horizon

- Household Sharps Outreach Program to be developed by MDEQ & implemented by January 1, 2010
- Additional focus nationally on the management of pharmaceutical wastes;
- MDEQ developing a medical waste assistance web page on the MDEQ web site;
- MDEQ is beginning the process to revise our solid waste regulations governing solid waste management facilities.

Contact Information

Mark Williams

MDEQ

Solid Waste Programs

P.O. Box 2261

Jackson, MS 39225

Phone: 601-961-5304

Fax: 601-961-5785

Email: Mark_Williams@deq.state.ms.us