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Regulated Medical Waste

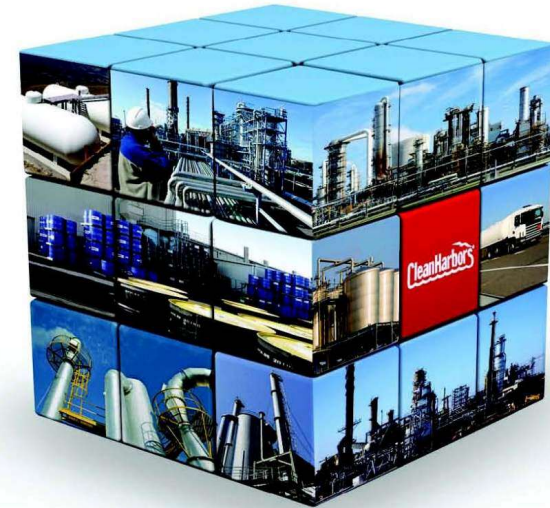


People and Technology
Creating a Safer,
Cleaner Environment



Meeting Agenda

- **✓ SAFETY FIRST!**
- **Introduction**
- **General Review of Medical Waste**
- **US EPA and TCEQ Requirements**
- **Q&A**





Driving Safety

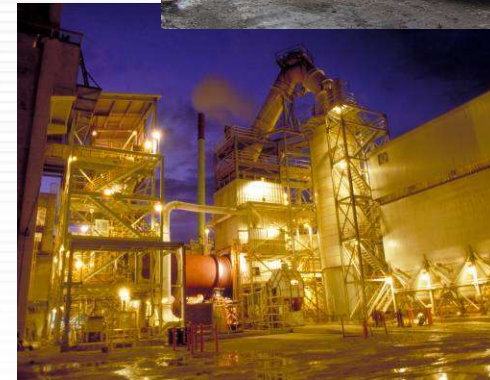
- Three-second rule - is a rule of thumb by which you stay at least two seconds behind any vehicle that is directly in front of you

(Best driving lesson I have ever learned – **distance – on all sides**, is your friend)



Who is Clean Harbors?

- **Founded in 1980**
- **Publicly Traded Corporation (NYSE: CLH)**
- **\$2.8 Billion USD in Revenue in 2016**
- **North America's Largest Hazardous Waste Disposal Company**
- **Leading Provider of Comprehensive Environmental, Energy and Industrial Services**





Importance of Medical Waste Management

New York Times

Ebola Is Diagnosed in Texas, First Case Found in the U.S.

SEPT. 30, 2014

... flight from Liberia that landed in Dallas

....health officials had monitored a total of 177 people in **Texas** for contact with one of the three people diagnosed with **Ebola** in the state.





Six medical wastes are commonly regulated

- **Pathological Waste - Tissues, organs, body parts, and body fluids removed during procedures**





Six medical wastes are commonly regulated

- **Blood - Waste blood, serum, plasma and blood products**





Six medical wastes are commonly regulated

- **Contaminated hypodermic needles - syringes, scalpel blades, Pasteur pipettes, and broken glass**





Six medical wastes are commonly regulated

- **Isolation waste - Generated by hospitalized patients isolated to protect others from communicable disease**





Six medical wastes are commonly regulated

- **Infectious waste and microbiological waste - Specimens from medical and pathology laboratories, includes culture dishes and devices used to transfer, inoculate, and mix, also includes vaccines**





Six medical wastes are commonly regulated

- **Contaminated animal carcasses - animals exposed to pathogens in research, biologicals production, or in vivo pharmaceuticals testing**





Who Regulates Medical Waste?

- **Since the (US EPA) 1988 Medical Waste Tracking Act Expired in 1991 - Medical waste is primarily regulated by **state environmental and health departments.****
- Other federal agencies have regulations regarding medical waste. These agencies include Centers for Disease Control (CDC), Occupational Safety and Health Administration (OSHA), U.S. Food and Drug Administration (FDA), and potentially others



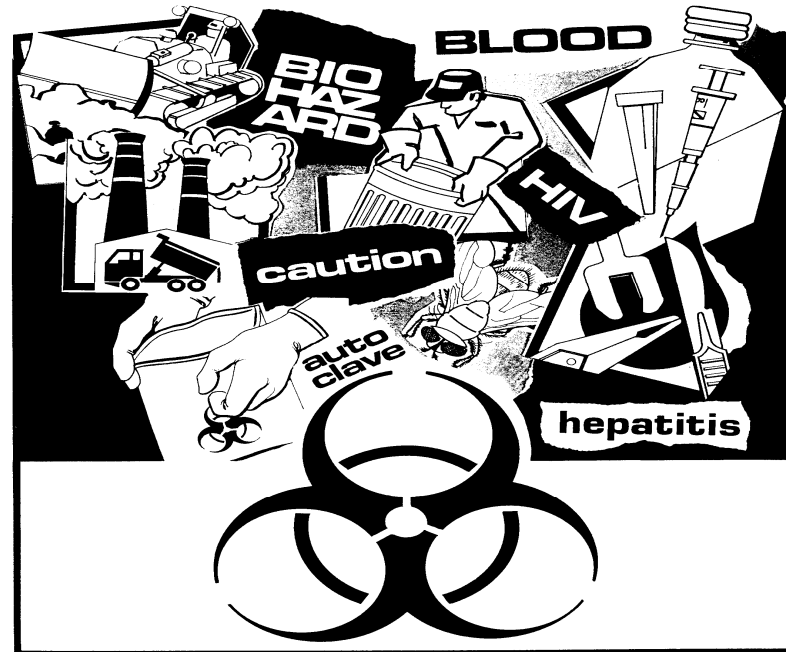
US EPA Treatment and Disposal of Medical Wastes

- **Medical Waste Incineration** - More than 90 percent of potentially infectious medical waste has typically been incinerated
- **Alternative Treatment and Disposal Technologies** - Potential alternatives to incineration of medical waste include:
 - Thermal treatment, such as microwave technologies;
 - Steam sterilization, such as autoclaving;
 - Electropyrolysis; and
 - Chemical mechanical systems, among others.



US EPA Published State Guidelines

Model Guidelines for State Medical Waste Management



The Council of State Governments



TCEQ REGULATORY GUIDANCE

Waste Permits Division
RG-001 • Revised August 2016

Texas Regulations on Medical Waste

This is a regulatory guide to assist generators of medical waste, transporters of untreated medical waste, and operators of medical-waste treatment facilities or mobile treatment units. This guidance is based on rules pertaining to medical waste that became effective May 26, 2016, contained in Title 30, Texas Administrative Code, Chapter 326. Permits and registrations issued to medical-waste treatment and transfer facilities that existed before May 26, 2016, remain valid for two years from that date, or until a final decision is made on a timely filed new application for an existing authorization to comply with Chapter 326, whichever is later. The executive director is authorized to extend that deadline based on an authorized entity making a request supported by good cause. Registrations by rule for transporters and mobile treatment units, subject to annual renewal, remain in effect and must renew under this chapter. Notifications that existed before May 26, 2016, remain valid and are subject to these rules.

Abbreviations

- **CFR**—Code of Federal Regulations.
- **DSHS**—Texas Department of State Health Services.
- **mL**—milliliter(s).
- **MSW**—municipal solid waste.
- **TAC**—Texas Administrative Code. “30 TAC xx.yy” is short for “Title 30, Texas Administrative Code, Chapter xx, Section yy.”

Definitions

Medical waste: Defined in 30 TAC 326.3(23). Includes “special waste from health care-related facilities” as used by the DSHS and “regulated medical waste” as defined in 49 CFR 173.134(a)(5). Note that the TCEQ’s use of “medical” is equivalent to “health care-related” as used by the DSHS.

Special waste: As defined in 30 TAC 330.3(148), includes **untreated** medical waste. Treated medical waste may be sent for disposal in an MSW Type I landfill provided a shipping document, including a statement that the waste has been treated, accompanies the shipment as referenced under 30 TAC 326.75(r).

Special waste from health care-related facilities: As defined in 25 TAC 1.132(44), identifies five categories of waste that are regulated:

1. Waste from animals that have been intentionally exposed to pathogens.
2. **Bulk blood**, bulk human-blood products, and bulk human bodily fluids.
3. Microbiological waste.

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TCEQ – Managing and Disposing of Medical Waste

https://www.tceq.texas.gov/permitting/waste_permits/msw_permits/mw_disposal.html/#more

Requirements for the management and disposal of medical waste in Texas, with links to rules, guidance, and forms.

- [What Wastes are Considered to be Medical Waste?](#)
- [Disposing of Syringes from Households](#)
- [Information for Generators of Medical Waste](#)
- [Categories of Generators](#)
- [Storing Medical Waste On-Site](#)
- [Meaning of the Terms On-Site and Off-Site](#)
- [Self-Transporting Untreated Medical Waste](#)
- [Using Another Authorized Transporter](#)
- [Treating Medical Waste On-Site](#)
- [Licensed Hospitals Functioning as Collection and Transfer Facilities for Generators of Small Quantities of Medical Waste](#)
- [Storing Medical Waste Received from Off-Site Sources](#)
- [Transporting Medical Waste](#)
- [Transferring Medical Waste](#)
- [Treating Medical Waste](#)
- [Disposing of Medical Waste](#)
- [Application Forms and Guidance Documents](#)



Texas Regulations on Medical Waste

- Package and label it properly as specified in 30 TAC 326.17, 326.19, and 326.21 before its transportation off-site





Texas Regulations on Medical Waste

- Bags containing medical waste;
 - ❖ placed in a rigid container that is leak resistant, impervious to moisture
 - ❖ strong enough to prevent tearing and bursting
 - ❖ sealed to prevent leakage
 - ❖ meet U.S. Department of Transportation under 49 CFR 173.134 and 49 CFR 173.196 (infectious)



CleanHarbors[®] Treatment of Medical Waste:

- **incineration** followed by deposition of the residue in a sanitary landfill;
- **steam disinfection** followed by landfill;



CleanHarbors® Treatment of Medical Waste:

- **moist heat disinfection**, provided that the grinding/shredding renders the item as unrecognizable, followed by deposition in a sanitary landfill;
- **chlorine disinfection/maceration**, provided that the grinding/shredding renders the item as unrecognizable, followed by deposition in a sanitary landfill; or
- **any approved alternate**





Unique in Texas –

- Medical waste in more than 72 hours post-collection storage must be maintained at 45 degrees Fahrenheit or lower





Regulatory References:

DSHS rules: 25 TAC 1.131–1.137

TCEQ rules: 30 TAC Chapters 326 and
330

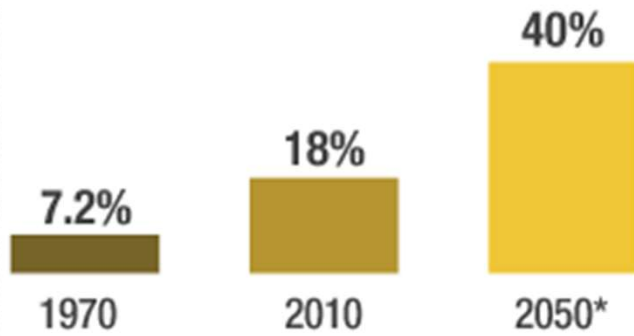


Emerging Trends

- **US EPA MANAGEMENT STANDARDS FOR HAZARDOUS WASTE PHARMACEUTICALS** - *pharmaceuticals are regulated as hazardous waste under the Resource Conservation and Recovery Act (RCRA) when discarded.*
- **Texas Commission on Environmental Quality Chapter 326 - Medical Waste Management Rule Project No. 2015-019-326-WS** – recommends changes to storage treatment and disposal methods – *treatment by incineration (as example)*



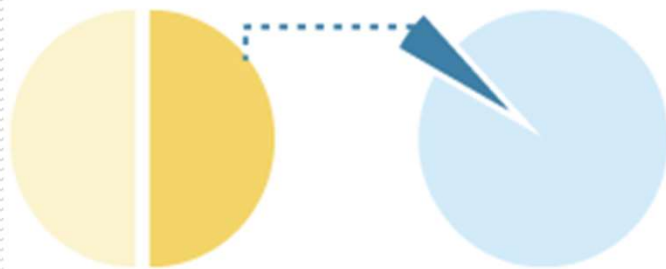
Health care costs as a percentage of U.S. GDP



Annual U.S. health care spending



About **5% of the U.S. population** is responsible for almost half of all health care spending.



Average amount spent on health care in the U.S.

1970 **\$356**
PER PERSON PER YEAR

2010 **\$8,402**
PER PERSON PER YEAR





Questions?

