
# Biomedical Waste Management

# Biomedical Waste Management for Scientific Experts

Compliance, Safety, and Best Practices

# Course Objectives

- Understand categories of biomedical waste
- Learn regulatory responsibilities
- Apply safe handling procedures
- Plan for emergencies and contingencies
- Ensure documentation and compliance

# Overview of Regulatory Framework


- California Medical Waste Management Act (2025 update)
- Federal regulations: OSHA, DOT, EPA
- licensing and enforcement
- Permitting tiers: SQG vs. LQG

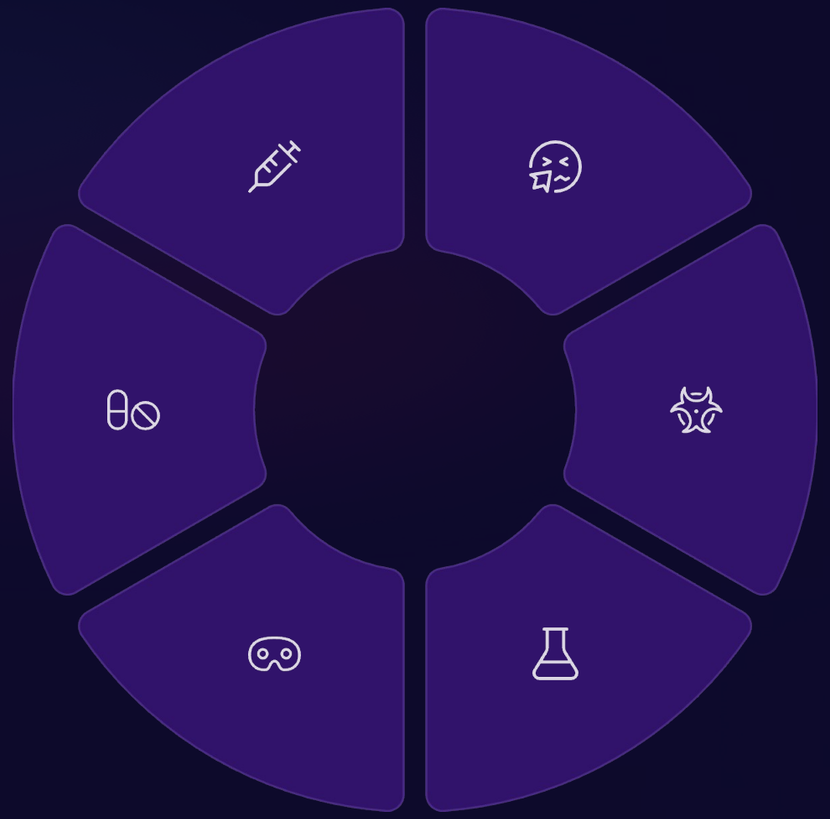
# What Is Biomedical Waste?

Definition: waste that poses risk of infection or injury

Generated in labs, clinical settings, animal research

Requires special handling and disposal methods

# Waste Category Overview



Sharps

Pathological waste

Pharmaceutical waste

Infectious waste

Contaminated PPE

Laboratory waste

# Sharps Waste

- Examples: needles, syringes, scalpels
- Disposal: FDA-approved, puncture-resistant sharps containers
- Never recap needles
- Labeling and sealing protocols


# Pathological & Infectious Waste

## Pathological Waste

Tissues, body parts

Requires incineration

## Infectious Waste

Blood-soaked materials

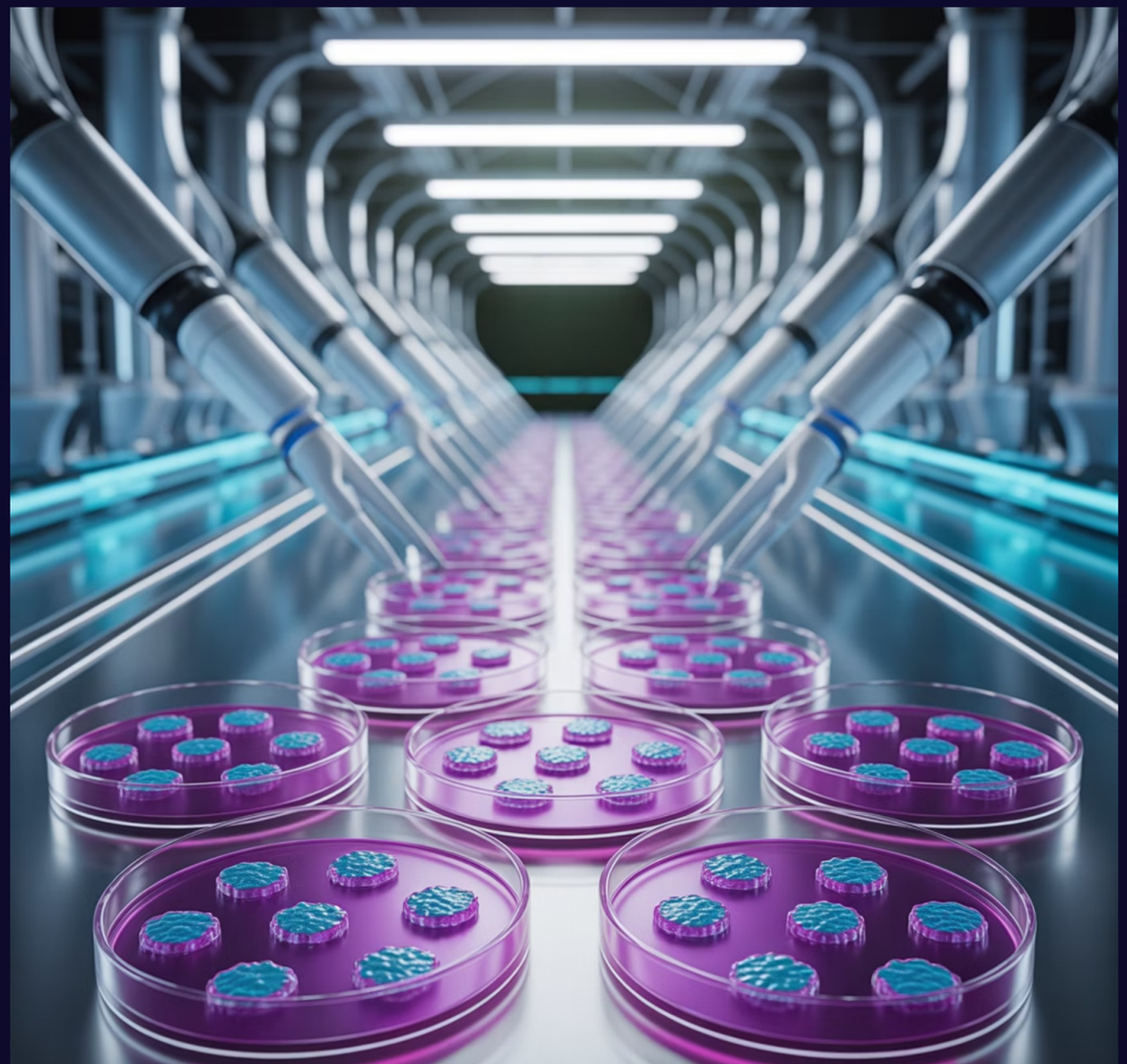
Autoclave or red bags

Must be leak-proof and labeled as biohazard

# Laboratory and Contaminated PPE Waste

## Laboratory Waste

Cultures, infectious agents → treated prior to disposal



## Contaminated PPE

PPE: gowns, gloves, masks exposed to biohazards

Bagged separately in red bags (non-recyclable)

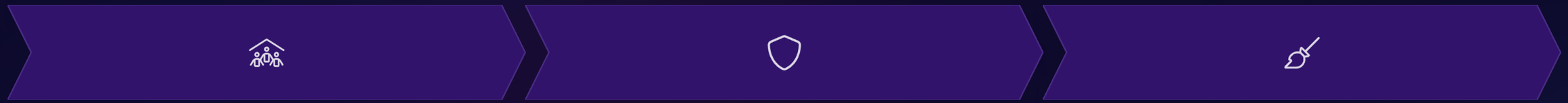
# Pharmaceutical Waste

- Expired or unused drugs
- Controlled substances → DEA destruction protocol
- Non-hazardous vs. hazardous: RCRA classifications
- Segregate from regular waste

# Departmental Roles and Responsibilities

| Department | Responsibilities |
| --- | --- |
| Laboratory | Point-of-use segregation |
| Clinical | Proper discard of patient-related waste |
| Housekeeping | Daily pickup, labeling, containment |

# Individual Staff Responsibilities



## Department Heads

Policy enforcement, SOP updates

## Infection Control

Compliance audits, regulatory updates

## Housekeeping

Container rotation, spill response

# Identification and Segregation

- Biohazard symbols, red bags, color-coded bins
- Segregate at point of generation
- Never mix hazardous/non-hazardous waste
- Example color-coding chart

# Containment and Labeling

## Sharps

Sealed containers

## Infectious

Double-bagged if saturated

## Pathological

Rigid leak-proof container

All waste labeled with generator name and date

# Waste Transport: Internal & External

## Internal

Secure carts with lids

## External

STATE-permitted vendor

Use manifest system; keep records for 3 years

Route logs and chain of custody

# Treatment and Disposal Methods

| Waste Type | Treatment Method |
| --- | --- |
| Sharps | Autoclave or incineration |
| Infectious | Autoclave or chemical |
| Pathological | Incineration |
| Pharmaceuticals | Reverse distributor / incineration |

# Emergency & Contingency Planning

- Pre-arranged backup vendors
- Emergency storage: secure, labeled area
- Notify infection control and State
- Spill management protocols

# Training and Competency

- Annual staff training
- Topics: ID, segregation, handling, transport
- New hire orientation + hands-on demo
- Competency sign-off sheets

# Compliance Documentation

Training logs

Waste manifests

Internal audit records

Corrective actions + incident logs

[Insert your local Health Code citation]

# Annual Plan Review and Certification

- Annual review by infection control + department leads
- Submit updates to State
- Ensure new policies are approved before implementation

Completion = Certificate of Compliance Training