



Generators, transporters, and facilities that treat, store, or dispose of untreated infectious waste have specific responsibilities for dealing with such wastes properly. Improperly handled infectious waste carries the risk of infection, can injure unsuspecting people that come in contact with it, and can pollute the environment. Infectious wastes are not regulated as hazardous waste in Colorado; they are regulated as solid waste. Colorado statute Title 25 Article 15 Part 4 [25-15-401 CRS *et seq.*] and solid waste regulations [6 CCR 1007-2 Section 13] set minimum requirements for generators and other handlers of infectious waste.

Infectious wastes are also regulated by federal agencies, including the US Environmental Protection Agency (US EPA), US Department of Transportation (US DOT) and the Occupational Safety and Health Administration (OSHA). OSHA has developed the blood borne pathogen rule in 29 CFR 1910.1030. This applies to all employees who may reasonably anticipate being occupationally exposed to blood, body fluids, and other potentially infectious materials. Occupational exposure means a reasonably anticipated skin abrasion, eye, mucous membrane or skin piercing contact with blood or other potentially infectious materials that may result from the performance of the employee's duties.

### **Definition**

Infectious waste is any waste capable of producing an infectious disease in a susceptible person. Certain factors are necessary for the spread of infectious diseases, and all must be present simultaneously for disease transmission to occur. These factors include: presence of a pathogen potent enough to cause infection (sufficient virulence); there has to be enough of the pathogen to have an effect (dose); there has to be a way to get into the body (portal of entry); and the person exposed must be vulnerable to infection (resistance of the host). [25-15-402 CRS]

### **Generator Requirements**

Generators of medical wastes are required to designate which wastes are infectious based on these factors. Generally recognized infectious wastes include, but are not limited to: isolation wastes from persons having a disease requiring Biosafety Level IV containment; cultures and stocks of infectious agents and biologicals; human blood, blood products and other body fluids; human pathological or anatomical waste consisting of tissues and body parts; contaminated sharps; and contaminated research animals and bedding. [25-15-402 CRS]

Non-household generators of infectious waste must develop and implement an on-site infectious waste management plan appropriate for their particular facility. This plan must be available to the hauler of the waste, to the disposal facility, and to the licensing or regulatory agency. The plan must include the designation of infectious waste, provisions for the handling of that waste, staff training, contingency planning for spills or loss of containment, the designation of a person responsible for implementation of the plan, and provisions for appropriate on and off-site treatment or final disposal. [25-15-403 CRS]

The requirements for household generators of infectious waste are much less stringent. For details on household management of sharps and other medical wastes, refer to the Household Medical Waste Management Compliance Bulletin at <http://www.cdphe.state.co.us/hm/infecthm.pdf>.

### **Treatment and Disposal**

Properly labeled and packaged infectious waste may be disposed of in a permitted solid waste disposal facility without treatment. Historically, few solid waste haulers or disposal facilities have been willing to take untreated infectious waste. Recently, however, more landfills are becoming receptive to this type of waste. Landfills must be

approved by their local governing authority and the state health department to accept this type of waste, however.

If untreated infectious waste is disposed of in a solid waste disposal facility, these procedures must be documented in the generator's waste handling plan and must be acceptable to the waste hauler and disposal site. [25-15-403 CRS] Receptacles containing infectious waste must be clearly labeled with the biohazard symbol or with the words "Infectious Waste" in letters at least one inch high. Untreated waste must be stored, packaged, contained, and transported in a manner that prevents the release of the waste material and in a manner to prevent nuisance conditions. [6 CCR 1007-2 Section 13.8] Common industry practice is to use red bags for the disposal of infectious waste.

Contaminated sharps (needles, syringes, lancets) must be placed in a puncture resistant container and be properly designated as untreated infectious waste or made noninfectious by an appropriate treatment method. Untreated containers of sharps cannot be compacted. [6 CCR 1007-2 Section 13.8.4] The Colorado Department of Public Health and Environment recommends that needles, syringes, lancets and other sharps be collected in a sharps container and be sent to a collection site for proper disposal. There are many commercially available mail-in programs (<http://www.cdphe.state.co.us/hm/mailback.pdf>).

Alternatively, waste generators may treat their infectious waste themselves to render it noninfectious or contract with a medical waste disposal company. Infectious waste that has been appropriately treated to render it non-infectious is no longer considered infectious for handling and disposal purposes. [25-15-404 CRS] Treated waste can be disposed of with other noninfectious and nonhazardous solid wastes after the generator either identifies it as appropriately treated waste or provides the hauler and disposal facility with a written statement that its general waste includes appropriately treated infectious waste. [25-15-405 CRS, 6 CCR 1007-2 Section 13.8.3]

Appropriate treatment is any method that renders the waste noninfectious, and must include the following: documentation that the method is effective; a written standard operating procedure for implementation of the method; and regular monitoring to test the effectiveness of the treatment. [25-15-404 CRS] Widely used treatment methods include incineration, autoclaving, decontamination, and sterilization. [6 CCR 1007-2 Section 13.4]

The Colorado Department of Public Health and Environment does not approve or recommend specific treatment methods, but leaves it up to the generator to determine what is an appropriate and effective treatment method for their wastes. Guidance is available from medical associations, the US EPA, and the Centers for Disease Control (CDC) in Atlanta. US EPA has jurisdiction over medical waste treatment technologies that claim to reduce the infectiousness of the waste (i.e. that claim any antimicrobial activity) by use of a chemical. This jurisdiction comes from the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). Companies wishing to make such claims must register their product under FIFRA through EPA's Office of Pesticide, Antimicrobial Division.

Some wastewater treatment plants are able to accept discharges of liquid infectious wastes, but generators of the waste must obtain the written permission of their wastewater treatment plant operator before discharging liquids to the sewage system. [6 CCR 1007-2 Section 13.4.3]

Recognizable human anatomical remains cannot be disposed of at a solid waste landfill. These must be incinerated or interred. [6 CCR 1007-2 Section 13.4.4]

### **Generator Liability**

It is conclusively presumed that any infectious waste that has been appropriately treated and the procedure properly documented is no longer infectious after treatment. [25-15-407 CRS] A generator of infectious waste that both uses and documents an appropriate treatment method, or in good faith uses a proper disposal facility for the

waste, is not civilly or criminally liable for injuries or damages allegedly resulting from the infectious character of the treated waste. The generator of an infectious waste that does not use an appropriate treatment method or fails to use a proper disposal facility retains civil and criminal liability for that waste. [25-15-405 CRS]

Generators who knowingly allow their untreated, undesignated infectious waste to be removed from the site of generation are subject to civil penalties. In addition, anyone that knowingly hauls untreated infectious waste and recklessly spills the waste or knowingly disposes of the waste at an unlawful site or facility is also subject to civil penalties. [25-15-406 CRS]

### **Regulatory Oversight**

All facilities that store, treat, process, or dispose of infectious waste are regulated jointly by the Colorado Department of Public Health and Environment (the Department) and local governing authorities. If the facility is within the corporate boundaries of a municipality, then the governing body of the municipality has jurisdiction. If the facility is in an unincorporated portion of the county, then the governing authority for the county, generally the county commissioners, has jurisdiction. [6 CCR 1007-2 Section 13.1]

Most infectious waste treatment, storage, and disposal facilities have to obtain a Certificate of Designation (CD) to operate the facility. A CD is issued by the local governing body after it has been determined that the technical standards set out in the regulations are met and after local issues are satisfied. [6 CCR 1007-2 Section 13.3] Facilities which are not required to obtain a CD include: facilities that store and treat their own waste on-site or occasionally treat other infectious waste as a community service; hazardous waste disposal facilities permitted under the Colorado Hazardous Waste Regulations 6 CCR 1007-3; and household generators of infectious waste. Other regulations, such as air or water discharge permits, may still apply. [6 CCR 1007-2 Section 13.2]

Permitted infectious waste treatment, storage, and disposal facilities must be operated and main-

tained as specified in the approved engineering design and operations plan. [6 CCR 1007-2 Section 13.7.2] They must maintain adequate waste acceptance and disposal records, operating records, and environmental monitoring records for at least two years. [6 CCR 1007-2 Section 13.5] There is no time set for records retention at facilities that treat their own infectious wastes.

### **Storage**

Infectious waste stored at a permitted infectious waste treatment or disposal facility for more than 48 hours must be stored inside an enclosed structure maintained at 45 degrees F or less. Untreated waste cannot be stored longer than two weeks without written permission from the Department. [6 CCR 1007-2 Section 13.7.5] A solid waste transfer station cannot accept or store infectious waste unless the facility is specifically designed and approved to do so by the local governing authority. [6 CCR 1007-2 Section 7.1 (D)]

There are no storage time limits for generators of infectious waste. The waste need only be stored in a manner to prevent release of the waste and to prevent nuisance conditions. The Department recommends that generators of infectious waste follow the requirements for permitted facilities if they store their waste for more than a few days, however.

### **Spills**

Spills of infectious waste that occur during transportation must be cleaned up immediately by the transporter. Spills to the environment or those exposing workers or the general public to potential infection must be reported to the Colorado Department of Public Health and Environment (**24-hour statewide toll-free spill assistance and reporting hotline 1-877-518-5608**) and to the local governing body having jurisdiction within 24 hours. This is usually the local police department or county sheriff. A written summary report must be submitted by the transporter to the Department within seven (7) days of the incident. [6 CCR 1007-2 Section 13.8.5] In addition, spills of infectious waste during transportation must be reported

to the Center for Disease Control (CDC) at 1-800-232-0124. [49 CFR 171.15]

Spills of infectious waste that occur at the generation facility must be cleaned up in accordance with the site-specific infectious waste management plan. Solutions of 5.25% sodium hypochlorite (bleach) diluted between 1:10 and 1:100 with water are acceptable for disinfection of surfaces and for decontamination of sites following initial cleanup of spills of blood or other potentially infectious materials. Permitted solid waste treatment, storage, and disposal facilities must clean up any spills or loss of containment of infectious wastes according to their approved certificate of designation.

## Transportation

The US Department of Transportation regulates the safe transportation of hazardous materials. Infectious substances, including regulated medical waste, are one class (Division 6.2) of hazardous materials regulated under the Hazardous Materials Regulations (49 CFR Parts 171-180). An infectious substance may not be transported unless the requirements of these regulations are met. For more information on infectious waste transportation requirements, contact the hazardous materials transportation information line at 1-800-467-4922 or review the US DOT brochure on infectious substances transportation at [http://www.phmsa.dot.gov/staticfiles/PHMSA/Downloadable-Files/Files/Transporting Infectious Substances brochure.pdf](http://www.phmsa.dot.gov/staticfiles/PHMSA/Downloadable-Files/Files/Transporting%20Infectious%20Substances%20brochure.pdf).

## For more information:

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Division Website <http://www.cdphe.state.co.us/hm/>  
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This Compliance Bulletin is intended to provide guidance on the appropriate management of wastes based on Colorado solid and hazardous waste statutes and regulations only. The wastes described in this guidance may also be regulated under other statutes and regulations.