

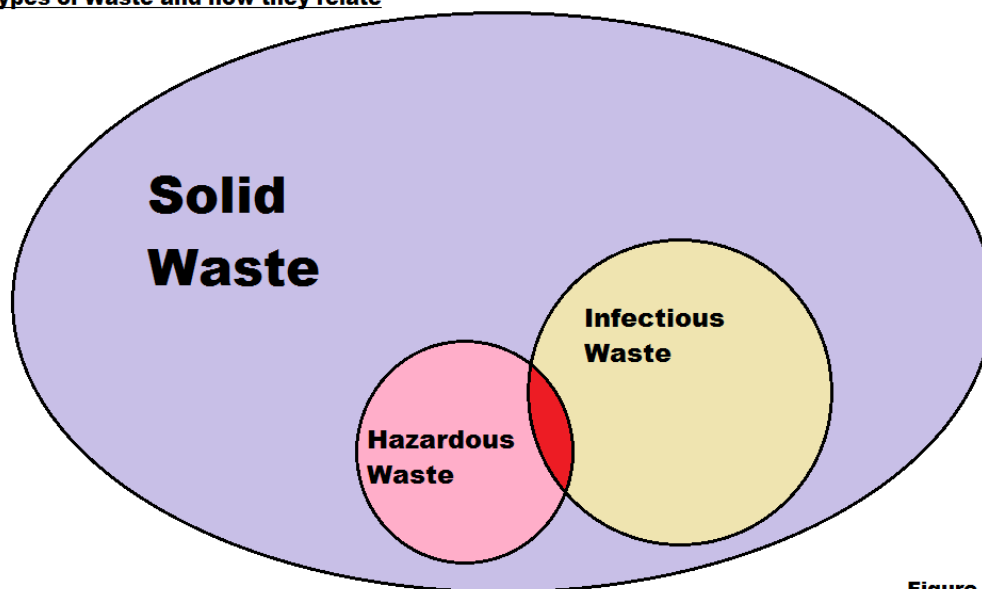
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## Infectious Waste Considerations During Pandemic

This guidance document will provide a detailed definition of what is considered infectious waste and suggest best practices for the containment, handling, and disposal of infectious waste during times of heightened biosecurity. As the COVID-19 pandemic came to prominence in early 2020, the Nebraska Department of Environment and Energy (NDEE) began receiving more requests for guidance and information regarding infectious waste disposal. We will first create a clear definition of what infectious waste is, and then discuss best practices for proper disposal.

Perhaps the best way to define infectious waste is to show its relation to other types of waste. The Venn diagram below illustrates the relationship of the three main types of waste regulated in Nebraska.

**Types of Waste and how they relate**



**Figure 1**

### **Solid Waste:**

Before a material can be considered infectious waste, the material must first be a solid waste. Solid waste is quite simply anything that is being thrown away. It can be solid, semi-solid, liquid, or even contained gaseous material that has been used, expended, exhausted, or otherwise spent or soiled and must now be disposed. Any material still in use is not a waste, and therefore not subject to waste

regulation. Nebraska solid waste regulations can be found in [NE Title 132 – Integrated Solid Waste Management Regulations](#).

### **Hazardous Waste:**

Hazardous waste is any Solid Waste that is also either a listed hazardous waste, or has characteristics that make it hazardous waste such as ignitability, reactivity, toxicity, or corrosivity. Hazardous waste is regulated by the US EPA and Nebraska DEE; the Nebraska regulations on hazardous waste can be found in [NE Title 128 – Nebraska Hazardous Waste Regulations](#). Any material still in proper use, no matter how potentially dangerous, is not a solid waste and therefore cannot be a hazardous waste. When any material becomes a waste, before it is disposed, it must undergo a [waste determination](#). This may include laboratory testing to determine if the solid waste is also a hazardous waste. However, most solid wastes are not hazardous waste and can be disposed at a permitted Municipal Solid Waste (MSW) or Construction & Demolition (C&D) landfill. Hazardous wastes are usually disposed through a waste service provider and sent to a Treatment Storage and Disposal Facility (TSDF).

### **Infectious Waste:**

Infectious waste is any solid waste that is capable of causing an infectious disease in a person. It's that simple. As seen above, the material must first be a solid waste before it can be an infectious waste. The waste must then also have some vector that makes it infectious. This could be a virus, a bacterium, or any other pathogenic organism. A material that is contaminated with a pourable, drippable quantity of blood, plasma, vomit, mucus, or any other body fluid is considered infectious, and must be treated as such. Infectious waste must be rendered non-infectious before it can be sent to a MSW landfill. This can be done via any effective method; most commonly infectious wastes are autoclaved or saturated with sterilizing chemicals. It should be noted that whole body parts such as limbs or organs cannot be treated with chemicals, as the chemical cannot penetrate the tissue; incineration is the gold standard for disposal of these wastes. The infectious waste may also be handled by a waste service provider that will transport the waste to a treatment facility, often an incinerator.

As you can see from the dark red overlap in figure 1, it is possible in some cases for a solid waste to be both an infectious waste and a hazardous waste, but this is rare. As an example, this can occur in oncology clinics using specific chemotherapy drugs. If these listed drugs are disposed, they become a listed hazardous waste. If the drug were also mixed with the blood of a patient, such as via backflow through an IV, the resulting material would be both hazardous and infectious waste when disposed. Great care is taken at clinics to avoid this from happening, as the resulting waste can be tricky to dispose of properly.

### **How to Dispose of your Infectious Waste**

Many hospitals, clinics, and doctor's offices have contracted with a waste service provider that specializes in Infectious waste disposal. NDEE only regulates infectious waste as a single type of waste, we do not differentiate between types of infectious waste. However, some waste service providers may request that wastes be separated into different categories for easier disposal. All infectious waste is regulated equally and must either be rendered non-infectious on site before disposal, or transported to a treatment facility.

Some hospitals have their own large-scale autoclave that they use to render their infectious waste non-infectious before sending it to an MSW landfill. Infectious waste that is rendered non-infectious can be disposed at a regular MSW landfill. It is suggested that you test your process and equipment occasionally to ensure that it is 100% effective. This process does not require a permit as long as you

are treating your own waste only. If you accept waste from other locations or businesses you will need to be permitted as a treatment facility by NDEE. You are not allowed to treat your own hazardous waste. Additionally, mixing hazardous and non-hazardous wastes will render all the comingled waste as hazardous; this can be a costly mistake.

### **Household Infectious Waste:**

If you are a household and not a business, you fall under the household waste exemption to regulation. Any waste generated in a household through normal activity can be disposed via regular garbage. In the case of spent sharps, such as insulin injections, the household usually has a sharps box for disposal. But they can use any puncture resistant container that will protect the people picking up the garbage from accidental exposure. The same can be done for other infectious waste. Many people will double-bag soiled tissues or other potentially infectious waste to protect their trash haulers and anybody who might be exposed to their trash. With some precautions, all wastes generated at home can go out with the normal trash.

### **Waste Pharmaceuticals:**

Pharmaceuticals that need to be disposed for any reason should be treated like any other solid waste. They may be hazardous waste (example: Warfarin/Coumadin), and so should have a waste determination. However, unless they have come in contact with some disease vector, they are not infectious waste. Nebraska is currently in the process of adopting the Subpart P – Pharmaceutical rule published by EPA in 2019; however the sewerage ban is already in effect nationwide. Disposal of waste pharmaceuticals via flushing or sewerage is banned; all such waste should be disposed as solid waste. Under no circumstances should you ever place waste medications of any type in a septic system.

Waste pharmaceuticals generated in a household can be disposed similar to household infectious waste. However, there is also a program called [Nebraska MEDS](#) which has drop off locations for pharmaceutical disposal across the entire state.

### **Reaction to Pandemic:**

Now that health professionals are faced with the daily threat of infection from COVID-19, the question becomes whether to change standard operating procedure with regard to Personal Protective Equipment (PPE). Most PPE is not infectious waste; as it never comes in contact with body fluids and does not carry an infectious disease vector. Gloves and other direct contact PPE are already disposed between patients, but some items may see repeated use until they suffer from a biospill. Additionally, some health facilities will segregate their spent PPE into infectious and non-infectious bins. During normal times, with long-established sanitation protocols, this is a practical and effective means of cutting disposal costs while maintaining patient safety. While NDEE can only enforce the regulations as published, we do suggest revisiting your SOPs in the light of recent pushes to increased biosecurity. Many hospitals are now adopting a “single bin” SOP in which all disposable PPE is considered to be an infectious waste regardless of direct physical contact with patients.

### **Covid-19 Antigen Test Kits:**

Many households now have rapid testing kits for Covid-19 infection. These kits usually have a nasal swab, a vial of liquid testing solution, and a test strip to develop results. Due to the contact with human body fluids the swab, the testing liquid, and the test strip are all infectious waste, even if the results are negative. If the test kit is used at home it will fall under the household waste exemptions and can be placed in the regular trash. However, test kits used in the workplace are not exempt and must be

disposed of properly. This can be done through an infectious waste service provider, or by rendering the kits non-infectious before disposal.

### **Discarded face masks:**

Much like PPE mentioned above, a used or dirty mask is not considered to be an infectious waste until it suffers from a biospill. Dry masks can be disposed of in the regular trash. Masks that are heavily soiled may need to be managed with other infectious waste.

### **Questions:**

If you have any concerns or questions about wastes generated in association with Covid-19 testing or treatment, please feel free to email or call the numbers below.

### **RESOURCES:**

- NDEE Home Page <http://dee.ne.gov/>
- Nebraska MEDS: [Nebraska MEDS Program](#)

### **Contacts:**

- NDEE Front Desk (402) 471-2186
- NDEE Toll Free Number (877) 253-2603
- NDEE Hazardous Waste Compliance Assistant (402) 471-8308
- Email questions to: [NDEE.moreinfo@nebraska.gov](mailto:NDEE.moreinfo@nebraska.gov)

### **NDEE Publications:**

- Environmental Guidance Document – “[Comparison of Hazardous Waste Generator Requirements](#)”
- Environmental Guidance Document – “[Conditionally Exempt Small Quantity Generators](#)”
- Environmental Guidance Document – “[Handling Household Medical Waste](#)”
- Environmental Guidance Document – “[Medical Waste Disposal](#)”
- Environmental Guidance Document – “[Waste Determinations & Hazardous Waste Testing](#)”  
*Guidance is available on the NDEE Home Page under “Publications & Forms”.*
- [Title 128 – Nebraska Hazardous Waste Regulations](#)
- [Title 132 – Integrated Solid Waste Management Regulations](#)  
*Titles are available on the NDEE Home Page under “Laws/Regs & EQC”, “Rules & Regulations”*

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