GBRMC

Biological Waste Disposal

Student Guide

2012

GLOBAL BIORISK MANAGEMENT CURRICULUM


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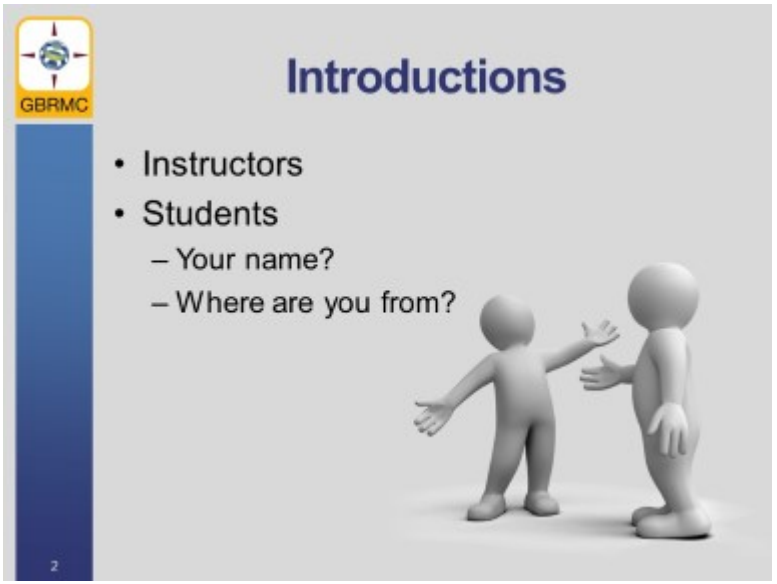
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Introductions
• Instructors
• Students
– Your name?
– Where are you from?
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Action Plan

By the end of this lesson, I would like to:					
KNOW		FEEL		BE ABLE TO DO	

Your learning doesn't stop with this lesson. Use this space to think about what else you need to do or learn to put the information from this lesson into practice.

What more do I need to know or do?	How will I acquire the knowledge or skills?	How will I know that I've succeeded?	How will I use this new learning in my job?

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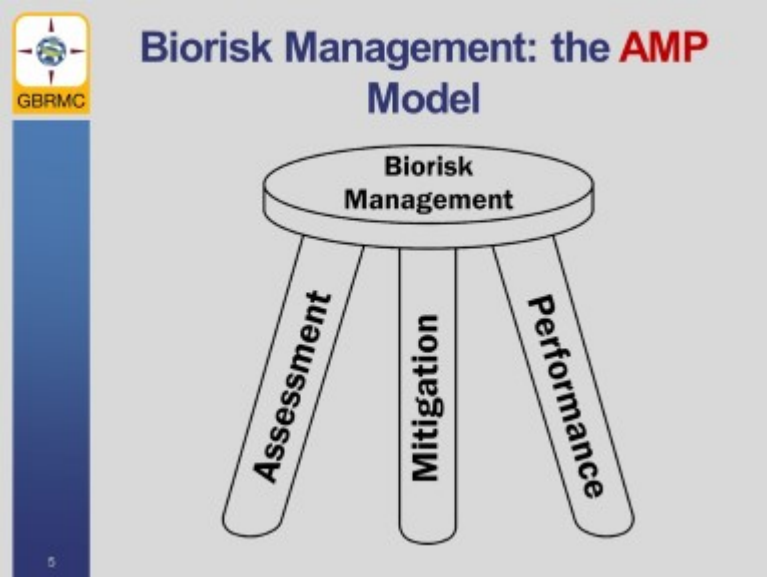
Do you have personal objectives you would like to accomplish? If so, jot them down!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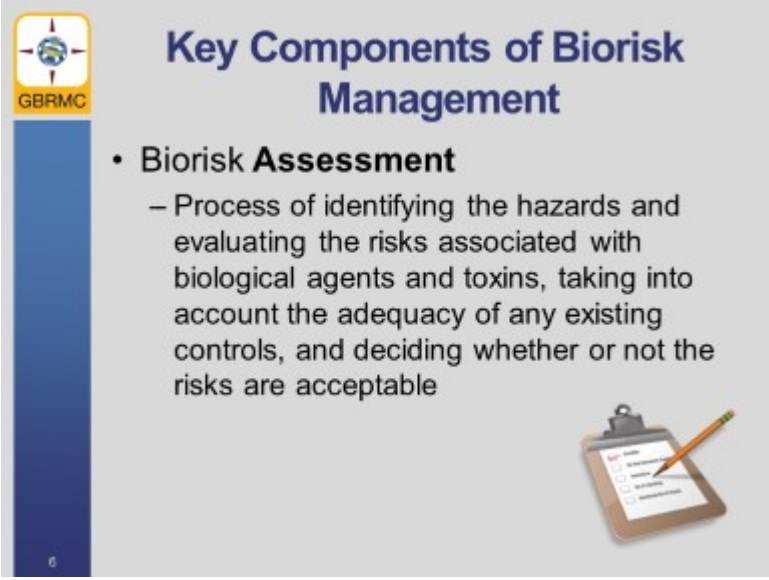
Biorisk Management: the AMP Model
Biorisk Management
Assessment
Mitigation
Performance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Key Components of Biorisk Management
• Biorisk **Assessment**
– Process of identifying the hazards and evaluating the risks associated with biological agents and toxins, taking into account the adequacy of any existing controls, and deciding whether or not the risks are acceptable

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Key Components of Biorisk Management

- Biorisk **Mitigation**
  - Actions and control measures that are put into place to reduce or eliminate the risks associated with biological agents and toxins

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Key Components of Biorisk Management

- Biorisk **Performance**
  - Improving biorisk management by recording, measuring, and evaluating organizational actions and outcomes to reduce biorisk.

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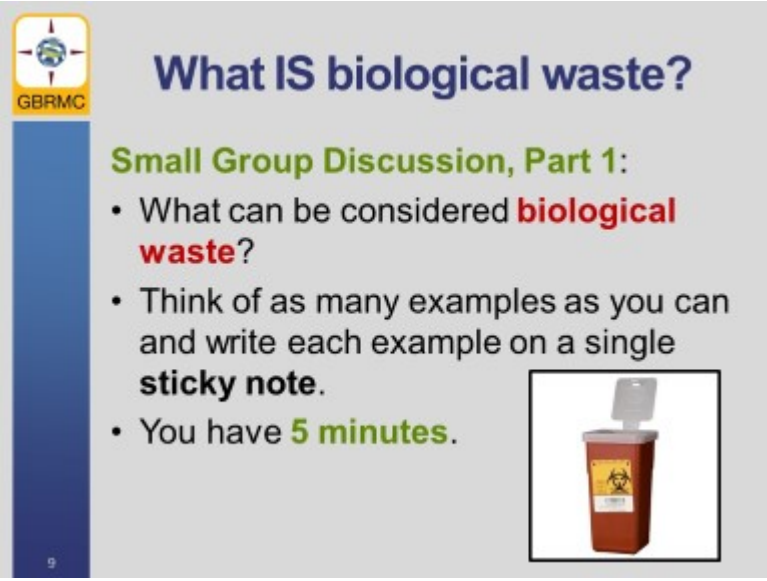

What is biological waste?

What definition of biological waste did you use to complete this exercise?

What materials did you consider biological waste?

Categories of Biological Waste

- Solid waste (non-sharp)
- Sharps
- Pathological Waste
- Liquid Waste
- Mixed Waste

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What is biological waste?

Who Defines Biological Waste?

- Countries, States (Regulatory Agencies)
  - Laws
  - Regulations
  - Guidance
- Institutions
  - Policies

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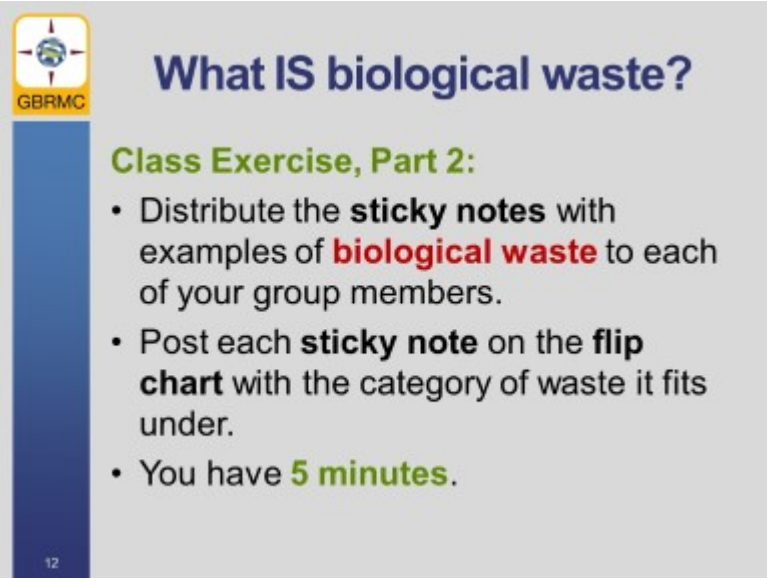
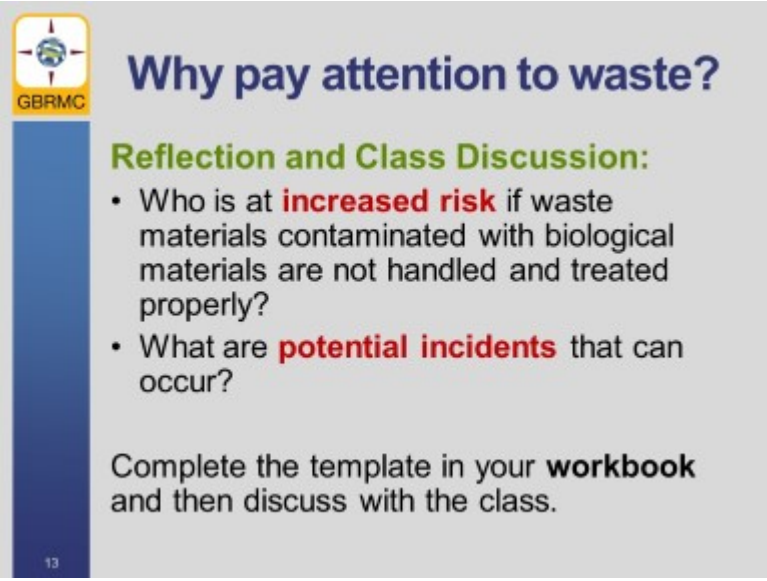


What is biological waste?

What were your categories?

How and why did you choose these?

How does a sensible categorization process aid disposal management processes?

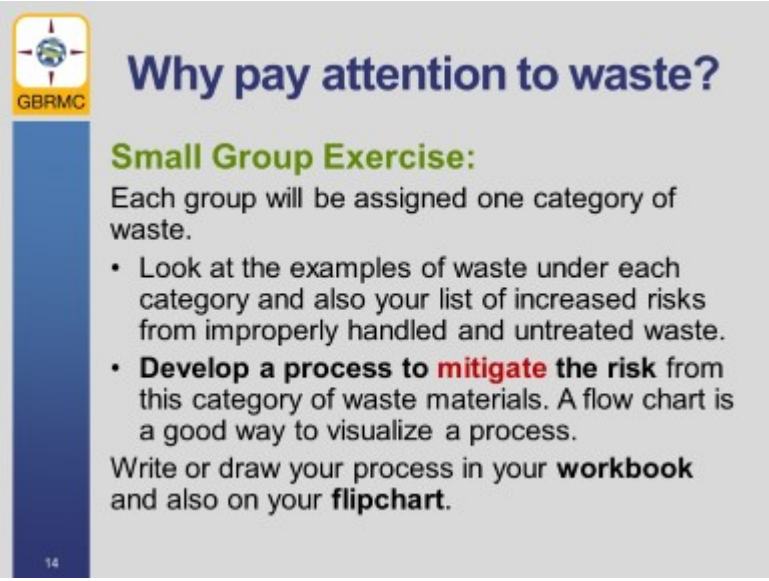


What is biological waste?

Who is put at risk if contaminated waste materials are handled improperly?

List some potential incidents that may occur:

What is biological waste?



List some mitigation options: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Steps in Waste Management
• Segregation
• Collection
• Storage
• Transport
• Treatment
• Final Disposal
Look at your process. Are all these components included? If not, add them into your process.
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Biological Waste Disposal

Steps in Biological Waste Management

Biological Waste Disposal

Steps in Biological Waste Management

Why does the nature of the waste material dictate the type of storage?

How might transport requirements for waste differ depending on where and how long the transport occurs?


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Waste Treatment Options
• Cradle-to-grave responsibility applies
• Do it yourself …
– Standard practice for liquids
– Autoclaves and other solid waste treatment devices generally require permitting, usually by local entity
– Shredding probably required
• Have someone else do it …
– Very common, few contractors
– Less liability but requires due diligence
– Likely lower cost option unless quantities are large
– Require your transporter to:
• generate manifest of types and amounts of biowaste transported
• provide certificate of destruction
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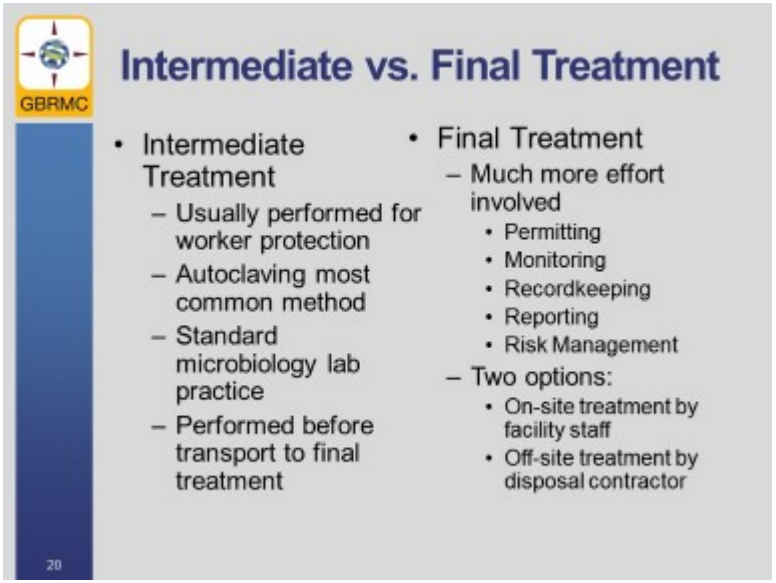
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Intermediate vs. Final Treatment
• Intermediate Treatment
– Usually performed for worker protection
– Autoclaving most common method
– Standard microbiology lab practice
– Performed before transport to final treatment
• Final Treatment
– Much more effort involved
• Permitting
• Monitoring
• Recordkeeping
• Reporting
• Risk Management
– Two options:
• On-site treatment by facility staff
• Off-site treatment by disposal contractor
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Treatment Technologies

- Autoclave
- Incineration
- Chemical treatment
- Microwave
- Alternative technologies
  - irradiation
  - high-temp pyrolysis (vitrification)
  - macrowave
  - others

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Treated Biological Waste

- Biological solid waste that has been treated by an acceptable method is considered non-contaminated and non-hazardous; the liquid can be sewer-disposed and the solids put in sanitary landfills.
- Most localities require that decontaminated medical waste (especially sharps) be made unrecognizable before being landfilled. A shredding step must be included after treatment.

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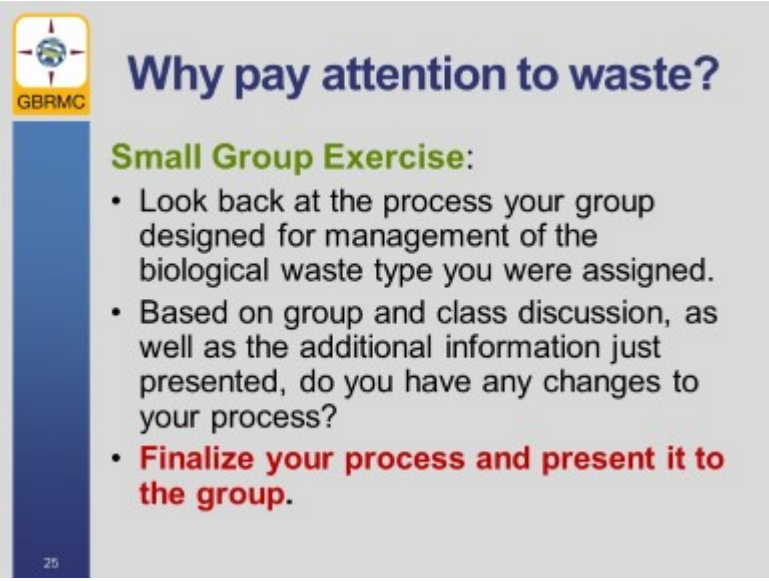
What is pathological waste treatment?

List some factors that can change pathological waste treatment:

Remember to beware of autoclaving liquids!!

Why? What kind of hazard(s) does that create?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Why pay attention to waste?
Small Group Exercise:
• Look back at the process your group designed for management of the biological waste type you were assigned.
• Based on group and class discussion, as well as the additional information just presented, do you have any changes to your process?
• Finalize your process and present it to the group.
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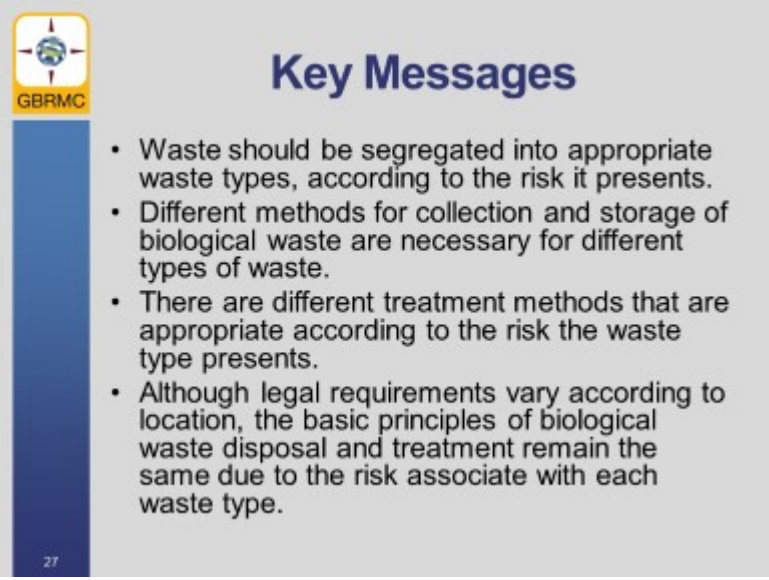
What did you learn?

What does it mean?

How can/will you apply it?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Key Messages
• Waste should be segregated into appropriate waste types, according to the risk it presents.
• Different methods for collection and storage of biological waste are necessary for different types of waste.
• There are different treatment methods that are appropriate according to the risk the waste type presents.
• Although legal requirements vary according to location, the basic principles of biological waste disposal and treatment remain the same due to the risk associate with each waste type.
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Use space on back, if needed