



Biorisk Mitigation Strategies

Student Guide – Draft – October 2011



Introductions

- Instructors
- Students
 - Your name?
 - Where are you from?
 - Name one thing you did today to protect yourself from changing temperatures (e.g., keep yourself warm or cool).



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Lesson Objectives, 1

- Understand the role of mitigation in the AMP model for biorisk management
- Define mitigation
- Appreciate that mitigation must be based on a thorough risk assessment

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Lesson Objectives, 2

- List the categories of control measures and describe the hierarchy of controls
- Understand the advantages and limitations of each type of biorisk mitigation measure
- Be prepared to learn more details about specific mitigation strategies

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Action Plan

By the end of this lesson, I would like to:

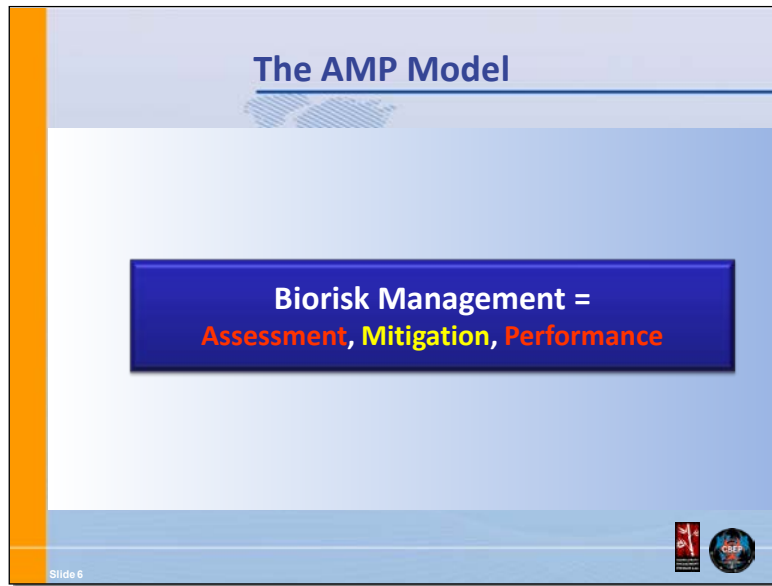
KNOW		FEEL		BE ABLE TO DO	
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Your learning doesn't stop with this lesson. Use this space to think about what else you need to do or learn to put the information from this lesson into practice.

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?



Biorisk Mitigation Strategies



Review of Biorisk Management

Describe or define the following and how it relates to the AMP model:

- Assessment
- Mitigation
- Performance

Biorisk Mitigation Strategies

Risk Mitigation

- **In your groups**, discuss the following:

What is Biorisk Mitigation?
- Based on your discussion, develop a definition for “biorisk mitigation” and write it on your flip-chart.
- You have **5 minutes** for this activity



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What is biorisk mitigation?

Please answer the following question(s):
What is Biorisk Mitigation?

If possible, please provide an example of applied biorisk mitigation strategy and the AMP model from your experience.

Biorisk Mitigation Strategies

What is biorisk mitigation?

Why Risk Assessment?

- Continue working in your groups. Discuss these questions and write down the answers in your workbooks:
 - Why is it important to conduct a **Risk Assessment** prior to implementing mitigation controls?
 - What outcomes would you expect when mitigation is based on a thorough risk assessment? What would you expect if mitigation is implemented without conducting a risk assessment?

Take about **5 to 10 minutes** and be prepared to share your answers with the class.

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Please answer the following questions:

Why is it important to conduct a risk assessment prior to implementing mitigation controls?

What outcomes would you expect when mitigation is based on a thorough risk assessment?

What possible results might you expect if mitigation is implemented uninformed by a risk assessment? Why?

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What is biorisk mitigation?

Group Exercise Step 1

- Using your risk assessment scenario, identify at least ten different risk mitigation measures. Measures should address both safety and security.
- Use a post-it note for each mitigation measure you identify
- Report your answers to the class

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Write at least ten different risk mitigation measures, each on a separate sticky note. Try to be specific, writing “wear two pairs of gloves” instead of the more general “PPE”.

Please remember that your proposed measures should cover both safety *and* security.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

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Categories of Control Measures

- **Engineering Controls:** Physical changes to work stations, equipment, materials, production facilities, or any other relevant aspect of the work environment that reduce or prevent exposure to hazards
- **Administrative Controls:** Policies, standards and guidelines used to control risks
- **Practices and Procedures:** Processes and activities that have been shown in practice to be effective in reducing risks
- **Personal Protective Equipment:** Devices worn by the worker to protect against hazards in the laboratory

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Biorisk Control Measures

Group Exercise, Step 2

Place your *sticky notes* under the appropriate columns on the flip chart:

Engineering Controls	Administrative Controls	Practices and Procedures	Personal Protective Equipment (PPE)

Report your results to the class

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What are other examples of substitution?

Elimination or Substitution

- Removing the hazard, not working with the agent or replacing the hazard with something less dangerous




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Biorisk Mitigation Strategies

Biorisk Control Measures

Group Exercise Step 3

- Considering these categories of **mitigation control measures**:
 - Elimination/Substitution* *Administrative Controls* *PPE*
 - Engineering Controls* *Practices & Procedures*
- Identify their advantages and limitations or disadvantages
- Report your findings to the class



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Please discuss the advantages and limitations of for each category of mitigation control measures. Advantages could be recorded on one color of post-it, disadvantages on another, written here for your own recollection.

Advantages

Elimination/Substitution:

Administrative Controls:

PPE:

Engineering Controls:

Practices & Procedures:

Disadvantages:

Elimination/Substitution:

Administrative Controls:

PPE:

Engineering Controls:

Practices & Procedures:

Advantages and Limitations

Control Measure	Advantages	Disadvantages
Elimination or Substitution	Immediate reduction of risk	Not always available or possible
Engineering	Efficient, eliminates hazard	Cost, complexity
Administrative	Authority approach	Indirect approach, primarily addresses the human factor
Practices & Procedures	SOP based (standardized approach)	Training and supervision requirements
PPE	Ease of use, relative cost	Does not eliminate hazard, PPE fails exposure happens, uncomfortable, limits ability, only protects the user

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Biorisk Control Measures

Group Exercise Step 4

- Considering these categories of **mitigation control measures**:

*Elimination/Substitution Administrative Controls
PPE*

Engineering Controls Practices & Procedures

- Prioritize the four types of controls from the perspective of effectiveness

*Most
Effective*

1

2

3

4

5

*Least
Effective*

- Report your findings to the class



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1. Number five post-it notes 1, 2, 3, 4, 5. Consider the general effectiveness of each category of control measure.
2. Discuss and rank the categories as a group, then place the appropriate number on the chart/column associated with their chosen rank.

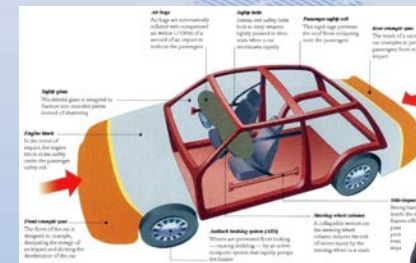
Hierarchy of Controls

- Elimination or Substitution
 - Engineering Controls
 - Administrative Controls
 - Practices and Procedures
 - Personal Protective Equipment
- Control methods at the top of the list are, **in general**, more effective and protective than those at the bottom.*



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Car Safety vs. Motorcycle Safety



Car safety is all about engineering systems

Motorcycle safety is all about PPE




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Biorisk Mitigation Strategies

Identifying controls

- Watch the following video of an incident/emergency response scenario
- Identify and write down as many different mitigation measures as you can
- Organize these measures under one of the five categories of controls
- *[link to videoclip – make sure it is included in the folder so it will play] – working on reconfirmation of permission to use!*



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Identifying Mitigation Strategies

Identify and write down as many different mitigation measures as possible:

Organize these measures under each of the five categories.

Biorisk Mitigation Strategies

Review of Risk Mitigation

Review

To wrap-up, let's discuss what we learned about risk mitigation strategies.

What did we learn?

What does it mean?

Where do we go from here?



Wrap-Up & Summary

Please reflect:

What are the categories of risk mitigation strategies? How does risk assessment inform your choice of which categories to use?

Why is it important to know the advantages and disadvantages of each category?

What is one thing you will add or do differently in your work, based on this information on risk mitigation strategies.

Biorisk Mitigation Strategies

Action Plan				
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KNOW		FEEL		BE ABLE TO DO
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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?	

Wrap-Up & Summary

Thank you! Please remember to complete your action plan. It is helpful to write down a date that you hope to complete your actions.

Also, please complete the evaluation form.
