SAND2013-2747P

Introduction to Biorisk Management Performance

Introductions

- Instructors
- Students
  - Your name?
  - Where are you from?

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?

Use space on back, if needed

Key Messages

- Performance is a critical part of the AMP model. Understanding performance ensures that the mitigation is appropriate and working as intended. It also leads to continual improvement of the system.

- Understanding performance involves evaluating success and shortcomings, and setting new goals for continual improvement and thus leads back to Assessment.

- There are many benefits to measuring performance: record keeping, benchmarking, identify areas for improvement, provide assurance that risk is acceptable, ensure maintenance and sustainability, save money and time, enable resource prioritization, helps prevent accidents, etc.

- Biorisk management performance should be measured and evaluated against established goals and objectives.

Biorisk Management: the AMP Model

Biorisk Management =
Assessment, Mitigation, Performance

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

Key Components of Biorisk Management

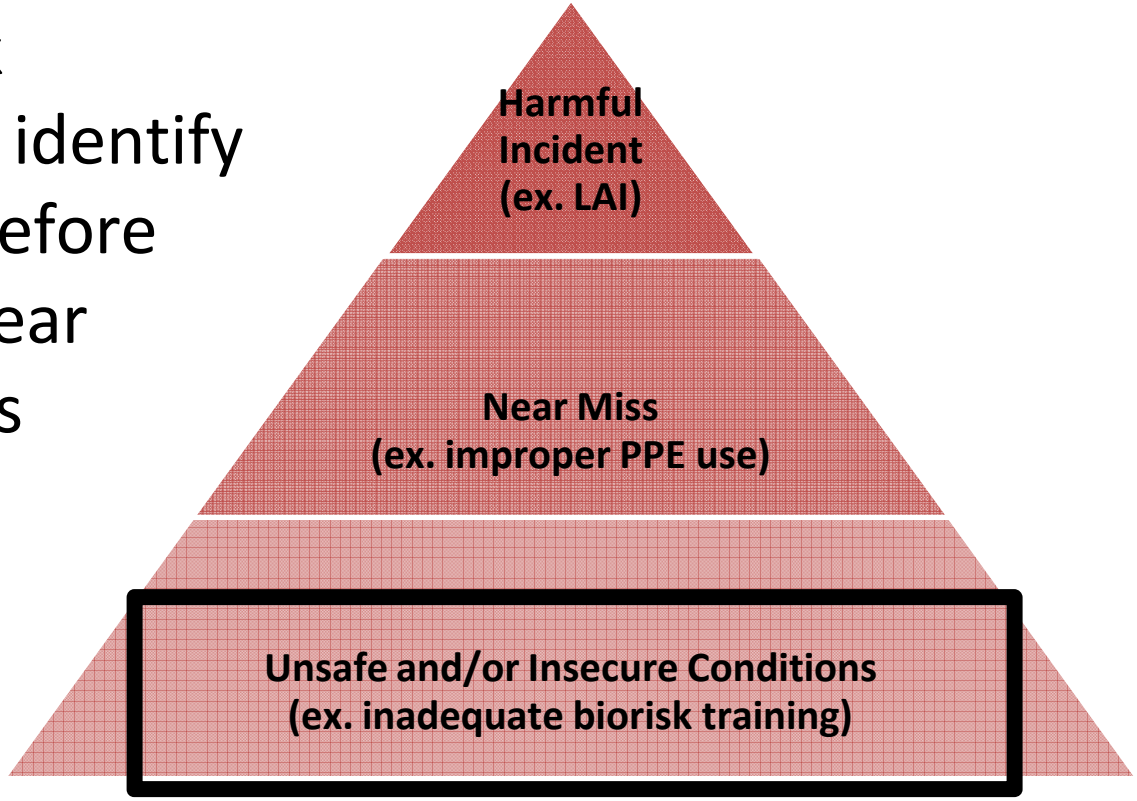
- Biorisk **Mitigation**
  - Actions and control measures that are put into place to reduce or eliminate the risks associated with biological agents and toxins

Biorisk Management: The AMP Model

Biorisk Management =
Assessment, Mitigation, Performance

The Biorisk Pyramid

The goal of biorisk management is to identify and reduce risks before they evolve into near misses or incidents



Performance – Access Control Video

Activity:

Background Info:

- This is a secure research facility.
- Risk assessment determined **high likelihood for outside intruder**.

Watch the video and note the advanced mitigation measures taken and think about the following question:

Did the mitigation work?

Be prepared to discuss with the rest of the class.

Activity: Defining Performance

- **Group activity**
- Take 5 minutes to work with your group to define "**biorisk management system performance**"
  - Write your answers on sticky notes
  - Place your sticky notes on the central flip chart

The Concept of Performance

- **Biorisk Management System Performance:**
  The way in which a biorisk management system actually functions to manage or minimize biorisk.

Performance

Questions:

Do all cars perform equally well?

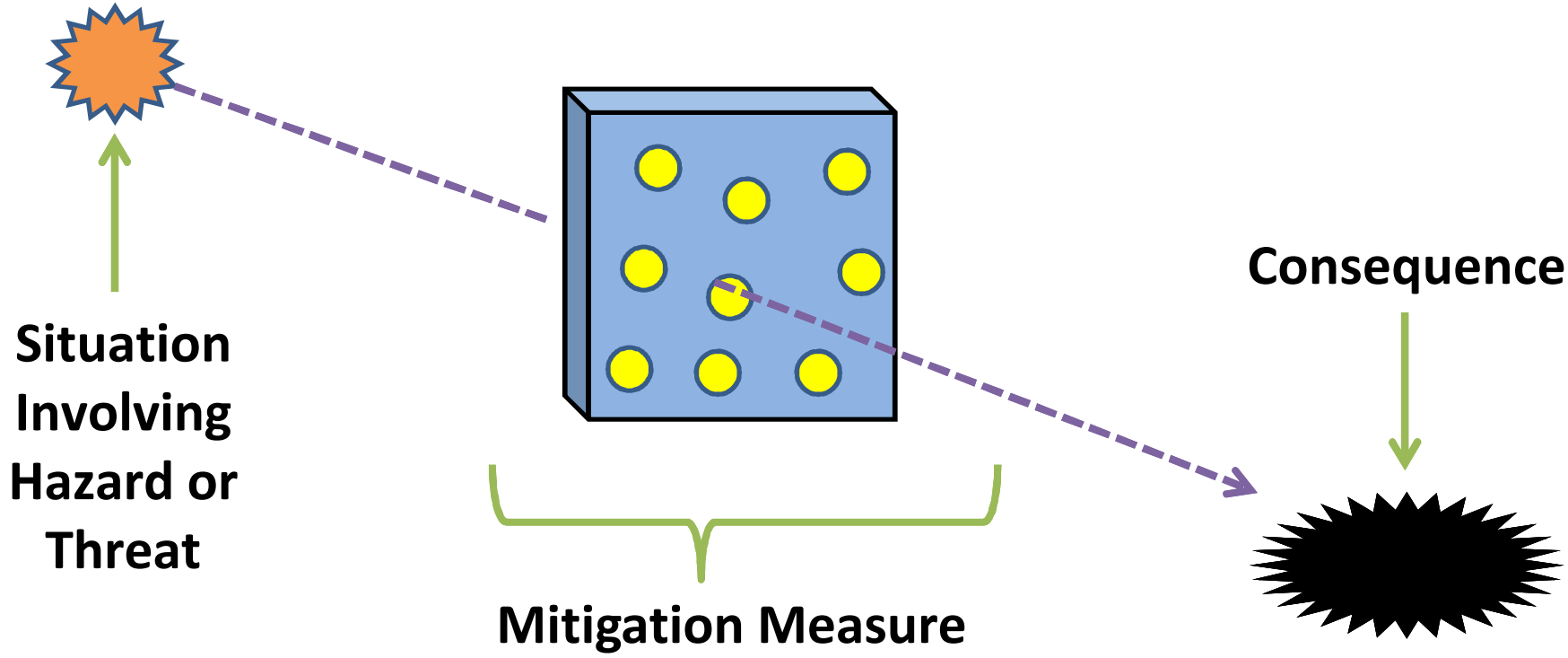
What are some signs that indicate how well a car is performing?

The Concept of Performance

- **Characteristics of BRM System Performance:**
  - BRM **performance** is a result of all the activities and efforts of ALL people in a facility
  - Actual BRM system performance may **not** match the planned level of risk management effectiveness
    - **Performance measurement – assess the differences**
  - Performance changes over time: a sustained level of performance requires a continual effort

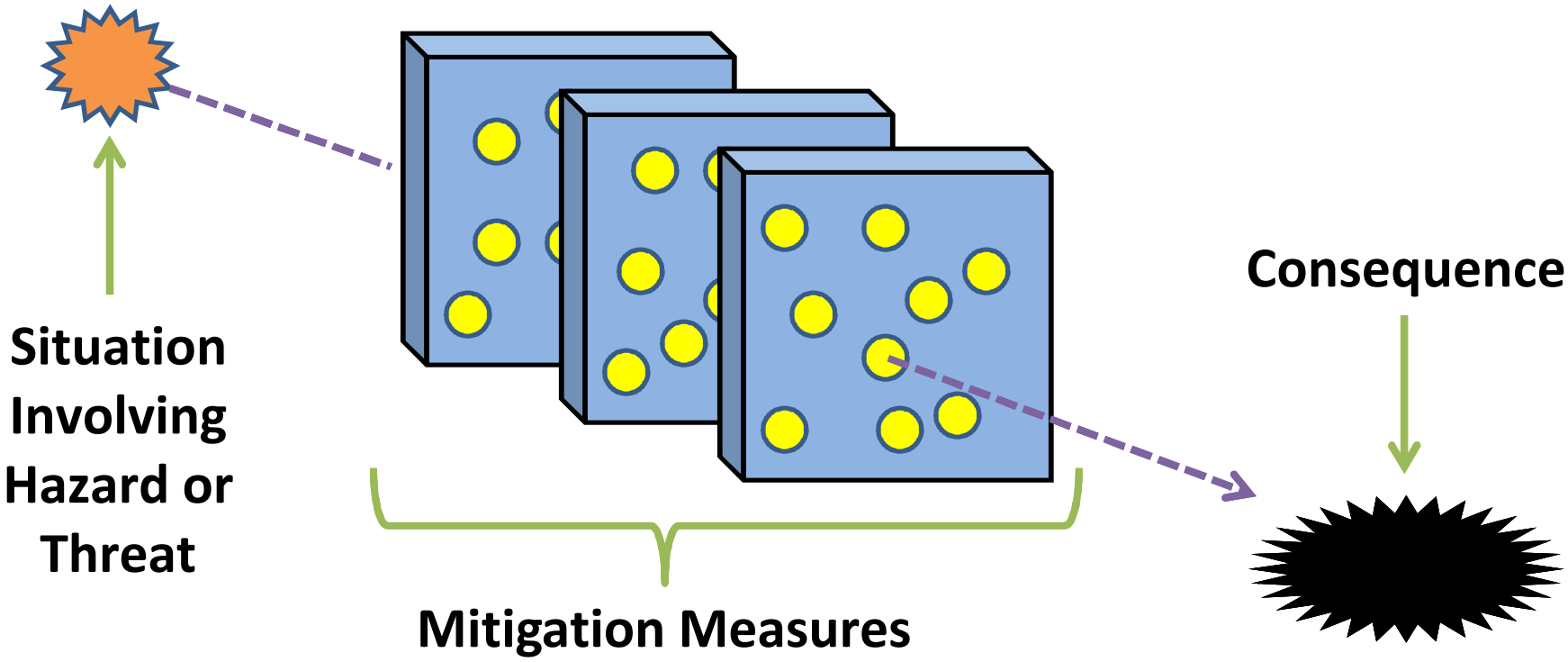
Mitigation is Not Perfect

Implementing one mitigation measure alone, has “holes” or weaknesses that may enable undesired consequences.



Multiple Mitigation Model

Implementing multiple layers of mitigation measures can greatly reduce risk likelihood, but not eliminate the risk.



Understanding Performance

- Where are the holes in the system “layers”?
- How “big” are these holes? Have they grown larger over time?
- Are there new holes forming over time?
- Is the risk management system working as intended to obstruct potential paths leading to adverse consequences?

Group Exercise

Review the performance scenario

- **Identify the performance issues/problems in the scenario and record them**

Be prepared to present to the class

Performance Scenario

An employee of a waste transport and disposal company was diagnosed with Tuberculosis. He reported that he contracted TB from biohazard waste bags from the local "TB Reference Laboratory," which he knew regularly works with TB. After an investigation, he acknowledged that, during the same period, he visited relatives and went to public places in a country where TB was endemic. One of his relatives in that country had just started TB treatments when he had visited. The laboratory did not know about his infection until it was notified of this person's pending lawsuit, which claimed that the facility had not sufficiently treated the waste, and that the waste leaked from the bags that he carried, causing his exposure and infection. Laboratory tests on samples from his lungs did not clearly point to a laboratory-based exposure.

Records of autoclave use were kept by the lab which included date, time, temperature and pressure of each autoclave run. However, upon review of lab logs, including the period under question, some of the records were missing. Staff seemed to think that this may have been because the autoclave printer ran out of paper on those days or the records may have been misplaced or lost.

Six months prior to this incident, during an internal audit, it was recognized that autoclave printout records were kept in a drawer that was also used to store disposable laboratory supplies. The laboratory manager determined that these records should be better organized and stored in a more appropriate and secure location. She assigned this task to one of the technicians. However, before the technician could organize and secure the records, he was transferred to another laboratory and no follow up was made.

The laboratory reported that they occasionally (three or four times a year) performed a validation of the autoclave using *B. thermophilus* spore strips but a review of their records indicated that one in three of these validations showed positive results (spore culture growth after autoclaving).

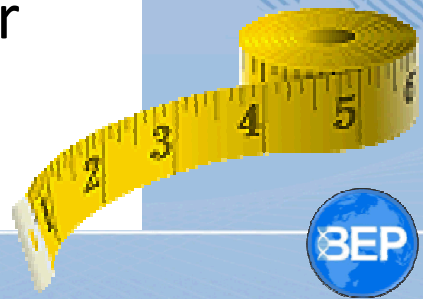
The lawsuit resulted in a $5 million fine for the laboratory because the laboratory could not prove conclusively that the waste was treated appropriately as stipulated in the contract with the waste transport and disposal company.

Measuring Performance

Group Activity:

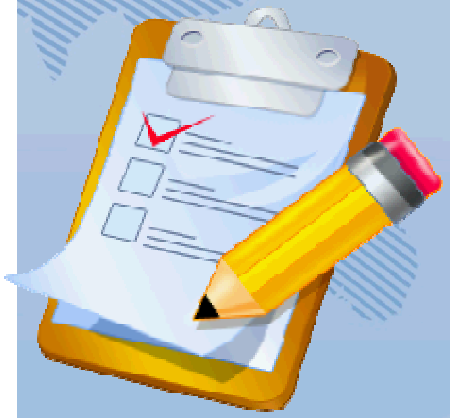
Question: What are the benefits of measuring **biorisk management system performance**?

In your groups, please spend **5 minutes**, to discuss the benefits of measuring biorisk management system performance. Think about how an **understanding of performance** may help to **improve** a biorisk management system. Write your group's answers on your flip chart.



Measuring Performance

- Determine which parts of the BRM system are meeting stated goals or benchmarks
- Provides a demonstrable record of system performance
  - May support facility certification/accreditation process
- Helps identify areas for improvement using a consistent framework
- Provides assurance that the risk is acceptable
- Facilitates maintenance and sustainability of the system
- Can save money and time (by enabling resource prioritization)
- Helps to **prevent incidents**



Activity: Measuring Performance

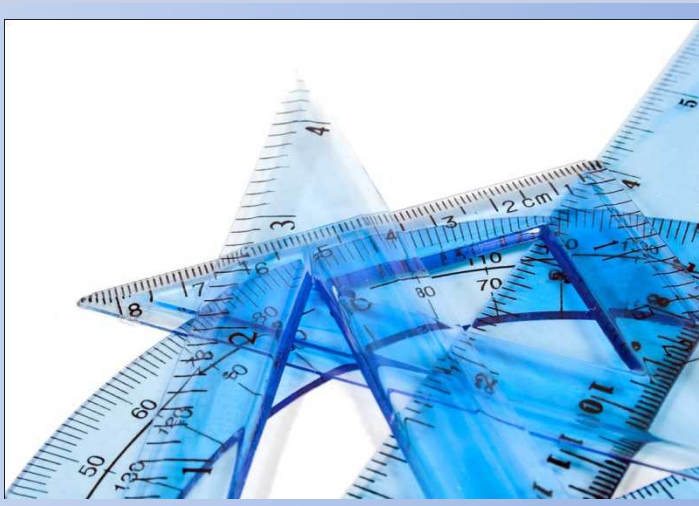
Group Activity:

In your group, please take **5 minutes** to identify some methods that may be used to measure the performance of biorisk management systems.

List each method on a sticky-note and place them on your flip chart.

Potential Measurement Methods

- Audits and Inspections
- Performance Indicators
- Observations
- Interviews
- Surveys and Questionnaires



Performance and CWA 15793:2011

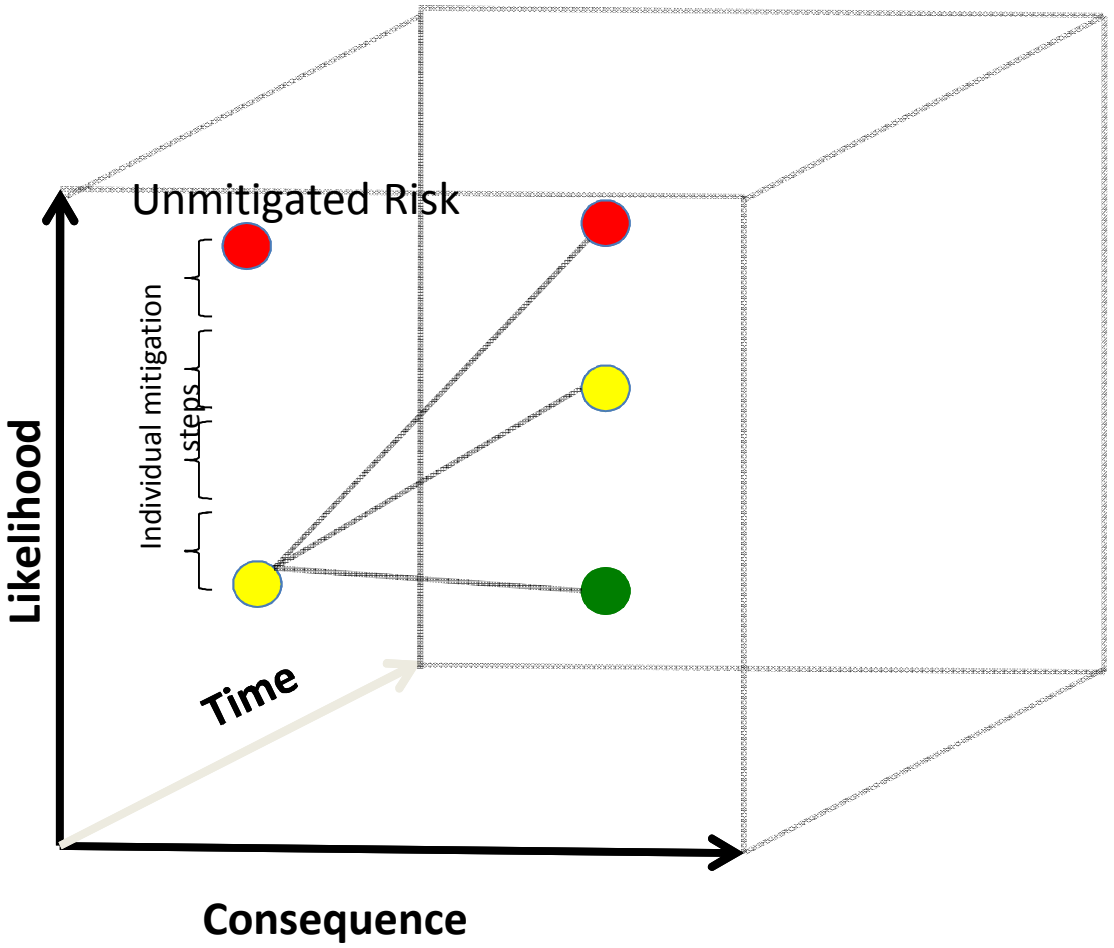
- **CWA 15793 4.5.1 Performance measurement and analysis**
  - ***"The organization shall ensure that appropriate data are determined, collected and analysed to assess the suitability and effectiveness of the biorisk management system and to evaluate where continual improvement of the system can be made."***

Measuring Performance

Question:

How can understanding performance affect risk over time?

Measuring Performance



Performance Summary

How does performance improve biorisk management?

- It lets you know that your system works, is sustainable, and that the risk is acceptable.
- Performance leads to continual improvement by identifying gaps and measuring whether BRM goals are met. Performance includes establishing new goals and benchmarks.
- **Assessment** identifies and characterizes the risk. **Mitigation** reduces the risk. **Performance** is how the system functions. It indicates whether or not the mitigation is working and leads back to Assessment in a continual improvement loop.

Final Review

Review

For **10 minutes**, let's discuss what we have learned about **Introduction to Biorisk Management Performance**.

What did we learn?	What does it mean?	Where do we go from here?

Key Messages

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Thank You!

Don't forget to complete your evaluation!