GBRMC

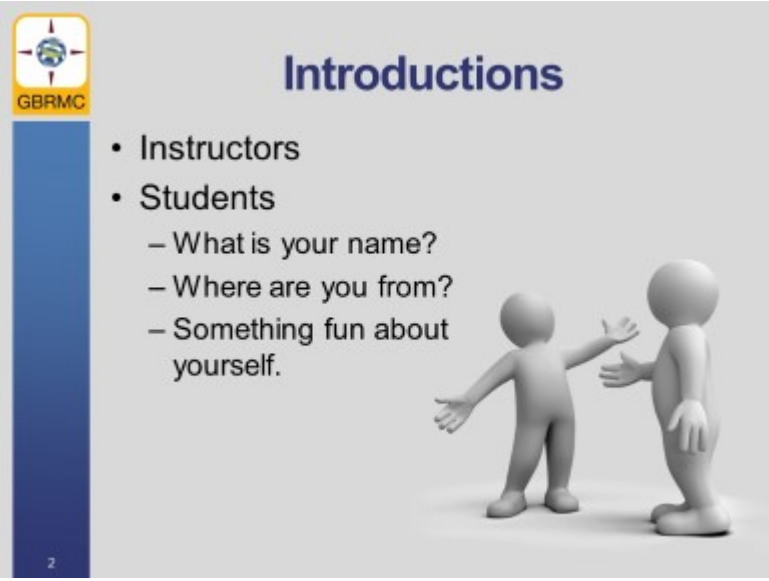
Developing, Conducting, and Maintaining a Hazard Inventory

Student Guide

2012

GLOBAL BIORISK MANAGEMENT CURRICULUM

Welcome to Developing, Conducting, and Maintaining a Hazard Inventory!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Introductions
• Instructors
• Students
– What is your name?
– Where are you from?
– Something fun about yourself.
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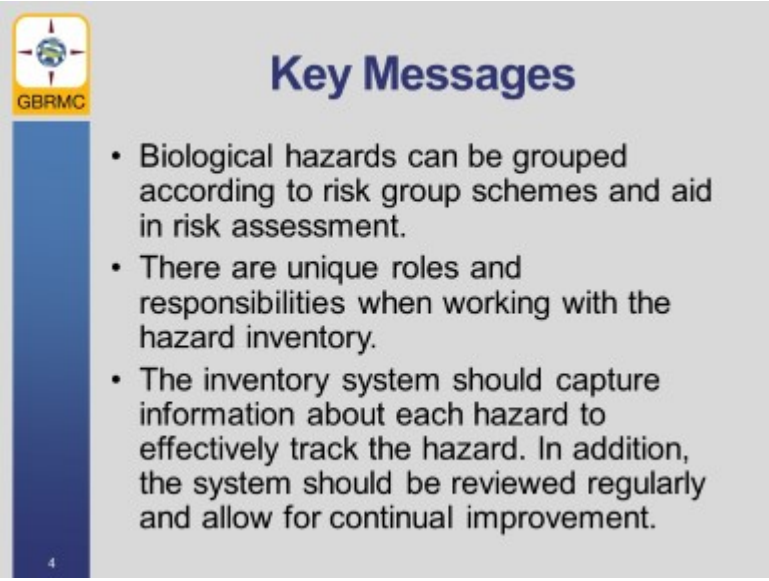
Action Plan

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?

3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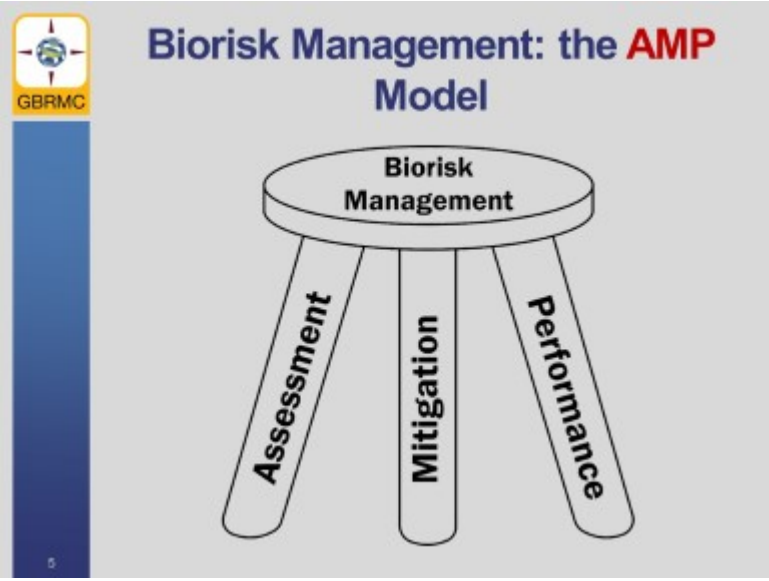
Key Messages
• Biological hazards can be grouped according to risk group schemes and aid in risk assessment.
• There are unique roles and responsibilities when working with the hazard inventory.
• The inventory system should capture information about each hazard to effectively track the hazard. In addition, the system should be reviewed regularly and allow for continual improvement.
4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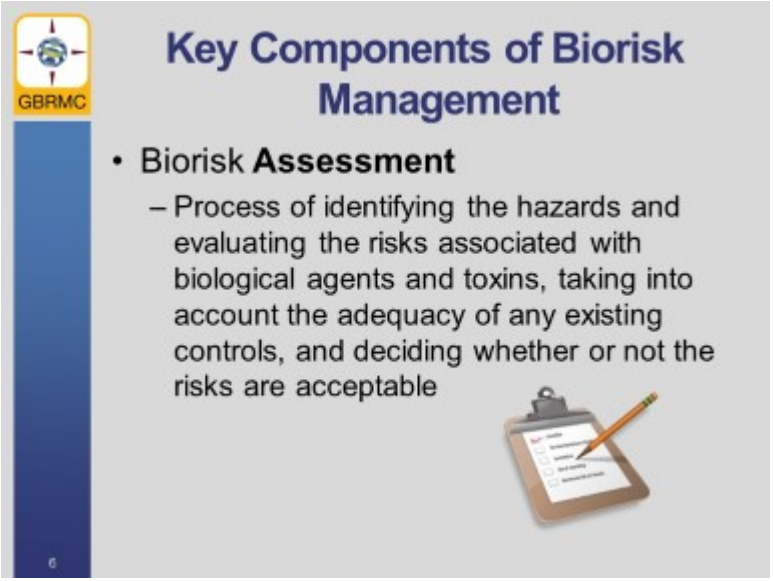
Biorisk Management: the AMP Model
Biorisk Management
Assessment
Mitigation
Performance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Key Components of Biorisk Management
• Biorisk **Assessment**
– Process of identifying the hazards and evaluating the risks associated with biological agents and toxins, taking into account the adequacy of any existing controls, and deciding whether or not the risks are acceptable

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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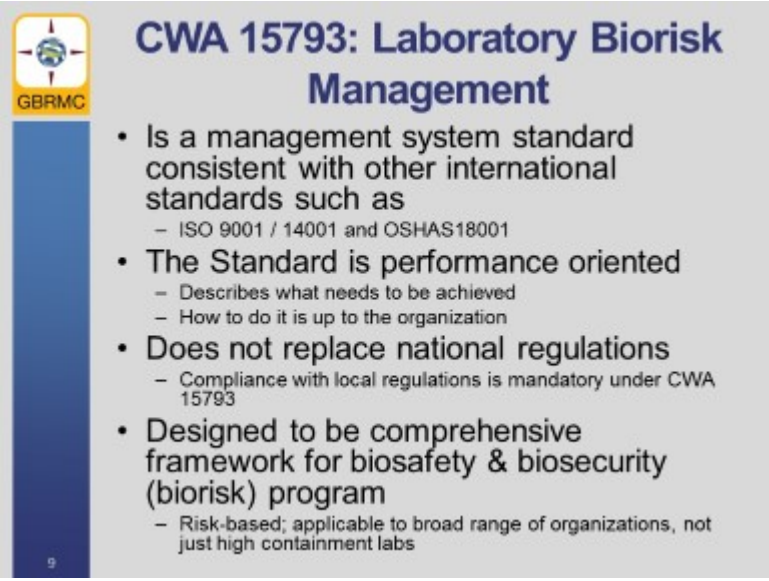
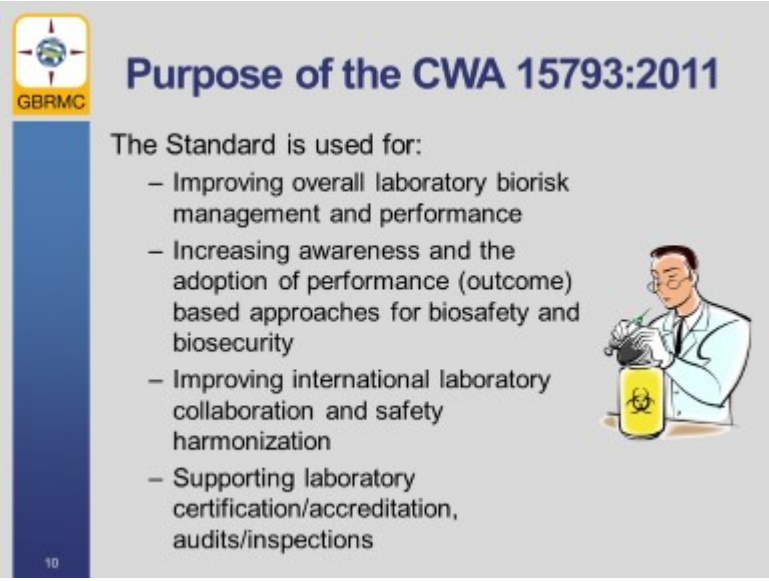
Key Components of Biorisk Management

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

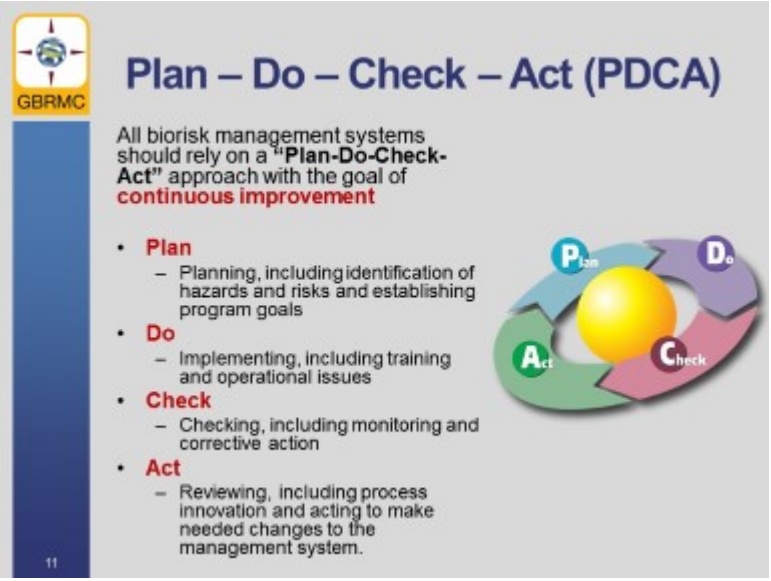
8



What is the CWA 15793 and how is it useful?



What is the purpose of the CWA 15793?



Continual improvement through a cycle of planning, implementing, checking, and review and evaluation.

List additional examples for:

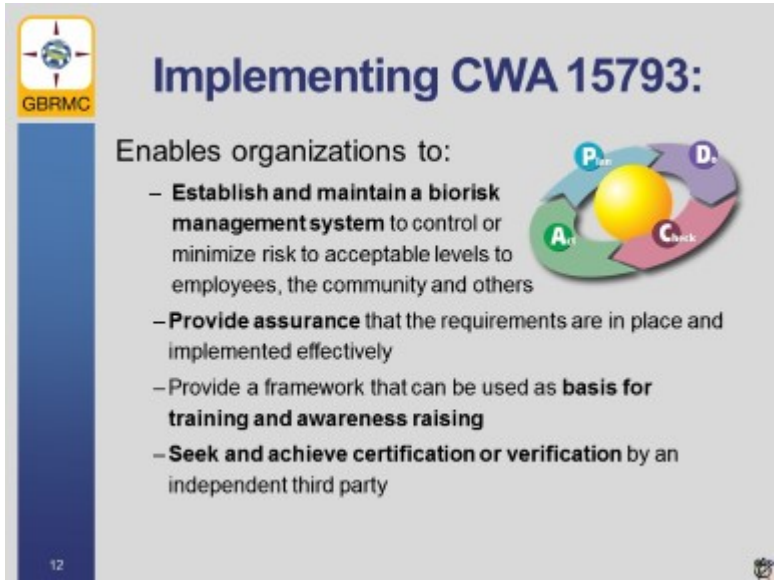
Plan –

Do –

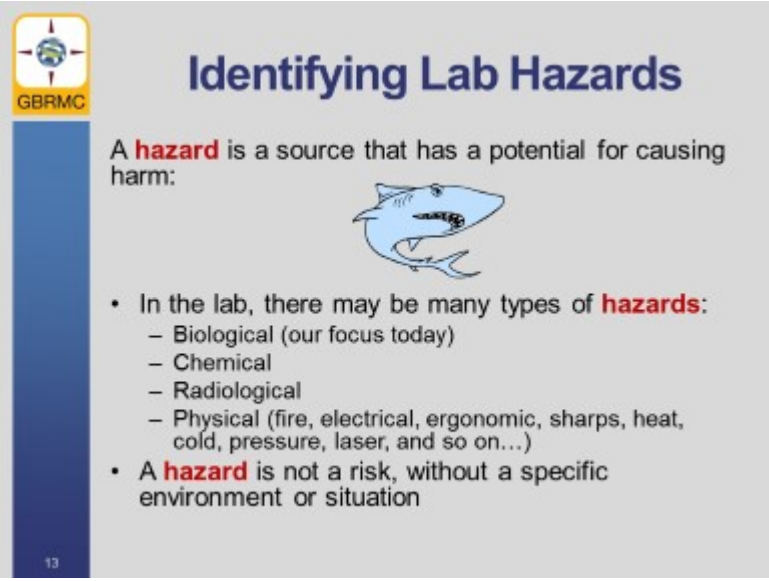
Check –

Act –

Developing, Conducting, & Maintaining a Hazard Inventory

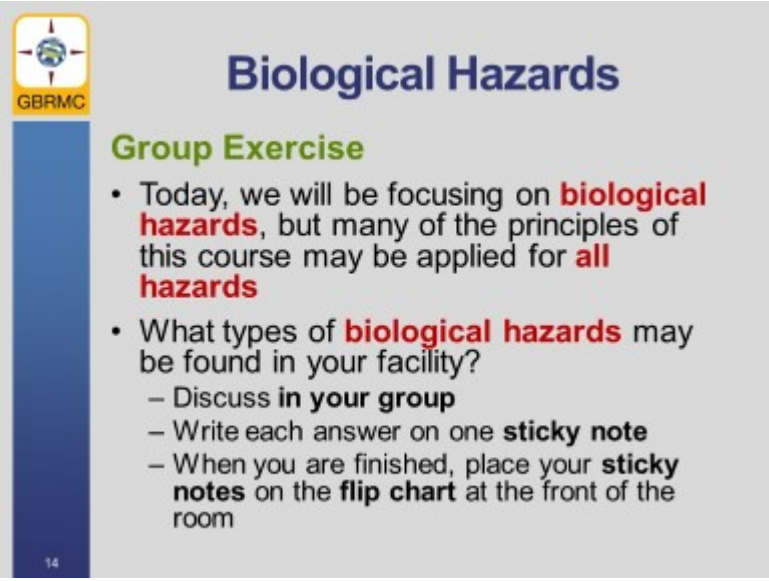


Benefits of implementing the CWA include:



Define what a hazard is:

Note that there are many types of hazards in the laboratory



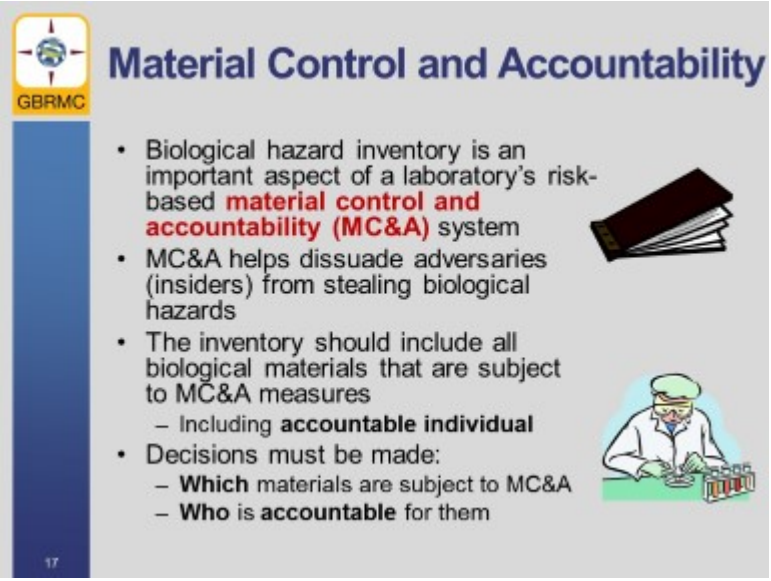
What types of biological hazards may be found in your facility?

(You may wish to record your answers here along with on the provided post-it notes)

Why do we need to identify all the biological hazards in our laboratories?

Hazard identification is necessary in order to perform a proper assessment of the risk posed by the biological hazards in the laboratory.

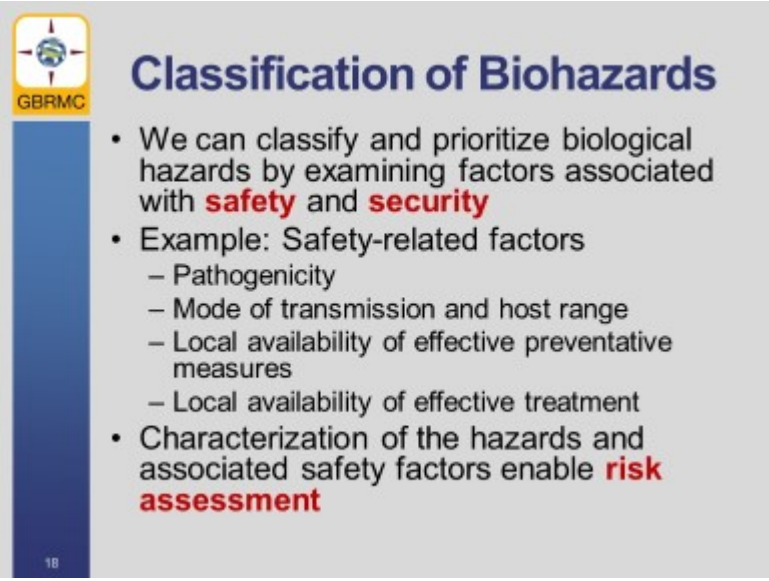
Developing, Conducting, & Maintaining a Hazard Inventory



The objective of MC&A measures is to dissuade adversaries (especially insiders) from stealing or misusing the hazardous biological materials at your facility.

Control – ensures that material is confined to known, legitimate use

Accountability – ensures oversight by formally associating materials with people and information records



Categorize biological hazards according to their characteristics.

- Characteristics associated with biosafety:

- Characteristics associated with biosecurity:

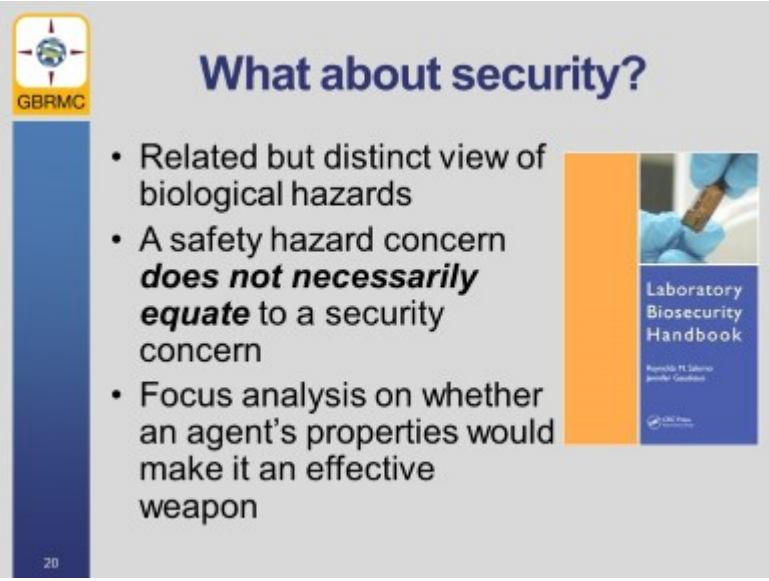
The World Health Organization (WHO) has developed guidelines on biosafety "risk groups."

Risk Group 1 – a microorganism that is unlikely to cause human or animal disease

Risk Group 2 – A pathogen that can cause human or animal disease but is unlikely to be a serious hazard to laboratory workers, the community, livestock or the environment. Laboratory exposures may cause serious infection but effective treatment and preventative measures are available and the risk of spread of infection is limited

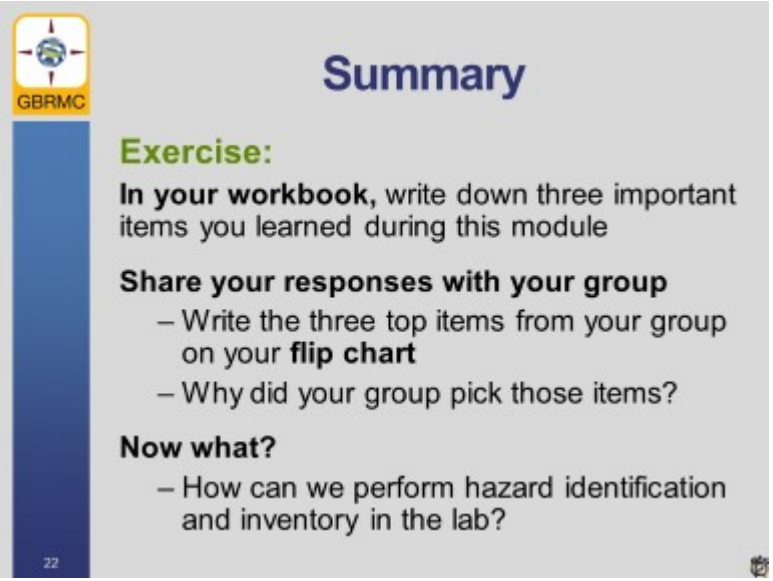
Risk Group 3 – A pathogen that usually causes serious human or animal disease but does not ordinarily spread from one infected individual to another. Effective treatment and preventative measures are available.

Risk Group 4 – A pathogen that usually causes serious human or animal disease and that can be readily transmitted from one individual to another, directly or indirectly. Effective treatment and preventative measures are not usually



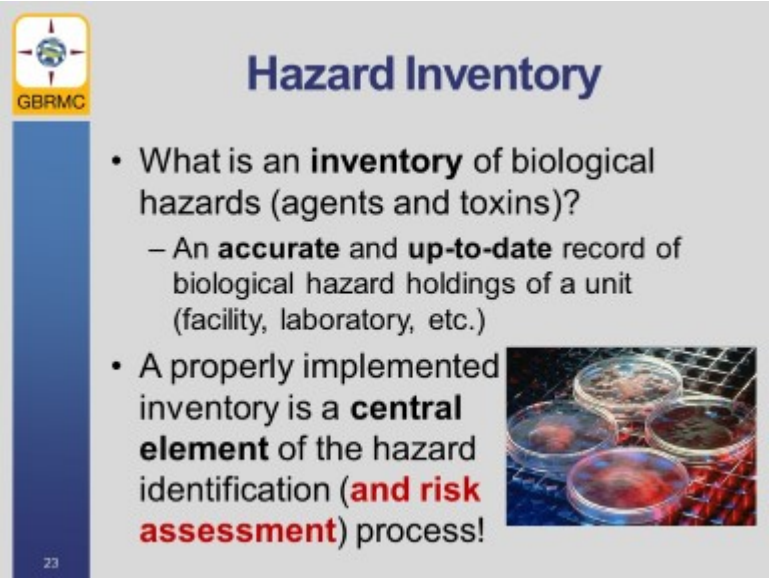
Hazard characterization based on biosecurity-related characteristics is focused on analyzing those agent properties, which could make it an effective weapon in the hands of a malicious person or group.

Risk groups related to biosecurity can be created as well.

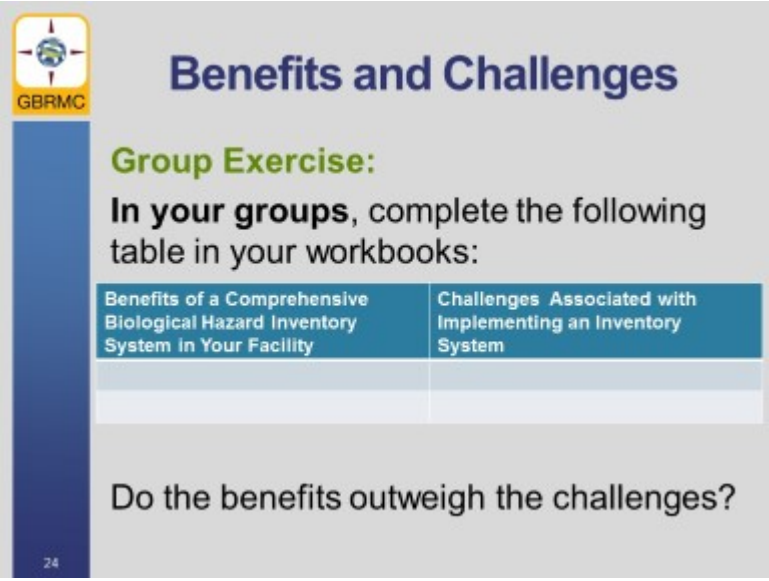


Write down three important items you leaned during this module:

Be prepared to share with your group and the class.

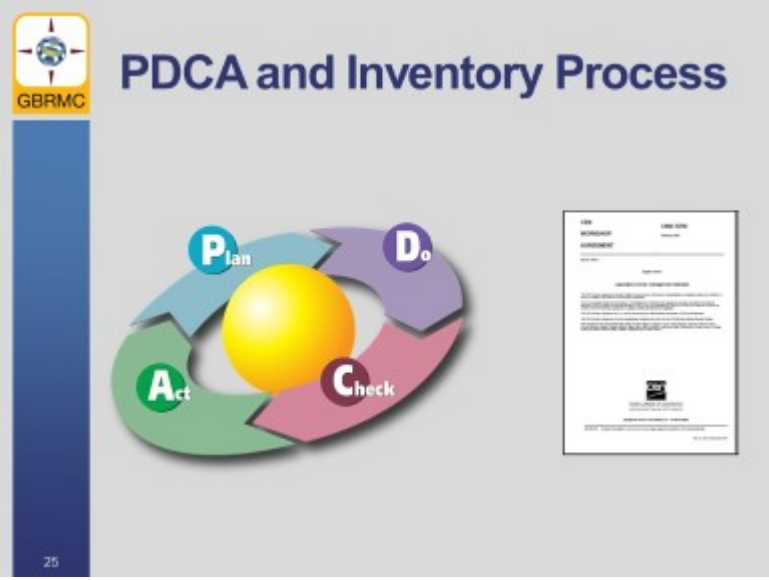


What do we mean when we talk about a biological hazard inventory?



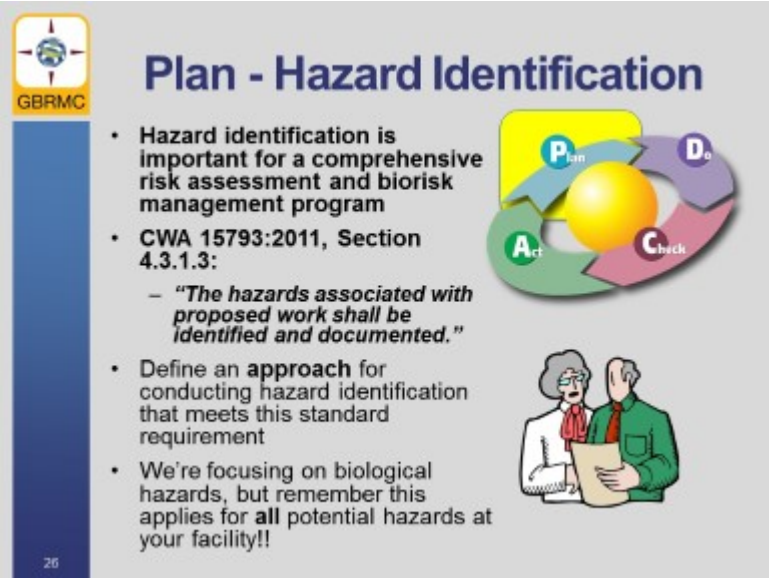
Complete the table provided. Fill free to include more answers here if needed.

Developing, Conducting, & Maintaining a Hazard Inventory



A hazard inventory control process can be designed, implemented, evaluated, and optimized using the PDCA process.

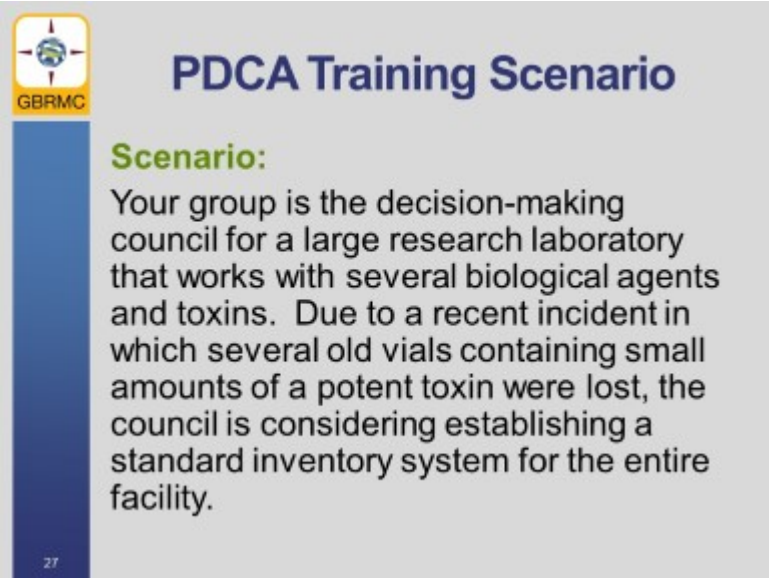
Developing, Conducting, & Maintaining a Hazard Inventory



The first step of the PDCA cycle is Planning.

- In order to plan a practical and effective hazard inventory system, we must have some sense of what the biological hazards are that we will be dealing with.

- It is important to devise a systematic, reproducible, and reliable approach to hazard identification in the laboratory. This is imperative in order to compare data over time and measure process improvements (or degradation).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PDCA Training Scenario
Scenario:
Your group is the decision-making council for a large research laboratory that works with several biological agents and toxins. Due to a recent incident in which several old vials containing small amounts of a potent toxin were lost, the council is considering establishing a standard inventory system for the entire facility.
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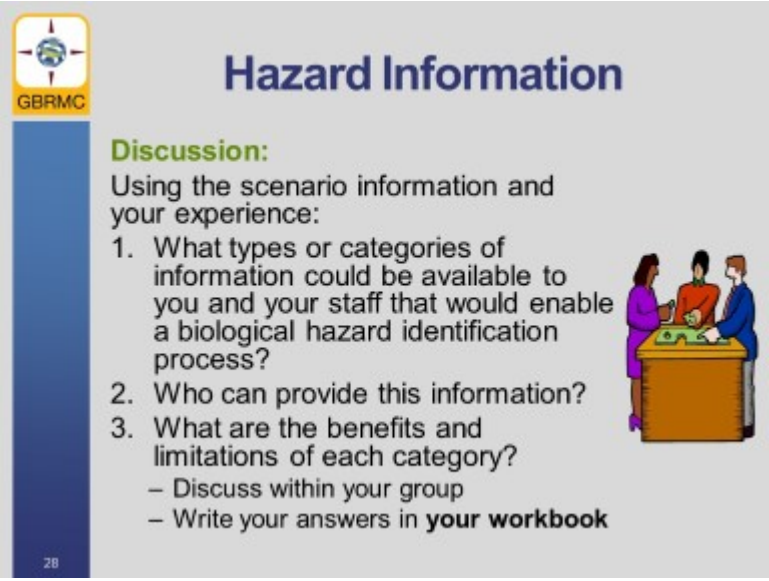
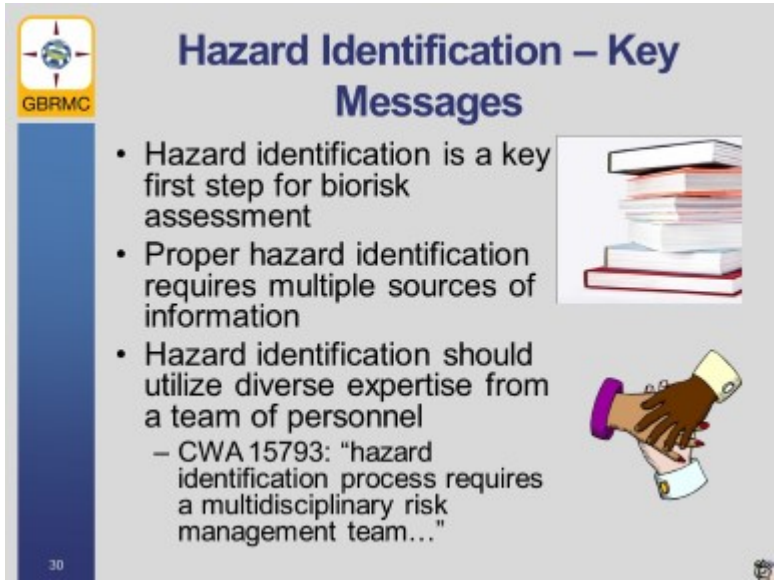


What types or categories of information could be available to you and your staff that would enable a biological hazard identification process?

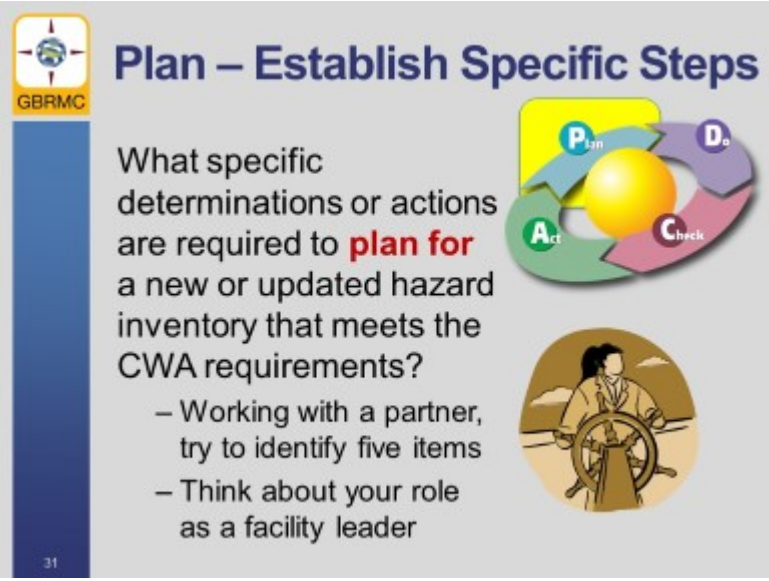
Think about who in your laboratory could provide this information?

Finally, not all sources of information will necessarily give you everything you need. Hazard identification involves putting together pieces of information from multiple sources to create the most comprehensive picture possible. Think about the benefits and limitations of the information types that you listed.

This slide shows potential information sources based on CWA 15793.



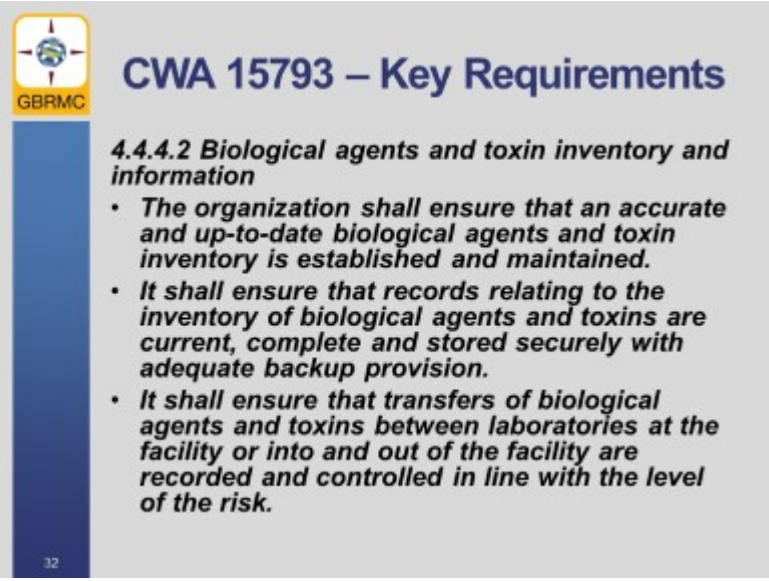
Hazard identification requires that your team consult multiple sources of information.



In your workbooks, you will find the CWA requirements for "biological agents and toxins inventory and information."

Working with a partner at your table, discuss what specific steps can you take in planning stage for a new or updated hazard inventory that meets the CWA requirements?

Developing, Conducting, & Maintaining a Hazard Inventory



CWA Key Requirements for Hazard Inventory:

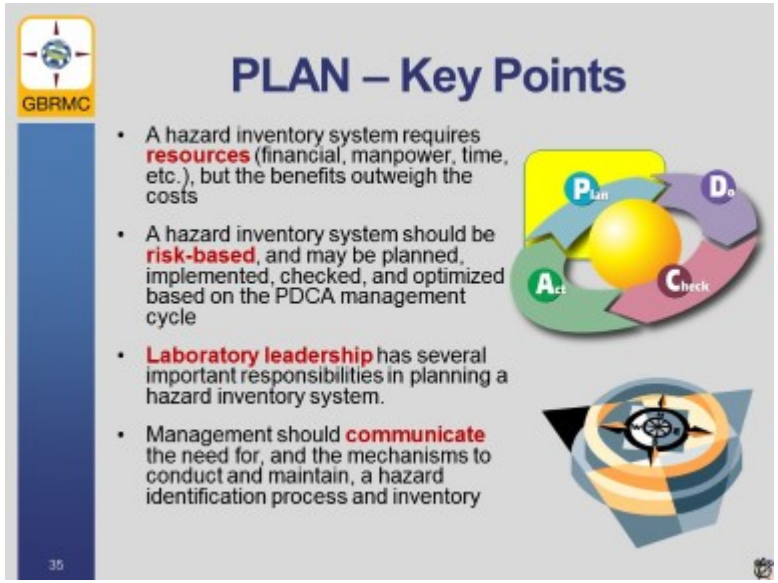
Plan - Personnel Responsibilities

How would you assign roles and responsibilities among **you** and **your staff**? Work with your groups to complete the table in your workbooks.

Category of Personnel	Responsibility	PDCA Component
Laboratory Staff	•Catalogue all biological agents in the laboratory under supervision of laboratory manager.	•Do
Laboratory Staff	•Report hazards encountered during work	•Check

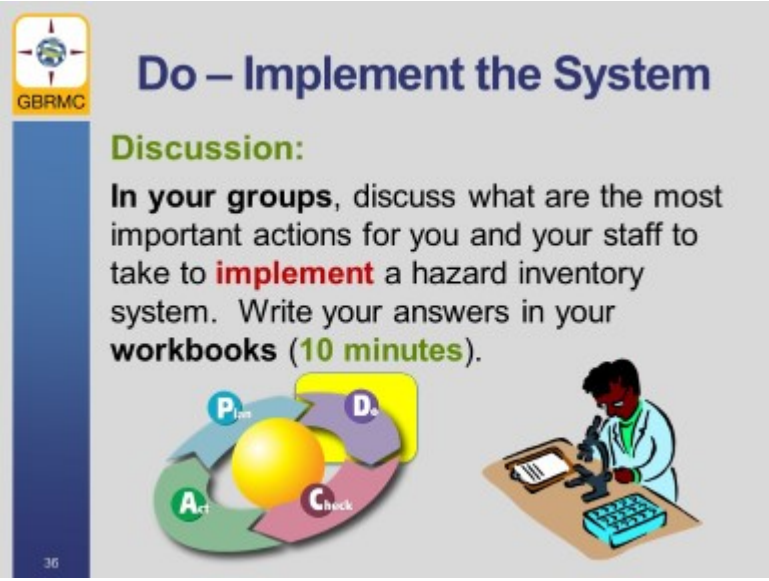
Think about the categories of personnel we discussed earlier when we talked about hazard identification, and for each major category of laboratory or external personnel, assign specific hazard inventory responsibilities to them. For each responsibility you come up with, try to categorize it in terms of the PDCA cycle.

List the essential functions you can play in hazard inventory:

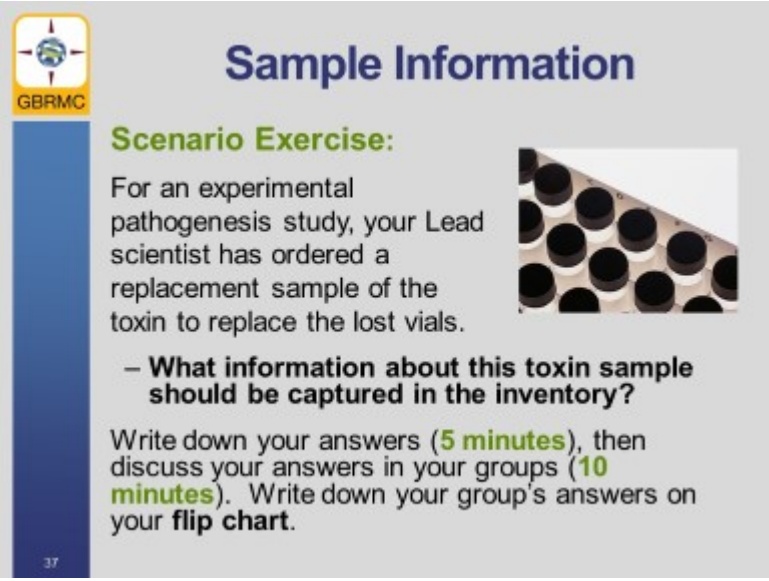


Review PLAN of PDCA with respect to Hazard Inventory.

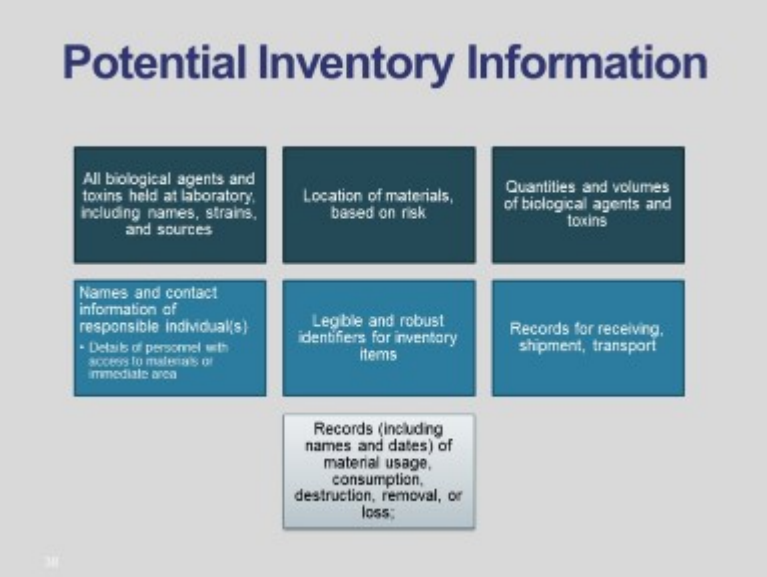
Additional Notes/Examples:



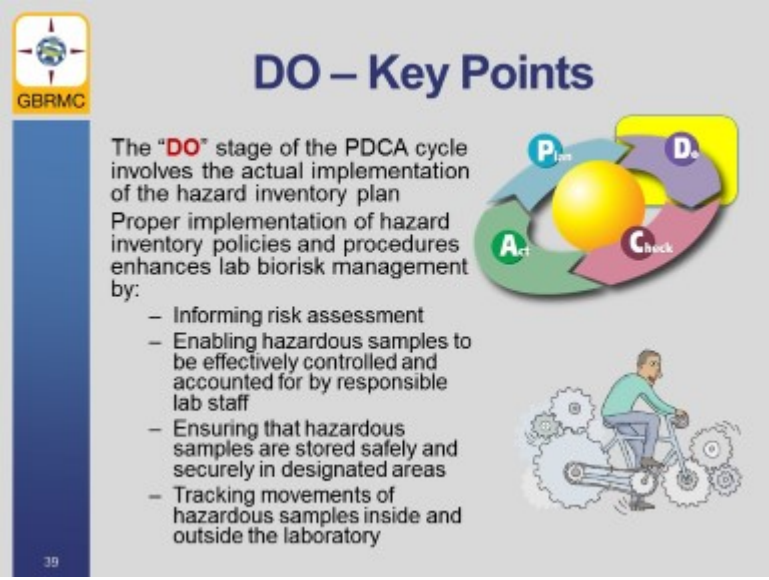
What actions are required to **implement** a hazard inventory system based on plans developed during the first stage?



What information about the toxin sample should be captured in the inventory?

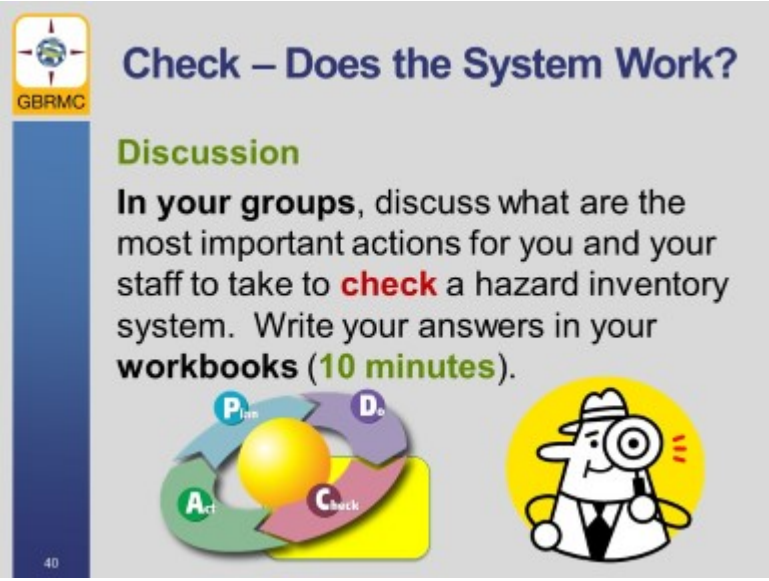


CWA 15793 and other guides (Laboratory Biosecurity Handbook) have identified some specific types of information regarding biological agents and toxins that should be captured in the inventory.



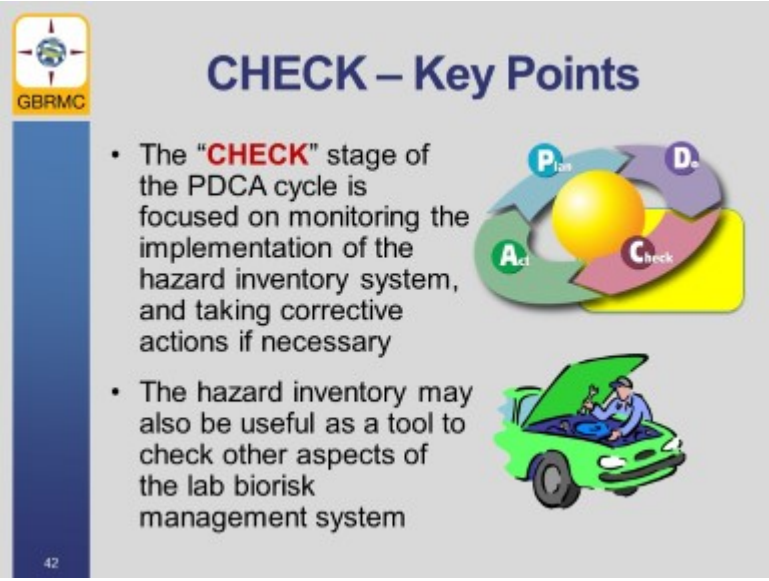
Review DO of PDCA with respect to Hazard Inventory.

Additional Notes/Examples:



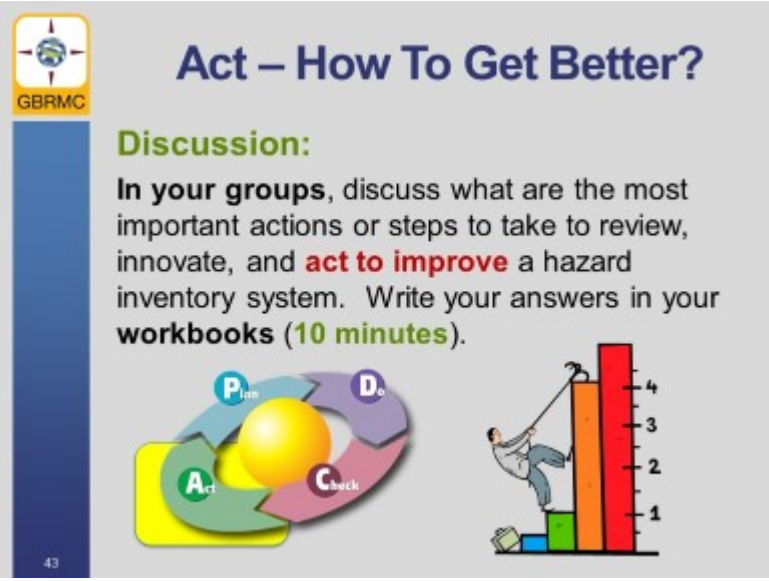
Discuss what are the most important actions for you and your staff to take to check a hazard inventory system?

How can the facility's hazard inventory be useful in the situation?

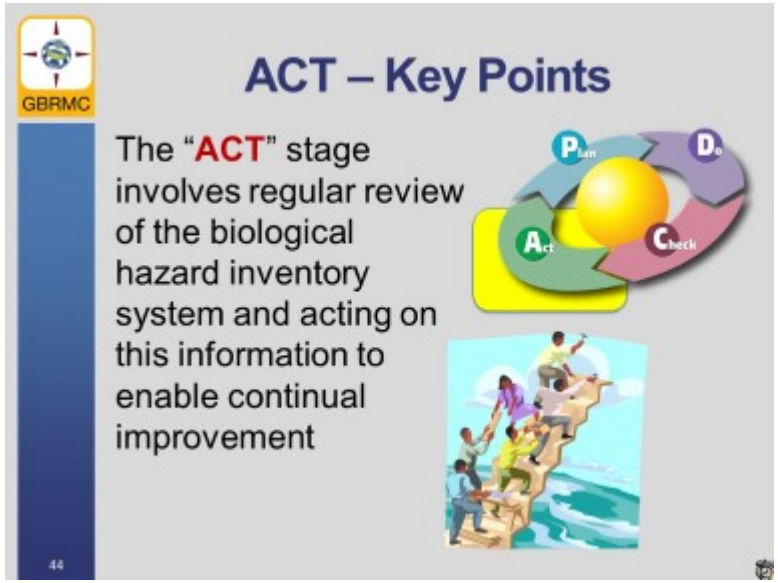


Review CHECK of PDCA with respect to Hazard Inventory.

Additional Notes/Examples:



Discuss what are the most important actions to take to review, innovate, and act to improve a hazard inventory system?



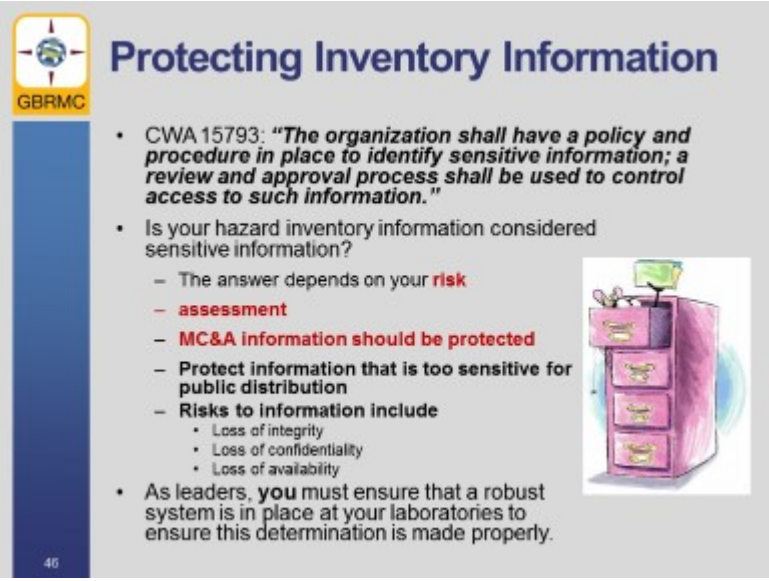
Review ACT of PDCA with respect to Hazard Inventory.

Additional Notes/Examples:

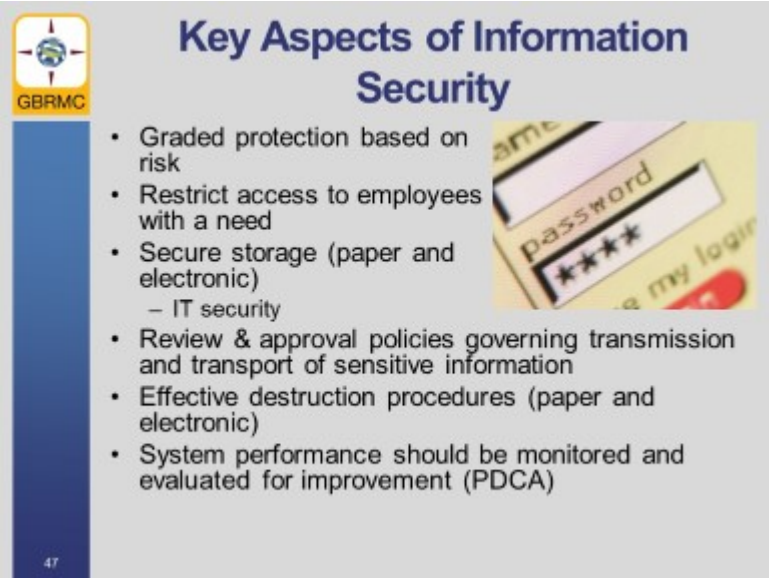
In your laboratory, who currently has access to your inventory records?

Do other personnel who don't need access as part of their functions, such as maintenance staff or visitors, have access to records?

Would it be possible for unauthorized individuals to access inventory-related information in your facility?



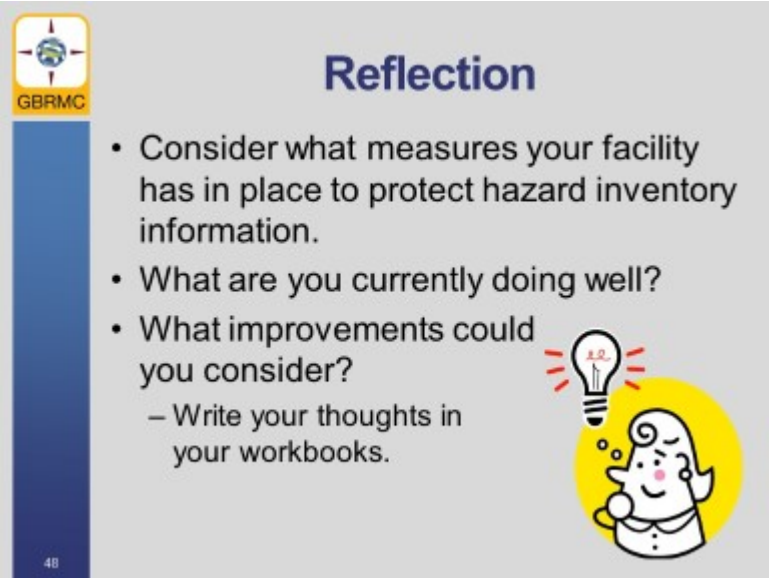
According to the CWA, organizations should have policies and procedures in place to identify sensitive information, and a review and approval process shall be used to control access to this information.



The level of protection applied should be risk-dependent.

Some key principles and procedures common to information security systems include:

- Restrict access to sensitive information
- Store your hazard inventory information securely
- When sensitive information is no longer required, it should be destroyed in a secure fashion. This is true for both physical and electronic records
- Finally, as with all elements of the lab biorisk management system, the performance of your lab's information security procedures should be monitored, evaluated, corrected, and improved over time



What are you currently doing well?

What improvements could you consider?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Review
To wrap-up, let's discuss what we learned about Developing, Conducting and Maintaining a Hazard Inventory...
What did we learn?
What does it mean?
Where do we go from here?
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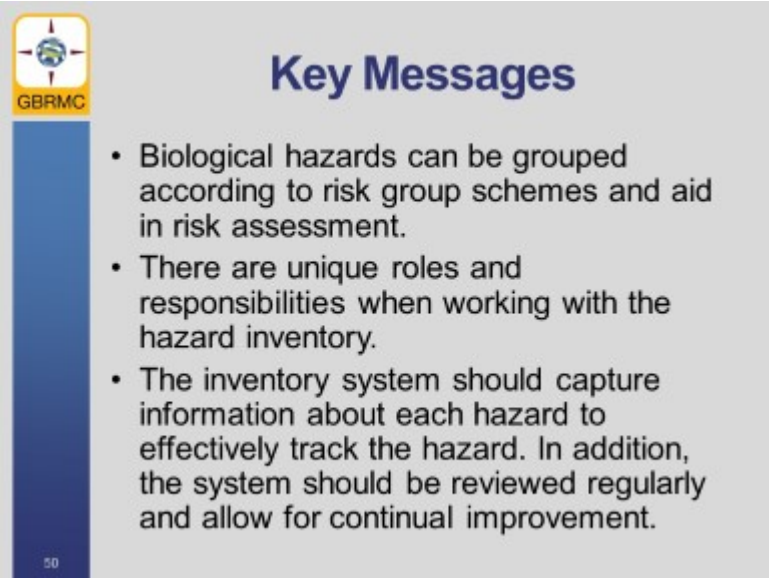
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KNOW		FEEL		BE ABLE TO DO	

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