



# Development and Implementation of a Biosecurity Program in the Laboratory Directorate of Jordan



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## Laboratory Directorate of Jordan Ministry of Health

- National Reference Laboratory for Public Health
- National Center for Clinical Laboratories
- International Partners: Centers for Disease Control (CDC), Naval Medical Research Unit Three (NAMRU-3), United States Agency for International Development (USAID), and World Health Organization (WHO)
- Location: Amman, Jordan
- Built: 1952



## Biosecurity Concerns

- High containment laboratory: BSL-3
- Highly infectious pathogens: H1N1, MERS-Corona, Brucella sp., HIV
- Multi-drug resistant pathogens: MRSA, Acinetobacter sp.
- Other: Sensitive surveillance data



## Rationale

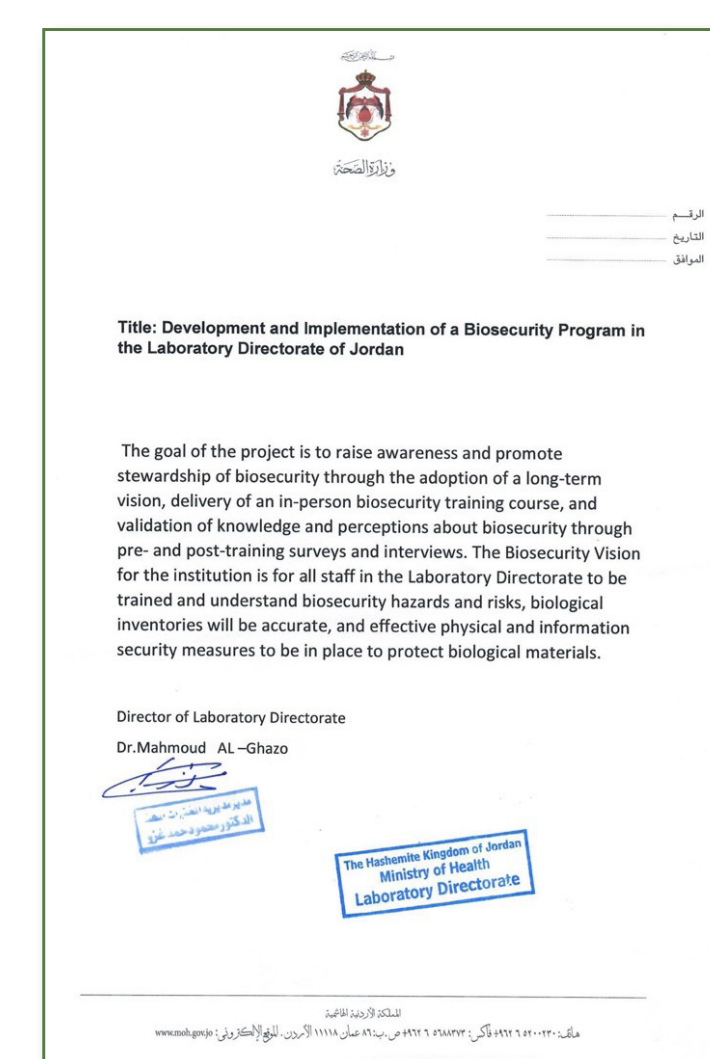
- Change the culture by introducing the concept and importance of biosecurity.
- Improve biosecurity in clinical and public health laboratories, collection rooms, shipping and receiving facilities.
- Provide donors and funding agencies confirmation that adequate biosecurity measures are in place (e.g., to prevent the loss, misuse, intentional release or theft of valuable biological materials, pathogens, toxins, equipment and intellectual property).
- Support the installation of new cameras and security system.

## Objectives

- Adopt a Biosecurity Program Vision
- Conduct a Pre-Training Quantitative Biosecurity Survey
- Conduct a Pre-Training Qualitative Biosecurity Interview
- Develop and Provide a Biosecurity Training to Staff
- Conduct a Post-Training Quantitative Biosecurity Survey
- Conduct a Post-Training Qualitative Biosecurity Interview

### Objective #1: Adopt a Biosecurity Program Vision

- The goal of the project is to raise awareness and promote stewardship of biosecurity through the adoption of a long-term vision, delivery of an in-person biosecurity training course, and validation of knowledge and perceptions about biosecurity through pre- and post-training surveys and interviews. The Biosecurity Vision for the institution is for all staff in the Laboratory Directorate to be trained and understand biosecurity hazards and risks, biological inventories will be accurate, and effective physical and information security measures will be in place to protect biological materials.



## Objectives (continued)

### Objective #2: Conduct a Pre-Training Quantitative Biosecurity Survey

- Institutional Review Board (IRB) Approval: #09718
- Sent to 48 people
- 29 responses
- 20 questions in Arabic and English



### Objective #3: Conduct a Pre-Training Qualitative Biosecurity Interview

In-Person Interviews:

- IRB Approval: #09718
- 12 staff interviewed
- 7 questions in Arabic
- Approximately 15 minutes each



### Objective #4: Develop and Provide Biosecurity Training to Staff

Training Content:

- Biorisk Management Orientation - Assessment, Mitigation, Performance
- Introduction to Laboratory Biosecurity
- Threat Assessment
- Case Studies and Scenarios

Biosecurity Training

- Dates of Round 1: July 28-29, 2019
- Dates of Round 2: July 30-31, 2019
- Location: Amman, Jordan
- Number of Participants: 25 per round



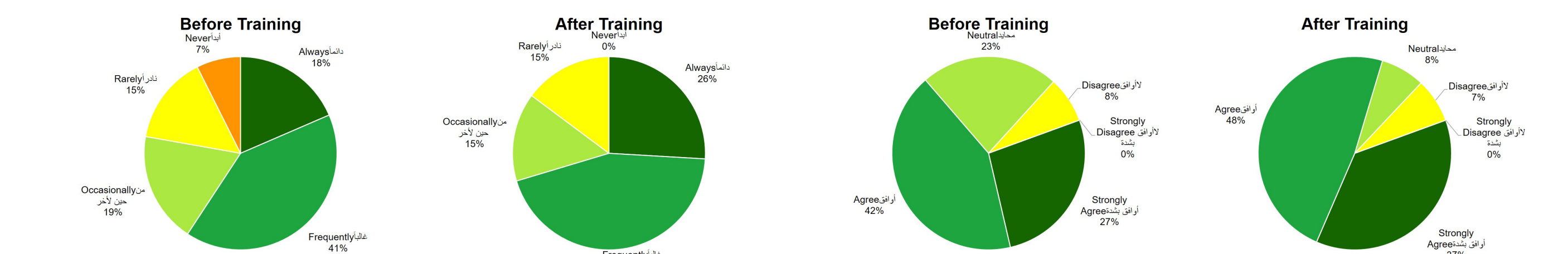
### Objective #5: Conduct a Post-Training Quantitative Biosecurity Survey

- A second survey using the same questions from the Pre-Training Quantitative Survey was used to assess biosecurity knowledge, skills, and abilities.
- The survey was provided in both Arabic and English and sent to the same participants of the first survey through an online surveying mechanism (i.e., Survey Monkey).



## Objectives (continued)

- Personnel understand the steps to take in the event of a theft, loss, or release of biological material?
- Computers are locked except when they are actively being used?



### Objective #6: Conduct a Post-Training Qualitative Biosecurity Interview

- Second set of interviews was conducted using the same questions to inform and assess biosecurity perception and culture.
- Same 12 individuals from first interview were included.



## Observations

- Individuals used the terms biosafety and biosecurity interchangeably; initial interview responses focused on biosafety
- Post-training interview responses focused more on biosecurity; vocabulary used after the training clearly differentiated between biosafety and biosecurity
- Biosecurity ≠ Biosafety



## Lessons Learned

- IRB approval process is quite complex
- Survey may have had more responses if it originated from a local person
- Staff need additional training about biosecurity; staff asked for more training, including refresher courses
- Biosecurity needs to be expanded to other laboratories
- In-person training is an effective method to teach people the importance of biosecurity and how it is different than biosafety. Training attendees brought many examples (i.e., case studies) of scenarios where biosecurity was a concern

## Parallel Outcomes

- Camera system installed
- Card access system installed
- Control access procedures written



## Conclusion

This project raised awareness and promoted stewardship of biosecurity through the adoption of a long-term vision, delivery of an in-person biosecurity training course, and validation of knowledge and perceptions about biosecurity through pre- and post-training surveys and interviews.

## Acknowledgements

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