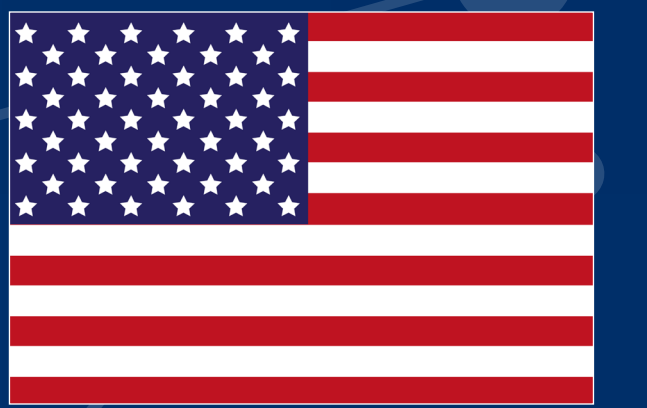




# Establishing Biorisk Management in the Tunisian Military Laboratories



Ben Moussa Mohamed, Republic of Tunisia, Ministry of National Defence, General Direction of the Military Health  
Melissa Ann Morland, University of Maryland, Baltimore

## Background

- Biorisk management is a new concept in Tunisia.
- Laboratory workers in the military health institutions are not trained in biosafety or biosecurity.
- These laboratories each process upwards of 200,000 samples per year a number of which contain high risk pathogens.
- This project will increase biorisk management awareness; therefore, increasing safety and security in the laboratories.



## Objectives

- This project will assess both the laboratory environments and the current awareness of staff.
- Staff from 15 Tunisian military health institutions laboratories will be trained in basic biorisk management.
- Overall goal is to increase biorisk management awareness as shown by pre and post assessment.

## Methodology and Resources

### Prepare an Assessment Tool to use in all the Laboratories

Organization/Institution Information and Address (Please provide address where laboratory is located)			
Organization Name:			
Laboratory responsible (first & last name):			
Department:			
Laboratory Address:			City:
Country:			
Phone Number:			
A. Laboratory & Laboratory Design	YES	NO	N/A
B. Safety Equipment	YES	NO	N/A
C. Agents/Special Practices/SOP	YES	NO	N/A
D. Decontamination and Waste Management	YES	NO	N/A
E. Hazard Communication and Training	YES	NO	N/A
F. Security	YES	NO	N/A
G. Accident/Incident Investigation	YES	NO	N/A
H. Worker Health Surveillance Programme	YES	NO	N/A

### Laboratory Biorisk Management Assessments

Visit 15 Medical Laboratories:

- Military Hospital of Tunis (5 Labs)
- Military Hospital of Bizerte (1 Lab)
- Military Hospital of Gabès (1 Lab)
- Military Center for Blood Transfusion (1 Lab)
- The Aeromedical Center of Expertise (1 Lab)
- Military Laboratory for Food Analysis (1 Lab)
- Military Policlinics in Kef, Tunis, Kairouan, Gafsa and Tataouine (5 Labs)

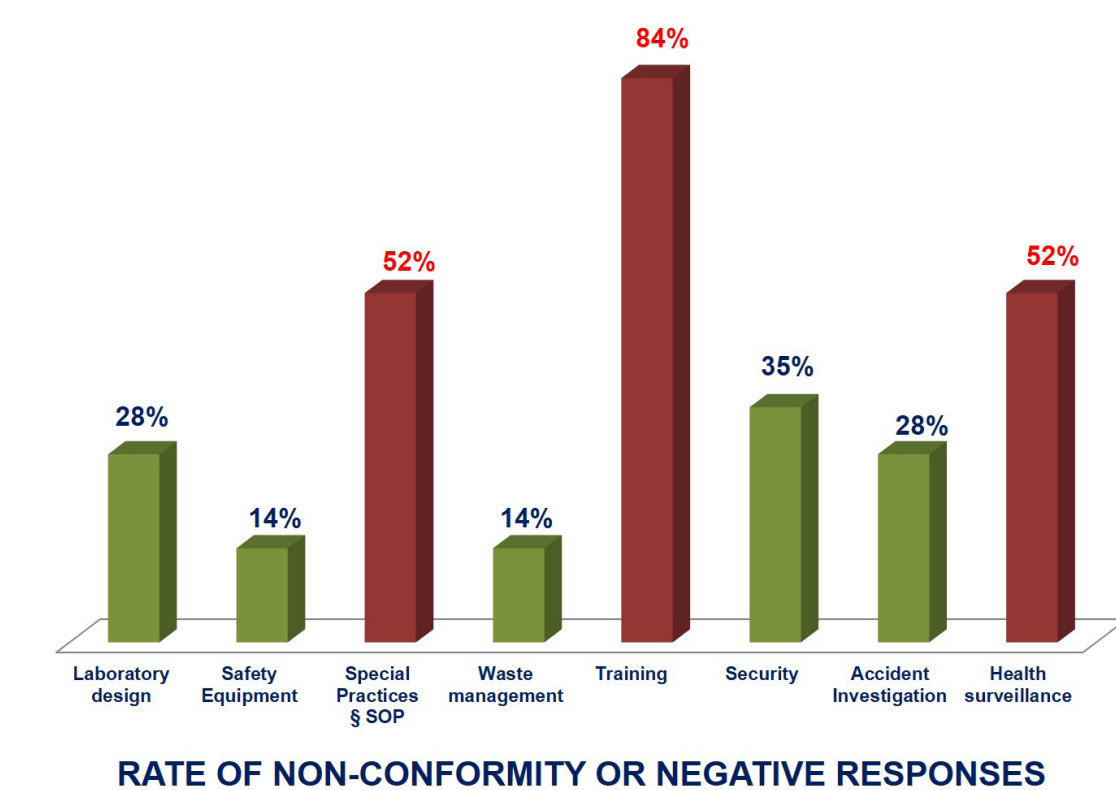


### Biorisk Management Training

- Deliver training to the laboratory staff in the military hospitals of Tunis and measure awareness post training.



### Laboratory Assessment Results



Confirmed the need for training and identified subject areas

Training +++

## Methodology and Resources (continued)

### Training Program

### Training Photos - First Day - Sept. 8, 2017 - Opening Ceremony



### Pre-Assessment Test - First Day



### Pre-Assessment Results

- Participants least familiar with:
  - Biosafety, Biosecurity, Standard Operating Procedures, Health Surveillance, Personal Protective Equipment
- Participants most familiar with:
  - Hanwashing and Waste Management



### Training Photos - Second Day - Sept. 9, 2017



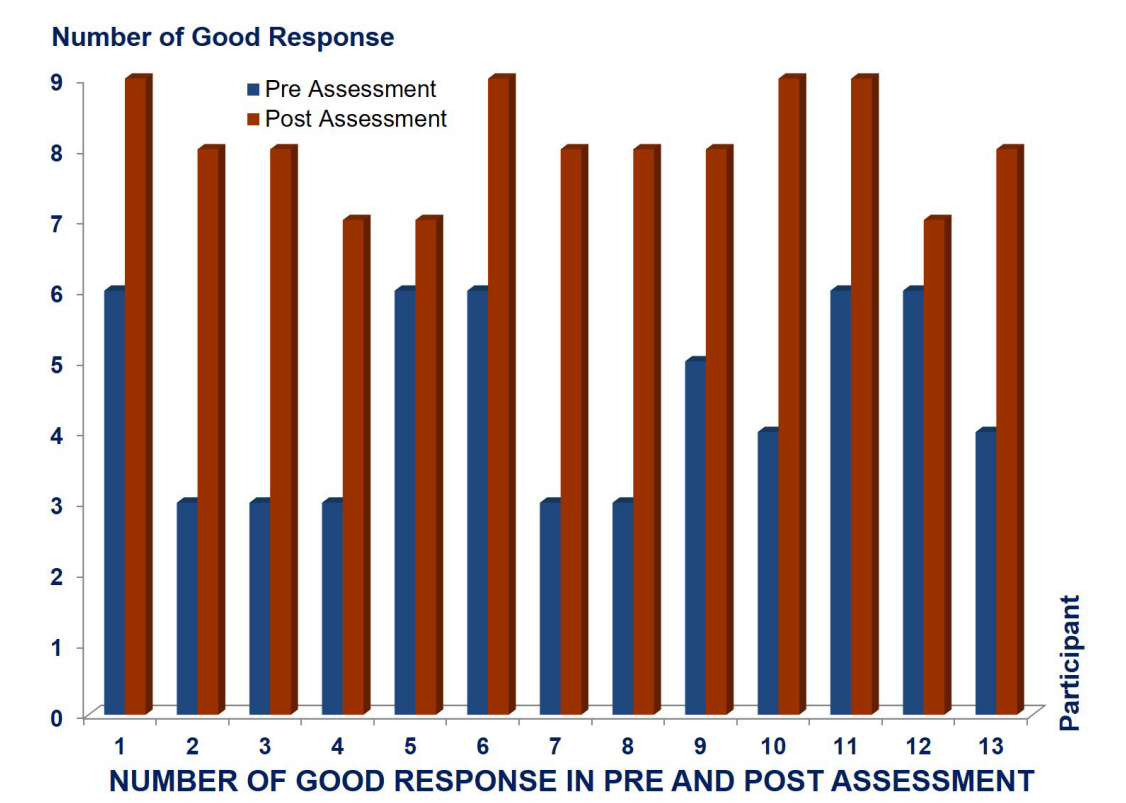
### Closing Ceremony and Certificate Hand Over



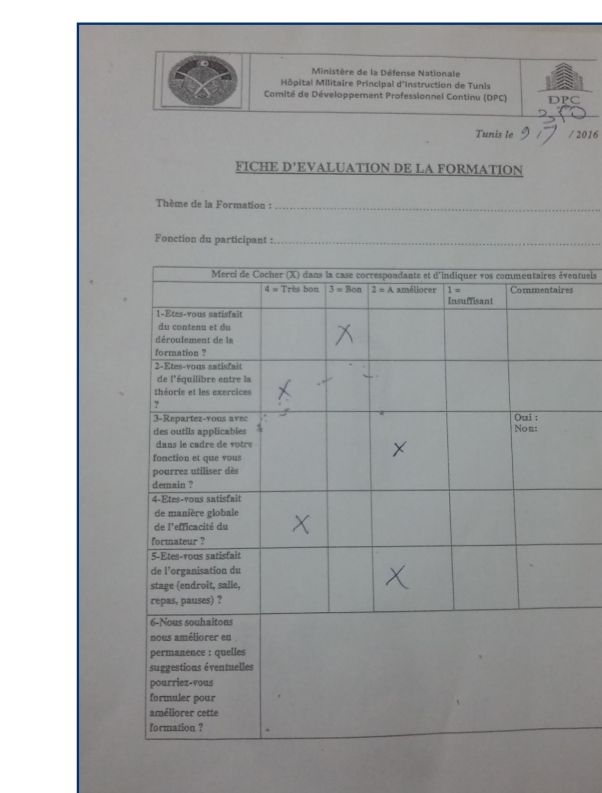
## Methodology and Resources (continued)

### Training Program

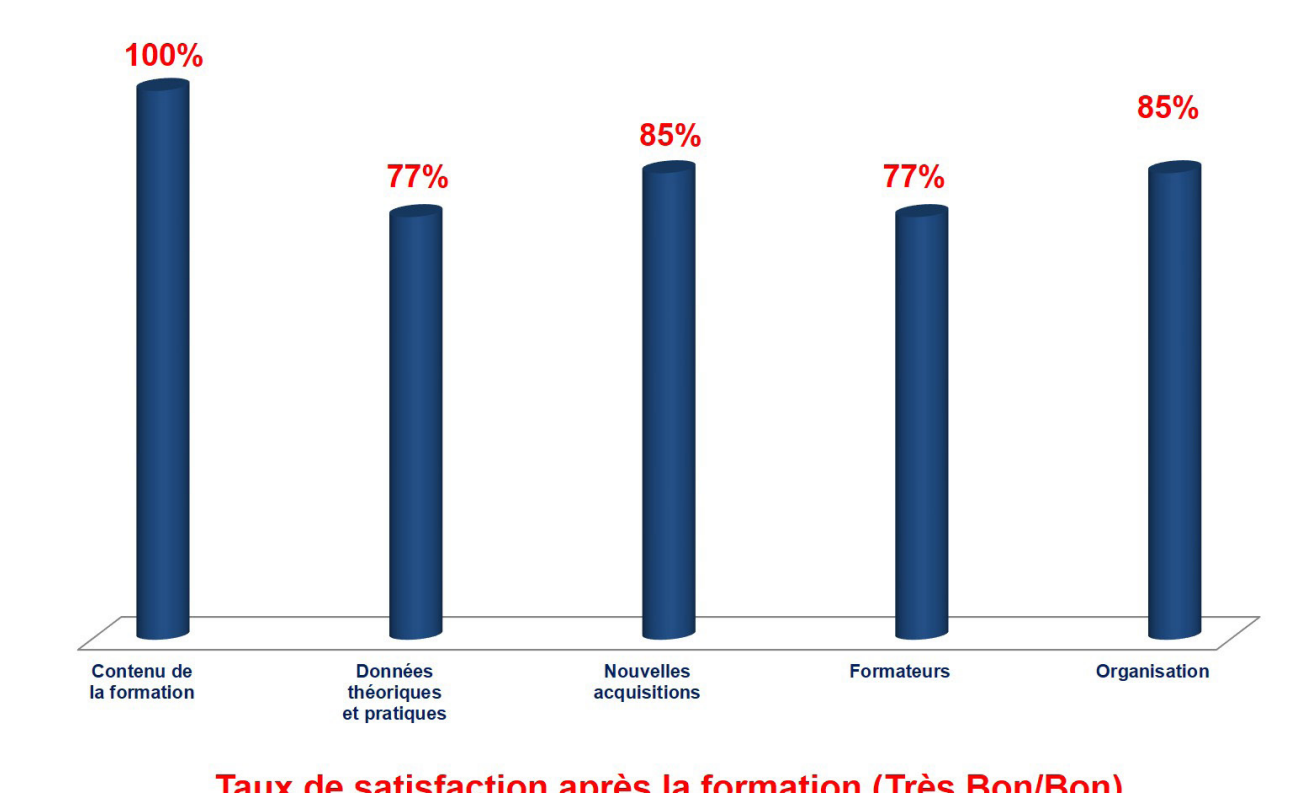
- Number of participants: 13 laboratory health workers (out of 200 lab workers)
- Trainers: Ben Moussa, Anissa, Habiba
- Participating laboratories: Microbiology, Parasitology, Immunology, Hematology, Biochemistry, Pathology and Environment and Hygiene
- Pre and post-assessment: 10 questions
- Training evaluation: 6 questions



### Training Assessment



### Training Assessment Results



## Conclusions

- Biorisk management (BRM) is key to global health and security.
- This project introduced BRM in the laboratories and increased the understanding of biosafety and biosecurity concepts and practices among laboratory workers handling high risk pathogens.

## Lessons Learned

- Top level support was necessary.
  - Without the approval of the Directorate General access to hospitals would be limited.
- Time management is important.
  - Add enough extra time in your schedule.
  - Even the best laid plans will need adjustments.

## Future

- Additional advanced training workshops are necessary to enhance skills and knowledge.
- Training for all laboratory personnel (~200) through a multi-trainer approach is being planned.
- Developing a legal framework in Tunisia for effective controls, including national biosecurity regulations, guidelines, and procedures is highly recommended.

## Acknowledgements

- Sandia National Laboratories (Eric Cook, William Pinard, Kevin McMahon, Karen Hopkins)
- Directorate General of Military Health
- Military Hospital of Tunis Directorate
- U.S. Department of State, Biosecurity Engagement Program
- Anissa, Habiba, Faïda, Najla

