

# Subregional Training on TB Laboratory Biosafety Cabinet (BSC) Field Testing & Maintenance

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# Objectives & Expected Outputs

## ***Objective of the training:***

- *to increase the national and regional capacity in BSC maintenance and testing*
- *to provide an opportunity to better serve BSC maintenance needs as well as improved sustainability and cost efficiency of providing this service*

## ***Expected outputs and outcomes:***

- *At least one trained engineer/technician per participating country who has passed the final examination on theoretical and practical aspects of BSC maintenance and field testing*

# Achievements

**Two trained MOH-nominated participants from Azerbaijan, Georgia and Ukraine on theoretical and practical aspects of BSC field testing and maintenance based on EN 12469 and NSF/ANSI 49 Standards including:**

- Inflow and downflow air velocity measurement
- Filter testing by particle counter and photometer
- Smoke testing
- Decontamination of BSCs
- Testing of control and alarm systems
- Laboratory ventilation system assessments
- UVGI application and measurement
- Electrical safety evaluation
- Recording and reporting
- Proper use of biosafety measures
- Roles and responsibilities for BSC certification and testing
- Instruction and usage of necessary pieces of equipment and their maintenance (calibration)



# Achievements

- Increased regional capacity on TB laboratory BSC field testing
- Regional expert pool of trained personnel for future inter- and intra-country collaborations and exchange of knowledge & experience

# Laboratory-related Observations

- Ideal opportunity to conduct the training in the new laboratory
- Great teaching facilities for didactic training
- Using two BSCs in the large lab was good for conducting the class exercises as they were able to see discrepancies
- Well designed laboratory layout
- Improved work area allowing good workflow
- Laboratory staff was very helpful

# BSC related Observations

- Recommended BSCs for TB (Class II Type A2 BSCs; air can be recirculated in the lab or go through a thimble duct)
- BSCs scheduled for installation and field testing
- Local staff (Shota and Tariel) witnessed conducted testing results and will ensure they are corrected as needed during the initial installation and field testing

# Recommendations

- BSC installation and field testing, in accordance with EN 12469 & manufacturer's specifications, should be conducted to ensure proper assembly and operation of the BSCs
- Perform the installation testing once the BSCs are put in their final location

# Recommendations

- Final testing and balancing of the ventilation systems should be conducted to ensure proper performance (airflow, differential pressures, noise, temperature, controls/automatics, etc.). This will include sealing the gaps in all walls, including above ceiling.



# Recommendations

- Final "as built" technical drawings, operation and maintenance documentation of all equipment, and all technical documentation should be handed over with the building. Training on the operation & maintenance of the building should also be conducted.

# Recommendations

- Independent validation after final testing (installation and field testing of BSCs) and balancing of the (laboratory) ventilation system
- Once building is accepted, start planning for further improvements based on updated risk assessment

# Recommendations

- The risk assessment should be reviewed regularly to inform management of needed changes in infrastructure and/or policies (including SOPs)
- The laboratory infrastructure should be evaluated regularly to ensure compliance with latest WHO recommendations for laboratories.

# Recommendation

- Budget routine maintenance costs for laboratory building (ventilation system, BSCs, and other systems)
- Provide access to trained engineers to calibrated BSC testing equipment
- Provide opportunity for the engineers to practice and apply the knowledge

# Thank you and your team for excellent support

