

Current major event

Biosafety in laboratories working with influenza in EMR

WHO and partners conducted a regional biosafety training course for containment of influenza and other infectious diseases of international concern from 16 –20 April, 2018 in Morocco. The training workshop was attended by participants from 21 countries in the WHO Eastern Mediterranean Region (EMR).

Editorial note

National Influenza Centers (NICs) are national reference laboratories that play a key role in global health security by confirming human infections with influenza viruses or other emerging or new respiratory pathogens causing severe diseases, such as avian influenza or Middle East respiratory syndrome.

Given the growing importance of emerging infectious diseases, the management and handling of high threat pathogens in an imperfect environment or by improper techniques can be a threat to international health security. Laboratory biosafety and biosecurity are fundamental bio-risk management practices that should be employed in all biological laboratories such as NICs to prevent exposure to pathogens, protect laboratory workforce and the community against inadvertent exposures or releases of high threat pathogens. Unfortunately biosafety programmes have been implemented using the equation between pathogen risk groups and laboratory biosafety levels which require construction of higher biosafety level (BSL) facilities that are difficult to properly design, construct and maintain in resource limited countries.

The Joint External Evaluation (JEE) for IHR core capacity assessment conducted in 14 countries in the Region revealed that biosafety and biosecurity areas have the second lowest mean score (out of maximum score of 5) amongst all the technical areas. Critical gaps has been identified in comprehensive biosafety and biosecurity legislation, laboratory licensing, updated record and inventory of dangerous pathogens and toxins, pathogen control measures, dangerous pathogens and toxins consolidate into minimum number of facilities; and employing diagnostics that preclude culturing and implementing oversight and enforcement mechanisms These findings were consistent with an earlier

Table 1: Implementation Road Map for Enhancing Biosafety Programme in the Laboratories

Component	Possible Next Steps...
Biosafety and laboratory management	— Review the existence or status of national regulations for biosafety and biosecurity
	— Appoint biosafety committee and/or officer within your institution
	— Develop an agenda for a planning/biosafety committee meeting
	— Modify BSL-2/BSL-3 assessment checklist for the laboratory
Risk Assessment, documentation, and mitigation	— Review biosafety cabinet maintenance program
	— Assemble a team including biosafety officer, laboratory staff, lab manager
	— Improve risk assessment steps and documentation before embarking on the next risk assessment.
Biosafety manual, SOPs, and documents	— Conduct at least one procedure-based risk assessment (i.e., test specific).
	— Revise OR develop laboratory-specific biosafety manual
In country training	— Make a chemical list and associated procedures
	— Conduct exercises (Examples may include Spill clean-up, Donning and doffing, Biosafety Cabinet set-up and smoke test, Laboratory design, Respiratory Fit Test) for laboratory staff
	— Develop biosafety and risk-management associated training plans for staff
	— Develop biosafety curriculum for use in preparatory education of future laboratory staff
Biosecurity/occupational health	— Review facility/laboratory-level biosecurity procedures
	— Assess and implement changes to emergency management plans

assessment of NICs and influenza laboratories in EMR that was conducted in 2016-17 by the Regional Office. The assessment revealed that some of the NICs and other reference laboratories in the Region have major gaps on biosafety measures including bio-waste management and security of the laboratory.

To address the above gaps and facilitate the process of enhancing standard biosafety measures, a regional biosafety training course for containment of influenza and other infectious diseases of international concern was organized by WHO in collaboration with U.S. Centers for Disease Control and Prevention (CDC) in partnership with the Association of Public Health Laboratories (APHL). The aim of the training course was to present best practices that will assist the Member States in the development of biosafety programmes within the NICs. The training was attended by NIC managers and Biosafety officers from Afghanistan, Bahrain, Djibouti, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Pakistan, Palestine, Qatar, Saudi Arabia, Somalia, Sudan, Tunisia and United Arab Emirates.

The training focused on bio-risk assessment and mitigation; development of biosafety guidelines; maintenance of Biological Safety Cabinets; Laboratory design; Biosafety levels; Biosafety Management Programs; Personal Protective Equipment including donning and doffing exercises; Respirators and Respirator Fit testing exercise; Operative Manual for the Safe Transport of Infectious substances; and Safety Inspections and Audits. Furthermore as a key follow up action, and based on input received from participants during the training workshop, an implementation road map (Table 1) was developed.

Update on outbreaks in the Eastern Mediterranean Region

MERS in Saudi Arabia; **cholera** in Somalia; **cholera** in Yemen; **Diphtheria** in Yemen.

Current public health events of international concern [cumulative N° of cases (deaths), CFR %]

Avian influenza: 2006-2017

Egypt (A/H5N1)	[359 (122), 34%]
Egypt (A/H9N2)	[4 (0)]

Ebola virus disease (EVD): 2018

Democratic Republic of Congo (DRC)	[147 (99), 67.3%]
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Rift Valley fever : 2018

Kenya	[95 (11), 11.6%]
Uganda	[23 (8), 34.8%]

Cholera: 2017-2018

Somalia	[6 364 (42), 0.7%]
Yemen	[1 125 189 (2 326), 0.2%]
Tanzania	[3 739 (68), 1.8%]

Diphtheria: 2018

Yemen	[1 904 (98), 5.1%]
Bangladesh	[8 179 (44), 0.5%]

MERS: 2012-2018

Saudi Arabia	[1 876 (726), 38.6%]
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Yellow Fever: 2017-2018

Brazil	[1 266 (415), 32.7%]
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