Mobile Elements for Outbreak Response

Challenges, Solutions and Lessons-learned

Colonel

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Modular Mission Concept
Mission Tailoring

Mission requirements

- pathogen known/unknown
- available resources on-site
- need for sustainability
- transport resources
- available lead-time

- Personal protective equipment
- MedBio sampling
- Vector I (rodents)
- Vector II (ticks & insects)
- Ultra-low-temperature transport
- Rapidly deployable BioLab
- Inflatable Biolab Tents
- Autonomous power supply
Med Bio ReconTeam

- bio reconnaissance, expert advice
- human & veterinary sampling / necropsy
- forensic verification & documentation
- IATA shipment (1-5 sets)
- POC tests (HHTK)

24h 2/1/0//

CLI  EPI  PH  PAC  VET  PAT

OF-4  OF-3  OR-7
BioMed Recon Team
Equipment
Bio Med Recon Team - Med Bio Sampling Kit
Bio Med Recon Team - Expert Bio Sampling
Bio Med Recon Team - SIBA Missions
Bio Med Recon Team - SIBA Missions

Average mission duration

90 minutes
Bio Med Recon Team - Field Necropsy
Container Labs – Not rapidly deployable
Rapidly Deployable Lab Equipment
Rapidly Deployable BioLab
Air Transport
CCHF Diagnostik im Kosovo 2007 & 2008
The European Mobile Lab - EMLab
Transfer of military know-how
The European Mobile Lab - EMLab
The human factor
The European Mobile Lab - EMLab
The Training
Deployment & Relocating of Mobile Lab Units

4 Lab Units deployed
5 Relocations
Deployment & Relocating of Mobile Lab Units

4 Lab Units deployed
5 Relocations
Challenge: Food Supply
Challenge: Waiting for Samples
Challenge: Death of Patients
Challenge: Mission Debriefing

EMLab Post Deployment Debriefing

Questionnaire Q1 (ENG)

This questionnaire refers to your present condition and feelings. It is screening for typical reactions which might occur in people after stressful events.

It should not take longer than about 5 minutes to complete.

The questionnaire of 10 statements about how you have been feeling in the past few days. You need to decide how often you have been feeling this way in the past few days.

If you have not ever felt or experienced what the statement says in the past few days, circle 1 (never).

If you have been feeling or experiencing it all the time, circle 6 (always).

Presently (this means in the past few days) I suffer from:

1. sleep problems
   - never 1 2 3 4 5 always
   - 1

2. nightmares
   - never 1 2 3 4 5 always
   - 6

3. depression, I feel dejected/downtrodden
   - never 1 2 3 4 5 always
   - 6
Challenge: Transportation & Traffic
Challenge: EMLab Teams

... ten 5-day trainings conducted since April 2014
<table>
<thead>
<tr>
<th>Activity</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction in the mobile field-lab concept</td>
<td>1h</td>
</tr>
<tr>
<td>Technical instruction on handling of mobile lab equipment</td>
<td>2h</td>
</tr>
<tr>
<td>Glovebox maintenance</td>
<td>1h</td>
</tr>
<tr>
<td>SmartCycler maintenance and repair</td>
<td>1h</td>
</tr>
<tr>
<td><strong>Personnel protective equipment</strong></td>
<td><strong>2h</strong></td>
</tr>
<tr>
<td>Power converter operation</td>
<td>1h</td>
</tr>
<tr>
<td>Lab waste management in the field</td>
<td>1h</td>
</tr>
<tr>
<td><strong>Scenario-based lab team training</strong></td>
<td><strong>18h</strong></td>
</tr>
<tr>
<td>Sample reception &amp; documentation</td>
<td>1h</td>
</tr>
<tr>
<td>Documentation, statistics and reporting of data</td>
<td>2h</td>
</tr>
<tr>
<td>qPCR results interpretation &amp; troubleshooting</td>
<td>2h</td>
</tr>
<tr>
<td>Storage of samples</td>
<td>1h</td>
</tr>
<tr>
<td>Preparation of samples for IATA shipment</td>
<td>2h</td>
</tr>
<tr>
<td><strong>Satellite phone communication</strong></td>
<td><strong>1h</strong></td>
</tr>
<tr>
<td>Team safety and biosecurity in the field</td>
<td>1h</td>
</tr>
<tr>
<td>Disinfection regime</td>
<td>3h</td>
</tr>
</tbody>
</table>
EMLab Statistics since March 2014

• 38 lab teams deployed
• served 6 locations in LIB, GIN and SLE
• operational 12h / 7d
• turn-around time less than 6 hours
• down-time 0 days
• tested > 11,000 samples (3,300 positive for Ebola virus)
German Biosecurity Initiative Mali
German Biosecurity Initiative Mali
Training von EMLab Teams, eigener Kräfte & andere Nationen

BEL Militärlabor
Guinea, Nzere Kore
Mobile Lab Trainings for Partner Institutions

17 Trainings
136 Participants
20 Nations
5 Days
28 Scenarios