Towards a UNSGM biological analysis network

Workshop Report

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Background and objectives

UNSGM training courses arranged by Sweden 2009 and 2014

Creation of a network of international experts and laboratories

Participants

- UNODA
- UNSGM Syria investigation team
- WHO
- Finnish Institute for Verification of the CWC
- Denmark, Finland, France, Germany, The Netherlands, Norway, Switzerland, United Kingdom, Sweden

Contents

- Presentations (UNSGM, lessons learned)
- Scenario
 - Group discussions
 - Presentations



Challenges for the investigation of an alleged use of BW vs CW

Biological

Natural background



- Many are contagious
- Odourless and tasteless
- Delayed onset
- Dynamic

Chemical

Man-made (not naturally occurring)



- Not "contagious"
- Odour (for some)
- Rapid onset
- Static, defined (biodegradation)

Stages of Microbial Forensic Investigation

Who is responsible? Origin/Source?

Natural or deliberate origin?

Characterization

I. Suspicious/unusual/unexpected features of the agent?

- signs of genetic manipulation?
- mutational bias?
- identity to known laboratory strains?
- unexpected antibiotic resistance pattern?
- unexpected virulence determinants?

II. Anomalies in epidemiological pattern

- numbers, symptoms?
- time distribution?
- spatial distribution?

Attribution

- a) Identification of possible sources of attack strain through screening against available strains to successively narrow in on related strains
- b) Comparison to strain linked to suspected perpetrator
- c) Assessment of forensic value of evidence

- genus and species?

Effective treatment and/or preventive measures?

Which agent?

toxin?

Identification

- bacterium, virus, fungus, protozoa,

Modified from: Sjödin et al., Biosecurity and Bioterrorism, 2013, s78-86

Core issues identified

Expandended laboratory network

Develop list on criteria/qualities required

Capabilities and capacities of laboratories

- Requirements for identification / characterisation / attribution
- Standard operating procedures and/or recommended operating procedures

Reporting

 Development of reporting structure for sample analysis

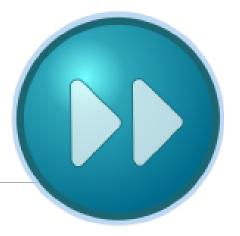
Chain of custody

Establish guidelines and procedures

Accreditation and Proficiency tests

 Identify relevant internationally accepted standards

Way forward



- 1. Continued discussion of identified key elements and core issues
- 2. Contract issue for laboratories
- 3. Link to training of experts
- 4. Field team composition
- 5. Technical working group
- 6. Build "decision-tree" for generalised procedures
- 7. Develop detailed scenarios

Thank you for your attention