Promotion of capacity building, through international cooperation, in biosafety and biosecurity to enhance preparedness and response capacities to outbreaks of infectious disease or biological weapons attacks

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Overview

• Introduction – prevention of exposure to biological agents
• Building capacity – preparedness and response
• Examples of international cooperation from a Norwegian perspective
Biological agents cause outbreaks

Biological agents (bacteria, viruses, fungi and parasites) can cause harm by

- natural infection
- accident
- deliberate release

Good preparedness against natural infection is good preparedness against accidental and deliberate release
Need for International Agreements and Cooperation

• "Infectious diseases respect no borders"

• Cooperation across regions and borders of paramount importance
Definitions

- Biosecurity
- Biosafety
- Infection prevention and control
Biosecurity

1. Originally used to describe a government’s efforts to prevent the intrusion of pests and infectious diseases that could threaten agriculture and the environment.

2. Now more commonly used to refer to the countermeasures (biological material or expertise) that seek to prevent the malicious use of biology in biological weapons.
Biosafety

- Biosafety refers to the safety in a workplace (usually laboratory) that handles potentially harmful biological substances.
- Seeks to prevent *unintentional accidents and releases*.
- Some biosafety implementations will also serve as biosecurity measures, e.g. sterilisation routines and disposal of harmful biological waste material.
Infection Prevention and Control

Infection prevention and control (IPC) is a scientific approach and practical solution designed to prevent harm caused by infection to patients and health workers (e.g. hand hygiene, isolation, safe injection practise etc).
Global Health Security

Is threatened by breaches in

- biosecurity
- biosafety
- infection prevention and control (IPC)

resulting in outbreaks, epidemics – or pandemics
"A health threat anywhere is a health threat everywhere"

https://www.iom.int/outbreak-preparedness-and-response
How much security in biosecurity?

Newsletter 3/2018, Biosecurity Insight, Centre for Biosecurity and Biopreparedness

• After 9/11 2001: Emphasis on biodefense, military spending, weapons (of mass destruction), terrorism, and CBRN security threats (Chemical, Biological, Radiological and Nuclear).

• Later development
  • "all hazards approach"
  • “preparedness against biological threats whether of naturally occurring, accidental or deliberate nature”
  • EU Health Security Committee evolved from a focus on bioterrorism to include other transnational risks such as migration and pandemics
The European Union CBRN Risk Mitigation Centres of Excellence Initiative (EU CBRN CoE)

- launched 2010
- developed to help strengthen the institutional capacity of countries outside the European Union
- mitigation of and preparedness against risks related to CBRN material and agents
- fostering cooperation at national, regional and international levels.
- over 50 projects have been completed or are currently underway
**Project 54:** Capacity building for medical preparedness and response to CBRN incidents

- Middle Eastern Region (MIE): *It is essential that Iraq, Jordan and Lebanon build on their resources to respond and mitigate the consequences of a CBRN incident and following emergency situation*
Overall objective

• To enhance the systems in place for medical preparedness and medical emergency response to CBRN incidents.

• Insure that appropriate safety measures are being taken and health care measures are being provided by emergency departments, ambulance services and other providers.
Objectives

- Support the establishment of the National Training Centres in Medical Emergency in partner countries.
- Train medical and paramedical staff (first and secondary responders) to manage CBRN incidents, both in the field and in the hospital.
- Establish training curricula, guidelines and protocols on the medical management and treatment of different CBRN casualties from possible international best practices and standards.
- Produce a draft list of appropriate equipment for the National Training Centres to be able to deliver the training courses.
- Conduct practical exercises on medical response to the CBRN incidents.
- Promote the sharing of good practices in partner countries in terms of emergency medical services.
Project 54: Consortium

Mr. Andrew Proudlove

Dr. Mark Salter
The Consortium Leader

STRENGTHENING THE RULE OF LAW

- Capacity Building and Training
- Criminal Justice Research Projects
- Secure improvement to community safety
- Border security capacity building
- EU CBRN CoE Project Delivery Partner

http://www.scjs.eu/
Project 54: Consortium

Comprehensive Defence Division
- Prevention
- Protection
- Recovery
- Vulnerability analysis
- Consequence assessment
- Health
- Environment

- Main national supplier of CBRNE-knowledge and research, advice, recommendations and services (exercise, teaching, lab, reach-back....)
- «Resource pool» for the Armed Forces, defence sector and the civilian society
Project 54: Consortium

NIPH
- Prevention and detection of infectious diseases outbreak
- Emergency preparedness and risk assessment
- Outbreak investigation
- Poison information centre
- Infectious disease surveillance
- Vaccines and immunisation

National Preparedness laboratory

On Call service 24/7
Treatment Centre

Advisory Centre – Preparedness – Stockpiles – Guidance
**Work Package 1:**
- Initial Train the Trainer - Module 1
- Establish CBRNEMTCs
- Compile & deliver Inventory List

**Work Package 2:**
- Equip National Training Centre
- Practical Training
  - Trainers – Module 2
  - Trainees – Module 3 & 4
- Exercises

**Work Package 3:**
- 6 'Regional' 2-day Workshops
  - Probably 3 in Jordan & 3 in Lebanon
- Final Regional Workshop and follow-on Round Table Exercise
- Certifying training programmes delivered and/or integrating them with existing national training and educational programmes.

**INCEPTION PHASE:**
KO, FFMs and Scoping

**PHASE 1 (10 months):**
- June 2018

**PHASE 2 (20 months):**
- Separate EU CBRN CoE Project to buy and deliver inventory to the 3 Training Centres
- ISTC

**Timeline:**
- 01/09/2016
- 01/03/2017
- 01/01/2018
- 31/08/2019
Train medical and paramedical staff (first and secondary responders) to manage CBRN incidents, both in the field and in the hospital

- **Train the Trainer’s course**
  - CBRN hazards
  - 5 days
  - Completed autumn 2017

- **Practical Training for the Trainers**
  - Medical management of casualties
  - 5 days
  - Completed spring 2018

- **Medical First Response Training**
  - (At CBRN incident site)
  - 3 days

- **Medical Second Response Training**
  - (In the hospital)
  - 3 days
Training medical and paramedical staff
Training medical and paramedical staff
Training medical and paramedical staff
• Medical first response in CBRN incidents (Module 3)

• Medical second response in CBRN incidents (Module 4)
Mutual benefits for trainers and trainees

For trainers
- Part of international project
- Learning from other trainer partners
- Meeting trainees with hands-on experience
- Sense of making a difference

For trainees
- Improved knowledge and practical skills
Ebola virus disease in Guinea
Disease outbreak news
23 March 2014

“The Ministry of Health (MoH) of Guinea has notified WHO of a rapidly evolving outbreak of Ebola virus disease in forested areas south eastern Guinea”
Ebola – significance of international cooperation
Ebola

"This is a social crisis, a humanitarian crisis, an economic crisis, and a threat to national security well beyond the outbreak zones"

WHO Director General Margaret Chan,
September 2014
Clinical management of highly infectious diseases

Aims

• Ensure a safe working environment for health workers
• Provide high quality care and treatment for patients with highly infectious diseases – previously neglected
• Prevent spread of infection outside the unit
Infected health care workers in Europe and the USA

Spanish nurse suffering from Ebola shows signs of improvement

Presence of Ebola virus in Teresa Romero Ramos’s blood appears to be diminishing, says Spanish health ministry

Ashrita Kansam in Madrid
The Guardian, Sunday 12 October 2014 16.36 BST
Jump to comments (39)

Texas health officials say second health care worker at Dallas hospital tests positive for Ebola

Published October 15, 2014 • Foxnews.com

A second female health care worker at the Dallas hospital where Ebola patient Thomas Eric Duncan was treated has tested positive for the virus, Texas health officials confirmed Wednesday, as the state prepares for the possibility of more cases.

“We are preparing contingencies for more and that is a very real possibility.”
International cooperation: Highly infectious diseases

- Guidelines for IPC
  - HLIUs
  - PPE

- Standards of care
  - Clinical networks
  - Scientific publications
  - Transport

Workshop on prevention of transmission of Ebola virus in health care setting: from the first point of contact to the treatment of the patient.
4 November 2014, 09:00 - 17:00 CET
HITEC 2/280 - Luxembourg
Chair: DG SANCO – Health Threats Unit
• Disparities in Europe regarding design and equipment of isolation facilities.
• National and international collaboration should continue to share experiences, and provide standardized training and equipment
Consensus on appropriate PPE – hard to reach!
Ebola to Norway
7 October 2014
A doctor, who was recently in Africa treating Ebola patients, tested positive on Oct. 23.

The two nurses who contracted Ebola at a Dallas hospital were transferred to specialized units in Atlanta and Bethesda, Md., and have recovered.

A Spanish nurse contracted Ebola while treating a missionary who died in a Madrid Hospital.

New York Times, January 2015
• International clinical management teleconferences on EVD patients
• U.S.–European Clinical Network on Clinical Management of Ebola Virus Disease Patients in the U.S. and Europe*
Safe medevac and high EVD survival rate possible, but resource demanding

Europa + USA = 27 cases, 5 deaths
June 2018, Norway donates EpiShuttle patient isolation units to DRC Ebola response
The WHO Emerging Diseases Clinical Assessment and Response Network (EDCARN)

- A network of clinicians and other subject-matter experts involved in the clinical management of and research into EIDs, including experts from governmental and non-governmental organizations, academia, WHO, and other stakeholders.
- Coordinated and administered by the WHO Clinical Management Unit in the Pandemic & Epidemic Diseases Department at WHO headquarters in Geneva, Switzerland.
- Currently, over 80 clinical experts and 20 institutions are actively collaborating in EDCARN.
Summary and key messages

• Biosecurity, biosafety and infection prevention and control (IPC) are separate yet sometimes overlapping entities of great importance for global health security
• The global community must continue to join forces and build capacity
• Clinical management – improved capacity and capability are necessary for effective response by building trust, and for meeting the humanitarian objective.
Thank you for your attention!

Declaration of interests

Arne Broch Brantsæter is a shareholder in EpiGuard AS and one of the inventors of the transport isolator EpiShuttle