

Project on
Minimum Standards and Non-Binding Guidelines for
First Responders Regarding
Planning, Training, Procedure and Equipment
for Chemical, Biological, Radiological
and Nuclear (CBRN) Incidents

THE INTERNATIONAL CBRN TRAINING CURRICULUM

Updated on 1 August 2013



Foreword

The consequences of Chemical, Biological, Radiological and Nuclear (CBRN) emergencies may stretch national capabilities to their maximum extent. Responsibility for first response remains with individual nations and it is essential therefore that nations build on their resources to respond and mitigate the consequences of emergencies affecting lives, property and the environment. The development and adoption of Non-Binding Guidelines and Minimum Standards, facilitates and improves national response and mutual assistance.

The Non-Binding Guidelines and Minimum Standards for CBRN First Responders (NBG/MS), developed by NATO's Civil Protection Group, are a "package" of tools aimed at first responders to support planning and implementation of response to CBRN incidents. The NBG/MS helps to establish a common framework for international response to CBRN incidents and to enhance interoperability and cooperation of international response teams.

The International CBRN Training Curriculum is one of the three components of the NBG/MS. The other two components consist of the Response Guidelines document and the Advisory Support Team concept and modalities.

The first version of the International CBRN Training Curriculum was issued in 2006 and has been used as a basis to deliver several International Courses for trainers of first responders to CBRN incidents, via a network of dedicated Regional Training Centre's. This revised version takes into account both the views of responders and lessons learned from NATO international training courses and EADRCC field exercises.

I hope nations will find the International CBRN Training Curriculum a useful tool to support national and international CBRN training.

Ragnar BOE
Chairman of NATO's Civil Protection Group



Introduction

The International CBRN Training Curriculum provides a structure for a knowledge-based curriculum, including basic training courses for current and prospective first responders. The International CBRN Training Curriculum is designed to assist nations improve their emergency preparedness and response arrangements, complement national training systems and improve co-operation between first responders. In developing the training system, a number of principles were agreed.

Training should be :

- Adaptable and flexible to accommodate different emergency management structures within the nations.
- Optional and used by nations to complement and support national CBRN training programs as required. It is not intended to duplicate existing national training systems.
- Modular and focus on key functions of the immediate or short-term elements of the response. These modules can then be used in various combinations to meet the specific training needs of the nations.
- Dynamic and incorporate best practice and lessons learned and from real incidents.

For clarity, the term “First Responders” refers to individuals and teams that are involved in activities which address the immediate and short-term effects of a CBRN emergency. This

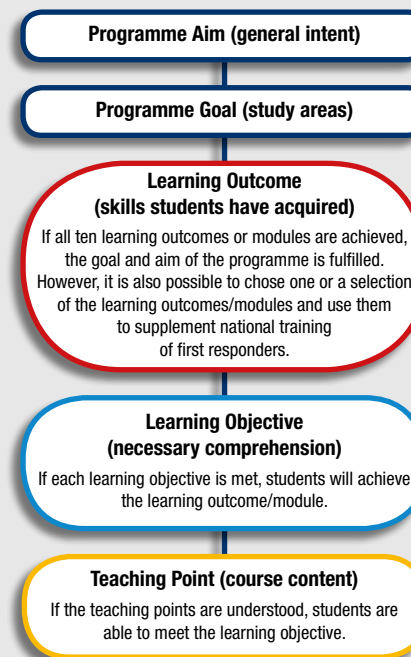
includes on-scene personnel from the police, fire brigades and health services acting to minimize the consequences of a CBRN emergency. It also includes personnel in hospitals, crisis management in situations and those involved in detection, verification and warning.



THE CBRN CURRICULUM

1. The CBRN Curriculum is divided into ten learning outcomes (also referred to as modules).
2. The learning outcomes can be used individually. Instructors can tailor the different learning outcomes of the curriculum to meet the individual needs of the audience or to complement a national training course for first responders.
3. Each learning outcome is built upon a number of learning objectives. These objectives consist of various components that support the overall outcome.
4. The teaching point, while not exhaustive, provides the understanding to achieve the learning objectives.
5. Instructors may determine the exact content of each module and develop activities accordingly.
6. A colour code facilitates use of the curriculum.

Figure 1. Structure of the training curriculum



The logic behind the structure is that if teaching points are understood, the learning objective is attained, leading to achievement of the learning outcome, etc.

Programme Aim (general intent):

To provide current and prospective first responders with minimum knowledge and skills required to improve national CBRN emergency preparedness and response arrangements, compliment national CBRN training and improve civil-military cooperation during an incident.

Programme Goal (study areas):

To understand the context and potential consequences of CBRN incidents and the actions to take during first response.



Learning Outcome 1:

Understand the security context behind national and international CBRN preparedness and response.

Learning Outcome 2:

Understand the methods employed to recognise a CBRN incident.

Learning Outcome 3:

Understand protection of responders and safety of victims.

Learning Outcome 4:

Understand the decontamination options at a CBRN incident.

Learning Outcome 5:

Understand basic medical and psychological considerations in relation to CBRN incidents.

Learning Outcome 6:

Understand the basic principles of detection and sample taking.

Learning Outcome 7:

Understand the principles of command and control in relation to CBRN incidents.

Learning Outcome 8:

Understand the implications of bilateral or international assistance for local first responders.

Learning Outcome 9:

Understand some of the operational implications between civil-military interaction.

Learning Outcome 10:

Understand the capabilities and limitations of local crisis and consequence management structures and key services.

On the following pages each Learning Outcome or Module (one per page) is illustrated together with Learning Objectives and Teaching Points. In order to distinguish Learning Outcomes, Learning Objectives and Teaching Points, the following colour code is used :

**Learning Outcome
(skills students have acquired).**

**Learning Objective
(necessary understanding).**

**Teaching Points
(course content).**



1. Understand the security context behind national and international CBRN preparedness and response.

Understand the changes to the global security environment which have influenced CBRN preparedness.

Describe the evolving global environment following the Cold War period which has impacted on national and international security:

- Free trade agreements
- Freedom of international movement
- Relaxation of borders (i.e. mainland Europe)
- Global organised crime (i.e. fundraising)
- Proliferation of conventional weapons and CBRN materials
- Growth of fundamentalism and extremism
- Uncontrolled and freely available information and expertise via internet
- Media effect - information dependant society
- Societies dependency on critical infrastructure and the potential for attack

Understand the fundamental objectives of terrorism.

Describe the basic objectives of terrorism:

- Fear and uncertainty (in the population)
- Casualties
- Economic impact
- Symbolic value (of target)
- Political instability
- Media and publicity

Awareness of potential methodologies employed by terrorists.

Describe different methods which terrorist could deploy in an attack:

- Conventional attacks – small arms, explosives (military/commercial explosives – improvised explosive device (IED))
- Use of CBRN material (deployed in isolation or via an explosive device)
- Asymmetric attack (unconventional methods of deployment)
- Use of secondary devices/attacks (against first Responders or public)
- Vehicle borne or person borne device (remote detonation or suicide)
- Postal (parcel bombs, letters containing powder etc)
- Hoax calls and devices

Understand the potential impact of CBRN incidents.

Describe the potential consequences of CBRN incidents including:

- Difficult response and recovery (resource intensive)
- Mass casualties
- Fear and anxiety
- Psychological impact (psycho-somatic reactions and potential overburdening of health facilities)
- Potential for civil disorder (additional pressure on law enforcement)
- Additional security precautions
- Criminal investigation
- Political sensitivities
- High media interest
- Potential economic impact

2. Understand the methods employed to recognise a CBRN incident.

Awareness of initial scene recognition.

Describe how various indicators could help confirm a CBRN incident:

- Threat information against specific buildings installations or locations (and pre-planned events)
- Information received by call takers indicating a potential CBRN incident
- Presence of a credible method of dispersal at the scene (device, explosion, chemical drum/tanker etc)
- Substance characteristics (i.e. smell, colour of residue/material, off gassing, dead foliage, presence of dead birds and animals etc)
- Presence of several casualties
- Casualty symptoms

Awareness of signs and symptoms.

Describe some of the features and effects of exposure to agents/weapons (blood, blister, choking, nerve agents and radiological materials) and Toxic Industrial Chemicals:

- Lethality of warfare agents versus Toxic Industrial Chemicals and some of the signs and indicators
- Entry into body (inhalation, ingestion, absorption through skin) and typical symptoms of exposure
 - Breathing difficulties
 - Blistering of skin and/or discolouration
 - Nausea, vomiting, salivation
 - Miosis, Rhinorrhoea
 - Convulsions
 - Loss of balance
 - Headaches
 - Paralysis
 - Loss of consciousness
 - Death

3. Understand protection of responders and safety of victims.

Understand how to protect first responders.

- Describe how to identify and manage hazard and risk:
- Approach the scene from upwind
 - Type and selection of personal protective equipment (understand various options)
 - Deployment of minimum numbers of responders to complete the task
 - Consider the potential for secondary devices - check routes, access corridors, Rendezvous Point (RVP) and marshalling areas etc.
 - Safe communication with response teams – use of radios, mobile or other electronic devices within exclusion zone (consider suspect device)

Understand wider public safety considerations.

- Describe risk reduction measures to protect the public from the actual primary hazards and potential threats (secondary devices etc):
- Consider evacuating immediate vicinity and beyond (depending on substance type, amount, method of dispersal (suspect device) and downwind risks)
 - Evacuate upwind and uphill if a chemical, biological or radiological agent is suspected
 - Establish cordon at the minimum safe distance from the release/device (e.g. 100 – 400m)
 - Consider the geography, terrain, building structures, enclosed spaces and potential targets
 - Consider wider public warnings

Describe methods to control spill or dispersal.

- Describe how to mitigate spillage of material/substance and prevent further leak in order to reduce size of the affected area:
- Stop ventilation systems (air conditioning), close doors/windows
 - Contain substance (solid, liquid)
 - Environmental spill kits and booms
 - Mitigate effect of gas cloud
 - Re-condense leaking gasses
 - Depressurise pressured tanks
 - Tank sealing kits

4. Understand the decontamination options at a CBRN incident.

Decontamination of victims, first responders, vehicles and equipment.



Understand the additional considerations.

Describe options and methods available to decontaminate victims, first responders, vehicles and equipment

- Decontamination options:
 - Emergency Decontamination (immediate life saving decontamination)
 - Public Mass Decontamination (normally specialist resources)
 - Clinical Decontamination (wounded casualties on stretchers)
 - Responder Decontamination (including vehicles and equipment)
- Capability requirements – equipment, techniques and decontamination area setup
 - Options and methods are dependent on:
 - Substance/agent used
 - Needs for medical treatment and post decontamination care
 - Number of victims
 - Categorisation of victims – (walking, stretcher)
 - Weather conditions
 - Consider victim types and implications for decontamination:
 - Families
 - Children
 - Gender (male/female)
 - Religious issues

Describe additional decontamination tasks and implications:

- Collection of contaminated water
- Management of contaminated clothing and property
- Forensic retrieval (evidence gathering)
- Decontaminate and service operational equipment

5. Understand basic medical and psychological considerations in relation to CBRN incidents.

Understand basic life saving considerations.

- Appreciate the limitations a CBRN environment poses to first aid treatment:
- Remove victims from the primary hazard zone (Hot Zone)
 - Describe different triage methodologies – primary triage – secondary triage etc (saving saveable life – the least inflicted first)
 - Prioritise the medical response and appreciate the need for urgency when implementing emergency decontamination and life-saving operations
 - Avoid unrealistic expectations

Appreciate the psychological effects of CBRN incidents.

- Describe the potential psychological effects of exposure to CBRN agents for both first responders and victims:
- Potential for significant numbers of “worried-well” – psycho somatic symptoms
 - Consider the need to provide accurate information
 - Victims and the wider public will need reassurance from the authorities
 - Responders will require post incident debriefs



6. Understand the basic principles of the detection and sample taking.

Understand the basic methods of detection.

- Describe various methods of detection, identification and monitoring
- Understand the basic principles of detection:
- Solid, liquid, gas,
 - Radiological
 - Biological

Understand the most common types of equipment in use.

- Describe the most common detectors used by first responders:
- Chemical Warfare Agent (CWA) detectors
 - Explosive
 - Oxygen, CO₂, CO
 - Radiation
 - Indicator paper
 - Indicator tubes
 - Portable library of chemical agents

Understand basic sample taking techniques.

- Describe various sample collection equipment (glass or plastic containers)
- Understand various sample taking procedures (including marking and protection requirements)



7. Understand the principles of command and control in relation to CBRN incidents.

Understand the process of information gathering.

Describe the actions and considerations when gathering information:

- Approaching the scene
- Recognise signs and indicators
- Determine whether CBRN or Hazmat
- Estimate number of casualties
- Estimate resource requirements
- Sharing information with other agencies
- Carry out risk and hazard assessment

Understand the process of scene management.

Describe the actions and considerations when managing the scene:

- Establish incident command structure
- Establish multi-agency command point in safe area
- Establish cordons (Hot zone, Inner and Outer)
- Identify and establish quarantine areas (triage and decontamination)
- Identify Rendezvous Points (RVP's) and marshalling areas for oncoming resources
- Consider scene preservation for investigation

Understand the need to coordinate resources on scene.

Describe the considerations when coordinating on coming resources:

- Which organisation is responsible for which task (e.g. rescue, detection, decontamination, casualty management, investigation etc)
- Coordinate and agree task priorities
- Implement safe systems of work between responder organisations
- Establish methods of communication between responder organisations
- Relief strategy for prolonged operations

Understand the principles of Hot Zone Management.

Describe the considerations when implementing Hot Zone Management:

- Consider safe cordon distance (e.g. 100 – 400m)
- Establish Hot, Warm and Cold Zones (within Inner and Outer cordon)
- Consider potential for secondary devices
- Restrict access to protected responders only
- Evacuate Hot Zone and carry out rescue operations
- Triage of victims and casualties
- Establish decontamination process (victims and responders)
- Casualty management (e.g. pre and post decontamination)
- Provision of warning and advice to public

Awareness and potential impact of follow up operations, taking into account the nature, scale and duration of an event.

Describe the potential need for additional and specialist support to manage:

- Environmental impact
- Effect on the population
- Information to the public (including media)
- Ongoing hazard prediction including:
 - Dispersion modelling
 - Radiological monitoring
- Provision of victim support
- Counselling for victims and responders
- Site decontamination and remediation
- Evidence preservation
- Forensic/criminal investigation
- Responder welfare arrangements for prolonged operations

8. Understand the implications of bilateral or international assistance for local first responders.

Understand the options for international assistance.

Understand the system for requesting and receiving international assistance

Awareness of the primary international assistance coordination centres; EADRCC (NATO HQ Brussels), MIC (EU Brussels) and ERCC OCHA (Geneva) and understand their role

Awareness of the functions of LEMA and OSOCC in supporting national authorities and international coordination

Understand the problems and challenges likely to arise during an international CBRN response.

Understand the differences and implications of international response:

- Command structures
- Procedures
- Understanding of procedures
- Language difficulties
- Equipment
- interoperability
- Border crossing with equipment
- Communication frequencies
- Unclear lines of command
- Unclear assignment of responsibilities
- Different standards of security and environment protection

Appreciation of bilateral agreements and other international agreed practices



9. Understand some of the operational implications between civil-military interaction.

Understand the type of civil-military interaction in response to a CBRN incident.

Understand the differences between civil-military cooperation and coordination
Appreciate the different structures and operational tasks of civil and military CBRN responders

Understand the potential challenges in civil-military interaction.

Understand some of the potential differences between civil and military responders:

- Cultural
- Mandatory
- Incident/mission objectives
- Planning processes
- Rapid initial response verses protracted capability
- Operational resources and capabilities
- Systems of working
- Information sharing (classified intelligence)
- Command structures (and primacy)
- Task allocation
- Interoperability

Awareness of international regulations for the use of Military Assets in disaster relief.

Awareness of the regulations for when and how military can assist civilian authorities:

- Oslo Guidelines

10. Understand the capabilities and limitations of local crisis and consequence management structures and key services.

Understand the national response system.

Awareness of the general key elements of national and local consequence management structures including first responder organisations:

- Police
- Fire Brigades
- Health Services (including hospitals)
- Military response
- Civil defence
- Crisis management institutions (and those involved in detection, verification and warning)

Awareness of the tasks undertaken by first responders and an outline of response times

Awareness of general command structures at local, regional and national levels





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