



INSTITUTE FOR DEFENSE ANALYSES

**Allied Medical Publication AMedP-7.6(A),
Commander's Guide to Medical
Operations in Support of CBRN
Defensive Operations:
STUDY DRAFT 1**

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NATO

AMedP-7.6

**COMMANDER'S GUIDE TO MEDICAL
OPERATIONS IN SUPPORT OF CBRN
DEFENSIVE OPERATIONS**

**Edition A
STUDY DRAFT 1**



NORTH ATLANTIC TREATY ORGANIZATION

ALLIED MEDICAL PUBLICATION

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TABLE OF CONTENTS

CHAPTER 1	INTRODUCTION	1-1
1.1.	BACKGROUND	1-1
1.2.	AIM.....	1-1
1.3.	SCOPE	1-2
1.4.	CHALLENGES TO MEDICAL OPERATIONS IN A CBRN ENVIRONMENT	1-3
1.4.1.	Unusual Casualty Types	1-3
1.4.2.	Contaminated or Contagious Casualties.....	1-4
1.4.3.	Unusual Casualty Numbers	1-5
1.4.4.	Presentation of CBRN Casualties	1-6
1.4.5.	Medical Treatment Facilities (MTFs) within Contaminated Areas	1-6
1.4.6.	Conventional Casualties in a CBRN Environment	1-7
1.5.	CBRN MEDICAL COMMAND AND CONTROL	1-7
CHAPTER 2	THE ALLIANCE CONCEPT OF MEDICAL SUPPORT TO CBRN DEFENSIVE OPERATIONS.....	2-1
2.1.	MEDICAL ASPECTS OF CBRN DEFENCE ENABLING COMPONENTS.....	2-2
2.1.1.	Detection and Medical Operations	2-2
2.1.2.	Information Management and Medical Operations	2-3
2.1.3.	Physical Protection and Medical Operations.....	2-4
2.1.4.	Medical Countermeasures and Casualty Care in a CBRN Environment	2-5
2.1.5.	Hazard Management and Medical Operations.....	2-6
2.2.	MEDICAL SUPPORT DURING OPERATIONS IN A CBRN ENVIRONMENT/INCIDENT	2-8
2.2.1.	Planning for Medical Support Pre-incident.....	2-8
2.2.2.	Medical Support During-incident.....	2-9
2.2.3.	Executing Medical Support Post-incident.....	2-9
2.3.	MEDICAL SUPPORT TO CBRN DEFENCE AGAINST TERRORISM	2-10
2.4.	EDUCATION AND TRAINING FOR CBRN MEDICAL SUPPORT	2-10
CHAPTER 3	DETECTION AND MEDICAL OPERATIONS.....	3-1
3.1.	HEALTH AND ENVIRONMENTAL SURVEILLANCE	3-1
3.2.	DISEASE SURVEILLANCE	3-1
3.3.	OPERATIONAL EPIDEMIOLOGY	3-2
3.3.1.	Clinical Investigations.....	3-2
3.3.2.	RDOIT	3-2
3.3.3.	MRIIT	3-2
3.3.4.	SIBCRA.....	3-2

3.4.	CBRN FORENSICS	3-2
3.5.	LABORATORY SUPPORT FOR DETECTION	3-2
CHAPTER 4	INFORMATION MANAGEMENT AND MEDICAL OPERATIONS	4-1
4.1.	CBRN MEDICAL INFORMATION REQUIREMENTS	4-1
4.2.	CBRN MEDICAL COMMUNICATION AND COLLABORATION	4-1
4.3.	CBRN CASUALTY ESTIMATION	4-2
4.4.	MEDICAL RECORD KEEPING	4-2
CHAPTER 5	PHYSICAL PROTECTION	5-1
5.1.	INDIVIDUAL PROTECTIVE EQUIPMENT	5-1
5.2.	COLLECTIVE PROTECTION	5-1
CHAPTER 6	MEDICAL COUNTERMEASURES AND SUPPORT	6-1
6.1	MEDICAL COUNTERMEASURES	6-1
6.2.	CBRN CASUALTY MANAGEMENT	6-2
6.2.1.	Treatment of CBRN Casualties	6-3
6.2.2.	Allocation of Medical Resources	6-3
6.2.3.	Medical Regulating	6-3
6.3.	CBRN MASS CASUALTY	6-4
6.4.	PSYCHOLOGICAL CASUALTIES	6-4
6.5.	LABORATORY SUPPORT FOR CBRN CASUALTY MANAGEMENT	6-4
CHAPTER 7	HAZARD MANAGEMENT AND MEDICAL OPERATIONS	7-1
7.1.	CASUALTY DECONTAMINATION	7-1
7.2.	MEDICAL EVACUATION IN A CONTAMINATED ENVIRONMENT	7-1
7.3.	RESTRICTION OF MOVEMENT	7-1
7.4.	DEDICATED CONTAGIOUS DISEASE TREATMENT FACILITIES	7-2
CHAPTER 8	CBRN MEDICAL LOGISTICS	8-1
8.1.	MEDICAL TREATMENT FACILITIES	8-1
8.2.	HOST NATION SUPPORT CAPABILITY	8-1
8.3.	SUPPLY	8-1
ANNEX A	DECISION AUTHORITIES MATRICES FOR MEDICAL OPERATIONS IN SUPPORT OF CBRN DEFENSIVE OPERATIONS	A-1
ANNEX B	ACRONYMS AND ABBREVIATIONS	B-1
ANNEX C	REFERENCES	C-1
ANNEX D	GLOSSARY	D-1

CHAPTER 1 INTRODUCTION

1.1. BACKGROUND

1. Incidents involving the employment or threat of chemical, biological, radiological, and nuclear (CBRN) weapons and other toxic materials pose serious challenges to Allied military operations worldwide. CBRN incidents include the detonation of CBRN weapons and the accidental or deliberate release of chemical and biological warfare agents, toxic industrial materials (TIMs), biological pathogens, and radioactive material. Commanders must consider the possibility that CBRN incidents will occur and should develop appropriate CBRN defensive measures against the effects of these incidents when planning and conducting operations.
2. Medical support—through the prevention of illness or injury, the detection of CBRN attacks via health and disease surveillance, the evacuation and treatment of CBRN casualties, and the rapid return to duty of as many individuals as possible—is a critical component of CBRN defence. While Allied policy and doctrine acknowledge that medical support is primarily a national responsibility, the Combined Joint Force Commander (CJFC) directs medical support capabilities and individual and unit health-related practices to prevent or mitigate any effects of CBRN incidents that would impair or preclude the joint force from achieving its objectives. The Medical Advisor, Medical Director, and medical staff are responsible for advising the CJFC on medical aspects of CBRN defence, for monitoring the health of the force, and for guiding and integrating all medical support capabilities available to the command.
3. As detailed in this document, CBRN incidents pose several unique challenges to medical operations. Many aspects of CBRN medical support will be different from conventional medical support and may require unusual coordination and collaboration with non-medical forces. In addition, medical forces have a special role in CBRN defence since these forces may provide the primary means of detection of covert attacks or other unrecognized CBRN incidents.

1.2. AIM

1. This publication is intended to inform commanders and provide guidance to Medical Advisors, Medical Directors, and medical staff at the CJFC level on the development and execution of CBRN medical courses of action (COAs). It explicitly considers the interactions of medical staff elements with operational staff (particularly CBRN defence staff), the role of medical support in CBRN defence COAs, and the interface with host nations, international and non-governmental organizations (NGOs), and member nations. This publication focuses on those operational-level aspects of medical support that are unique to CBRN incidents or would differ from conventional medical support when conducted in a CBRN environment.
2. AMedP-7.6, *Commander's Guide to Medical Operations in Support of CBRN Defensive Operations*, is subordinate to STANAG 2596 (AJMedP-7), *Allied Joint Medical Doctrine for Support to CBRN Defensive Operations*, which provides

doctrine for medical support to the North Atlantic Treaty Organization (NATO) multinational joint CBRN operations and essential medical CBRN defence background for medical planning staffs. STANAG 2542 (AJMedP-1), *Allied Joint Medical Planning Doctrine*, describes the medical planning process for allied joint operations. STANAG 2461 (AMedP-7.1), *The Medical Management of CBRN Casualties*, is a parallel document to AMedP-7.6 and guides CBRN casualty management from point of exposure through care at a Role 3 Medical Treatment Facility (MTF). STANAG 2228 (AJP-4.10), *Allied Joint Medical Support Doctrine*, provides overarching medical support doctrine for NATO multinational joint operations. STANAG 2451 (AJP-3.8), *Allied Joint Doctrine for Chemical, Biological, Radiological, and Nuclear Defence*, provides CBRN defence doctrine for NATO multinational joint operations.

1.3. SCOPE

1. AMedP-7.6 encompasses all aspects of CBRN medical support at the operational level, with specific attention given to the flow of resources, information, and casualties to, from, and among medical units. The operational level is “the level at which campaigns and major operations are planned, conducted, and sustained to accomplish strategic objectives within theatres or areas of operations.”¹ AMedP-7.6 contrasts with AMedP-7.1, which considers medical support in MTFs and at the tactical unit level.
2. The Medical Advisor is the senior medical staff officer in a formation headquarters that is responsible for ensuring that the commander and his staff are properly aware of the health and medical implications of their actions and any related issues connected to the operation. AMedP-7.6 provides commanders, staffs, and medical advisors guidance on the medical implications of actions taken in all phases of operations to mitigate the effects of CBRN incidents.
3. The Medical Director is the functional head of the medical services in a formation or theatre of operations. He may also have the additional responsibility of being the Medical Advisor to a senior commander. AMedP-7.6 provides the Medical Director guidance or direction on the development of medical COAs and their integration within operational COAs in a potential CBRN environment.
4. The Medical Coordination Cell (MEDCC) is the executing body of the medical organization. It works under the direction of the Medical Director and coordinates multinational, joint, and multifunctional medical issues. AMedP-7.6 identifies and provides guidance on CBRN-specific medical issues that require coordination through the MEDCC.
5. This publication is applicable across the full spectrum of potential NATO operations (Article 5 as well as non-Article 5) from crisis through conflict. It considers the development and execution of CBRN medical COAs in all phases of operations, for all types of operations, and for CBRN incidents of any scale.

¹ NATO agreed term, Terminology Tracking Form (TTF) 1991-0008, modification agreed 2008-11-15.

1.4. CHALLENGES TO MEDICAL OPERATIONS IN A CBRN ENVIRONMENT

The conduct of operations in a CBRN environment poses significant challenges to medical support forces worldwide. These challenges (discussed in the following subsections) influence planning and execution of medical support operations in a number of different areas. At the operational level, the needed response to these CBRN challenges will focus most strongly on training and education, resource management and logistics support, and command, control, and communications.

1.4.1. Unusual Casualty Types

1. The types of illnesses and injuries afflicting casualties from a CBRN incident are not those normally managed in the military medical support system. Medical units are designed, staffed, and equipped to treat conventional combat trauma casualties and other non-CBRN health threats to the force. Military medical personnel do not have any modern experience managing either CBRN casualties or conventional casualties in a CBRN environment.

2. Five types of casualties can result from CBRN incidents:

- a. Chemical casualties result from inhalation, ocular, and/or skin exposure to chemical agents. Clinical signs and symptoms will vary by agent and route of exposure and include systemic intoxication and/or local effects, such as chemical burns. These signs and symptoms can manifest either promptly following exposure or after several hours' delay. Follow-on casualties may occur from residual contamination or from migration of agent via pick-up and transfer. Some individuals may develop symptoms and become casualties without knowing the source of their exposure.
- b. Biological casualties result from exposure to disease-inducing micro-organisms or biological toxins and may be difficult to differentiate from disease and non-battle injury casualties. Onset of illness can range from hours to days or even weeks after exposure. If a biological incident is known to have occurred, this delay between exposure and onset time may provide an opportunity to avoid some fraction of casualties among exposed personnel through the use of prophylaxis. Contagious biological casualties create additional risk and additional requirements for reporting, casualty management, and infection control.
- c. Radiological casualties result from exposure to ionizing radiation and can occur in incidents in which radiation is deliberately or accidentally released (e.g., the use of radiation dispersal devices or the accidental release of radiation from nuclear, industrial, or research facilities). In addition, in incidents involving the use of improvised nuclear devices or nuclear weapons, some casualties may occur solely as the result of exposure to ionizing radiation. The onset of symptoms in radiation casualties can be delayed for hours, days, or even weeks, and the severity of these symptoms may not correlate with the underlying severity of illness. As in chemical incidents, follow-on casualties may occur from residual contamination in the initial hazard area or from pick-up and transfer of radioactive material.
- d. Nuclear casualties are casualties caused by a nuclear detonation. Prompt nuclear casualties will be present with a combination of thermal,

overpressure, trauma, and radiation injuries that require immediate medical care. Casualties resulting solely from exposure to ionizing radiation—including those resulting from fallout—may be delayed for an extended period of time.

- e. TIM casualties result from the inhalation, ocular, and/or skin exposure to TIMs. Clinical signs and symptoms will vary by the specific material and route of exposure and include systemic intoxication and/or local effects (e.g., chemical burns). These signs and symptoms can manifest either promptly following exposure or after several hours' delay. TIMs are toxic substances used for industrial, commercial, medical, or other non-military purposes. When military operations are conducted in areas that contain facilities for manufacturing, storing, and transporting these materials, military personnel are vulnerable to accidental or deliberate exposure as a consequence of friendly action, adversary action, or accidents. Exposure to TIMs can have short-term and long-term health effects, the nature and severity of which depend on the type of material and the quantity released.

In many instances, CBRN casualties may also be suffering from conventional injury. AMedP-7.1 contains extensive information on the characteristics of CBRN agents, the types of CBRN casualties, their clinical signs and symptoms, and possible medical countermeasures and treatment options. It also provides guidance on the medical management of CBRN casualties of various types.

3. Management of the atypical illnesses and injuries sustained by CBRN casualties may require a different mix of medical personnel, equipment, pharmaceuticals or other consumables, and laboratory support than that needed for conventional casualty management. Further, the rates at which these resources are used over time may also be different.

4. Since WWI, CBRN incidents have been rare, and Allied military medical personnel generally have no experience in caring for the casualties that would result from these incidents. Consequently, there could be delays in recognizing that an incident has occurred, delays in diagnosis of CBRN injuries or illness in casualties, and inefficiencies in the application of medical resources. To minimize the negative impact that this lack of familiarity would cause, CBRN medical support operations must place increased emphasis on training and education, contingency planning and response preparation in advance of an incident, situational awareness, and command, control, and communications.

1.4.2. Contaminated or Contagious Casualties

1. The potential for casualties to be contaminated or contagious is a unique and important feature of CBRN incidents. Rapid assessment and mitigation of contamination and the risk of contagion are critical for sustainment of casualty management and should be a command priority. Otherwise, such casualties may constitute a significant risk to the medical personnel charged with caring for them or to other patients. In addition, contaminated or contagious patients can indirectly create added risks via the contamination of equipment and facilities or create an expanding operational burden because of the need to institute decontamination or infection control procedures throughout all levels of care. Operational-level medical

staff should be urgently notified of CBRN incidents to enable the timely implementation of appropriate mitigating measures.

2. To be most effective and timely, casualty decontamination should be conducted at the tactical level. AMedP-7.1 describes procedures for CBRN casualty hazard management. Commanders must ensure that medical personnel are trained and equipped to manage contaminated or contagious casualties in the prescribed manner and to protect themselves and their environment from further contamination.

3. Doctrinally, units will decontaminate and transport their own chemical casualties. Commanders must ensure that these contamination-reduction operations are coordinated and that the suspected presence of CBRN is ascertained and communicated among the affected units. Regardless of how the responsibility for casualty decontamination is assigned, the decontamination status of a casualty needs to be recorded in a standard and apparent manner at all locations from the point of wounding through admittance to an MTF. Despite doctrine, the Combined Joint Operations Area (CJOA) medical advisor/director must ensure that the medical system is prepared for the arrival of contaminated casualties and has a standard protocol for identifying and decontaminating these casualties.

4. Many hazard-avoidance methods, such as the use of individual protective equipment (IPE), have the associated risks of heat stress, dehydration, and accidents due to impeded vision or movement. Medical Advisors must be prepared to communicate these risks and the procedures for mitigating these risks. In the event of a CBRN incident involving a contagious biological agent, Medical Advisors should coordinate with operational staffs to provide advice and support on the implementation of medical countermeasures and restrictions of movement—alone or in combination—in a manner that controls the spread of disease while minimizing the adverse effects on operations.

1.4.3. Unusual Casualty Numbers

1. CBRN incidents may generate large numbers of casualties, in excess of those normally managed within the military medical support system. In combination with unusual or unique requirements for treatment, large numbers of CBRN casualties will greatly strain medical resources, especially low-density equipment and personnel. CBRN incidents are very likely to result in a mass casualty (MASCAL) situation at the tactical unit level and at MTFs. Depending on the type and scale, CBRN incidents have the potential to generate significant shortfalls in medical resources at all levels of care.

2. Medical COAs in CBRN contingencies should address changes in demand for material and treatment resources and identify those resources most likely to be exhausted at various levels and at various types of facilities. CBRN medical COAs should include plans for augmentation of resources through resupply, reallocation, and unit/personnel augmentation from within or from outside the CJOA. Medical staff should also identify and coordinate any requirements for non-medical forces to sustain medical operations, such as security forces to enforce Restriction of Movement (ROM) or additional decontamination resources. Depending on the type and scale of incident, commanders should consider specific MASCAL COAs such

as in-unit or stadium care with medical augmentation, to provide adequate care when MTFs would otherwise be overwhelmed.

3. The estimation of the numbers, types, and flow of casualties expected from a CBRN incident is a key component of CBRN medical planning because it provides commanders, Medical Advisors, Medical Directors, and operational staffs the information needed to anticipate and mitigate shortfalls in medical resources. CBRN casualty estimates are also used to evaluate COAs that use medical and/or non-medical CBRN defensive capabilities. The development of CBRN casualty estimates will require significant interaction between medical staff and other staff elements to acquire needed inputs. AMedP-7.5, *NATO Planning Guide for the Estimation of CBRN Casualties*, provides a methodology for estimating casualties that occur over time following a CBRN incident.

1.4.4. Presentation of CBRN Casualties

1. CBRN casualties can occur with little or no warning. Many types of CBRN incidents will generate prompt casualties, and, even when a delay occurs between exposure and symptom onset, a common initial time of exposure will likely result in a clustering of symptom onset times among exposed personnel.

2. The abrupt presentation of CBRN casualties, the prospectively large number of casualties, and unique CBRN medical care requirements increase the likelihood of a MASCAL situation. Resource management will be an even greater challenge in such circumstances, particularly at the tactical level. Medical COAs must ensure that local needs can be met wherever a CBRN incident occurs within the CJOA.

3. The presentation of CBRN casualties may be the first indicator of a clandestine CBRN attack. This situation places medical units in the unusual role of serving as the commander's detection asset for attacks of this type. Medical units and medical support capabilities must have processes in place for acquiring and communicating information on CBRN casualties to the appropriate organizations within an operationally relevant timeframe. This information will allow the commander to assess whether an attack has occurred and to direct the implementation of mitigating medical and non-medical COAs in response.

1.4.5. MTFs within Contaminated Areas

1. MTFs may have to operate in areas that are contaminated or that have restrictions that limit movement of personnel and materiel into and out of the MTF. Such operations may require medical personnel to make extensive use of individual and collective protection.

2. To ensure that medical operations can be sustained in a contaminated area, medical personnel must be trained and equipped to operate while using individual protective equipment and/or to prevent contamination of collectively protected facilities. Contiguous hazard areas must be avoided when moving casualties to and from MTFs, and evacuation and supply routes and modes of transport need to be coordinated accordingly. Medical, CBRN, and operational staff should coordinate on tasking CBRN defence units or other units as needed to identify contaminated routes and other hazard locations.

3. If a CBRN incident occurs at or near an MTF, the residual hazard may be so extensive that it prevents continued operations at that facility. The facility must then be moved, or its functions must be assumed by other MTFs in the area. When planning for operations where there is a risk of a CBRN incident, planners may wish to consider the potential need for facility movement when selecting initial MTF deployment sites. They may also need to develop plans for lateral movement of casualties if a given MTF becomes unavailable during an operation. Planners should also consider the rapid deployment of Allied units as replacements for MTFs in the CJOA.

1.4.6. Conventional Casualties in a CBRN Environment

1. If a CBRN incident occurs during an operation, medical support will be needed for conventional casualties and for CBRN casualties. The medical load from the combination of conventional and CBRN casualties will exacerbate the demand on medical resources and increase the likelihood of a MASCAL event.
2. Planning for sustained medical operations in a CBRN environment must consider conventional medical care requirements when augmenting or reallocating personnel, equipment, and consumables. Depending on the scale of the ongoing operation and the scale of the CBRN incident, triage criteria and methods may need to be adjusted and/or alternative medical management strategies may need to be adopted to balance the competition for scarce high-value resources.
3. Current doctrine and procedures should ensure that no known or suspected contaminated personnel or casualties enter an MTF. Even so, medical facilities may wish to consider segregating conventional and CBRN casualties when possible to facilitate the efficient use of treatment resources and to minimize risk of contamination or contagion. For example, specific facilities could be designated as "contagion" facilities for the sole purpose of managing contagious casualties.

1.5. CBRN MEDICAL COMMAND AND CONTROL

1. NATO's medical command and control structure is defined in AJP-4.10. As noted therein, while the provision of medical care is, in principle, a national responsibility, NATO commanders must ensure that the medical support provided is in accordance with the medical principles, policies, and directives established in Military Committee (MC) 326/3, *NATO Principles and Policies of Medical Support*. To that end, commanders, with the advice and assistance of their staff, determine medical support requirements for the mission and coordinate medical planning and support within the CJOA.
2. Commanders are typically granted coordinating authority over medical assets deployed to support the assigned mission. This responsibility includes the authority to redistribute medical assets within the force as needed. Redistribution of medical assets may be a key component of the medical response to a CBRN incident, with casualties occurring in unusual numbers, at unusual times, and with unusual injuries.
3. Nations can contribute specialized medical teams to Alliance missions, such as the Medical Radiation Incident Investigation Team (MRIIT) and the Rapidly Deployable Outbreak Investigation Team (RDOIT). The composition and

capabilities of these teams are described in AMedP-7.4 and AMedP-7.7, respectively. These specialized medical units should normally be considered medical assets and fall under the medical chain of command.

4. Medical staffs must define and coordinate the necessary organizational and logistic support for specialized medical teams in advance of their deployment. In addition, medical staffs must define the content and format of the information collected by these teams and the processes for its communication and analysis.

CHAPTER 2 THE ALLIANCE CONCEPT OF MEDICAL SUPPORT TO CBRN DEFENSIVE OPERATIONS

1. CBRN defensive operations are an essential part of NATO's CBRN defence concept, as described in MC 0603, *NATO Comprehensive CBRN Defence Concept* and elucidated in AJP-3.8. AJP-3.8 defines CBRN defence as "those plans and activities intended to mitigate or neutralize adverse effects on operations and personnel resulting from: the use or threatened use of CBRN weapons and devices; the emergence of secondary hazards arising from counter-force targeting; or the release, or risk of release, of TIM into the environment."
2. MC 0603 and AJP-3.8 identify five enabling components of CBRN defence: 1) detection, identification, and monitoring; 2) information management; 3) physical protection; 4) medical countermeasures and support; and 5) hazard management. Together, these components, when implemented, can deter CBRN incidents, protect NATO forces from the effects of CBRN incidents, and recover combat capability. These five components enable NATO forces to accomplish the mission and maintain freedom of action in a CBRN environment.
3. The medical countermeasures and support component of CBRN defence is a contribution uniquely associated with medical services. As shown in Figure 2-1, however, all other enabling components of CBRN defence have medical aspects or areas in which medical expertise and capabilities may be sought. Commanders will seek the advice of their Medical Advisor, in conjunction with the CBRN staff and other appropriate personnel/entities, and will advise on CBRN defence. Medical Directors will be charged with developing and executing medical COAs in support of operational COAs.
4. The following sections provide definitions of these five enabling components, describe the medical aspects of each, and identify those medical issues and tasks that require command decisions or direction. Figure 2-1 serves as the organizing construct for the remainder of this document, as Chapters 3 through 7 consider the medical aspects of each component in detail. Chapter 8 discusses CBRN medical logistics support, which is required for all components.

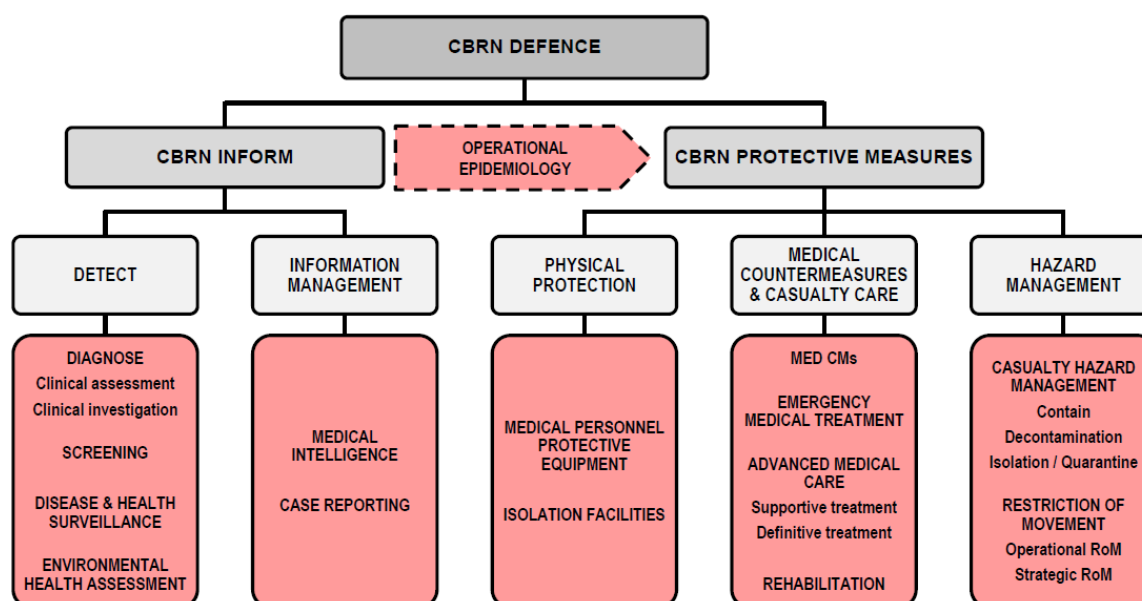


Figure 2-1: Medical Aspects of CBRN Defence Enabling Components

2.1. MEDICAL ASPECTS OF CBRN DEFENCE ENABLING COMPONENTS

2.1.1. Detection and Medical Operations

1. AJP-3.8 defines detection as the discovery, by any means, of the presence of CBRN substances. The goal of detection capabilities is to detect hazards at the earliest possible opportunity and to provide timely alerts to commanders and forces so that appropriate avoidance and response actions can be initiated.
2. The CBRN defence forces use point and stand-off detection systems to monitor the environment for indications of a CBRN hazard. Commanders can seek medical advice to clarify the meaning and implications of information provided by these systems or from other indicators of CBRN attack. For example, detection systems may not be able to differentiate biological organisms naturally present in the environment from those that have been deliberately introduced into an environment or population. Medical staff expertise related to the relevant characteristics of the organism itself and of the manifestation of associated disease—naturally occurring and induced—will provide crucial information to commanders charged with making a determination that an attack has occurred.
3. Detection of a CBRN hazard within a CJOA can have a significant impact on the conduct of operations and requires commanders to initiate a number of mitigating actions, balancing the often-competing requirements to minimize near-term operational risk, to protect the health of the force, and to accomplish the mission. In a CBRN environment, response options will typically include medical elements, will require the use of medical units, and/or will have a medical impact on soldiers. Medical advisors and their staffs must be prepared to articulate quickly and clearly the range of potential CBRN response options, communicate their costs and benefits, and identify the requirements for implementation.
4. Medical forces have a primary role in the detection component of CBRN defence through health and disease surveillance, especially for biological agents. If

point and stand-off detection systems fail to detect an extant CBRN hazard, manifestation of illness within humans, military animals, or local fauna may provide the first indication that a hazard exists. Successful detection by this means requires standardized, widespread, and systematic health monitoring of personnel. It also requires the communication of disease and health surveillance data and the integration of those data with information generated via environmental sampling and analysis and through medical intelligence collection activities. The MEDCC should have situational awareness across the CJOA and serve as the watch centre for this information.

5. When a CBRN incident is suspected, commanders may direct medical personnel or specialized medical capabilities (e.g., RDOIT or MRIIT) to support targeted surveillance, reconnaissance, and survey actions. Medical advice and support may also be needed to support investigations that use intelligence collection assets or CBRN defence units for such missions.

2.1.2. Information Management and Medical Operations

1. CJCFs are responsible for information management, defined in AJP-6, *Allied Joint Doctrine for Communications and Information Systems*, as “the organization and control of information to support coalition missions, consultation, decision-making processes, and operational requirements.” In addition, commanders are responsible for ensuring that Communications and Information Systems (CIS) are planned, coordinated, adequate, and effective throughout the deployed force. Each staff element plans and executes the collection and analysis of information in its functional area, shares information with other elements, and provides inputs to the common operational picture. Medical Directors and their staffs are, consequently, responsible for managing CBRN medical information and for supporting the integration of medical information with CBRN defence information management and across the force.

2. Effective CBRN defence depends on timely, complete, and accurate situational awareness. The role of medical information in CBRN situational awareness is crucial and may be more urgent and high profile than in conventional operations. If a CBRN incident occurs, Medical Advisors, using the MEDCC, must identify the content and urgency of the medical information required to support command decisions. Medical Directors are then responsible for establishing any standard operating procedures (SOPs) for CBRN case reporting, in addition to standard medical case reporting. Because of the unique nature of CBRN incidents, all medical information and advice must be coordinated through the Medical Advisor to avoid confusion, inconsistency, or inefficiency in resource use.

3. In any operation where initial health risk assessments include potential CBRN exposure, Medical Advisors advise the commander on the health risks associated with the assessed CBRN threat. This advice should include the outputs of CBRN casualty estimation and an assessment of the implications of the expected number, type, and flow of casualties. Medical advisors should also understand and communicate the potential operational implications of variations in national policies on the use of medical countermeasures, including immunization against specific biological agents and the use of pre- and post-exposure chemoprophylaxis or pretreatments.

4. Medical staffs that plan the deployment of medical capabilities for targeted surveillance missions must define Allied standards for the content and format of the information collected and the processes for the communication and analysis of this information. Such missions may involve collecting, handling, transporting, and analysing environmental and/or clinical samples for medical treatment or forensic attribution. Medical staffs must ensure that the procedures for medical CBRN sampling and analysis by designated units are standardized or coordinated, as necessary, with other responsible organizations and nations across the CJOA. The staffs must also be aware of nonmedical CBRN sampling procedures and assets.

5. Because NATO medical operational experience with CBRN incidents is rare, CBRN medical subject matter expertise is limited and, in general, is concentrated within specialized units or facilities. Medical Advisors must establish a process for accessing appropriate reach-back capabilities. These capabilities could range from specific treatment questions to the use of national gold-standard laboratory sample analysis capabilities. Since reach-back capabilities are likely to use medical information or samples collected from military personnel, Medical Advisors must also resolve any differences in national standards for the protection and management of this information.

6. In the event of a CBRN incident, the demand for information on associated health effects, health risks, and mitigating actions will be high. Medical Advisors should coordinate with public affairs staff to ensure that accurate information is disseminated to Allied forces and member states, host nations, and relevant international organizations and NGOs working within the CJOA. Such information must consider individual privacy and operational security. Medical Advisors must also support commanders in fulfilling obligations for information sharing (e.g., reporting public health emergencies of international concern as required by International Health Regulations (IHR)).

7. CBRN information management within the Alliance specifically includes CBRN warning and reporting functions and responsibilities, which are distinct from the normal chain of command. As described in Allied Tactical Publication 45 (ATP-45), *Warning and Reporting and Hazard Prediction of Chemical, Biological, Radiological, and Nuclear Incidents*:

The CBRN warning and reporting functions and responsibilities should not be confused with the normal chain of command. The exchange of CBRN information will, of course, follow the chain of command, but neighbouring units are to make arrangements for mutual exchange of CBRN information through lateral lines of communications and directives to this effect should be contained in command SOPs.

8. In anticipation of a CBRN incident, Medical Directors must ensure that all MTFs and other medical units/facilities are integrated into the CBRN warning and reporting system. Coordination with CBRN staff will also be needed to ensure the timely communication of CBRN information laterally between operational units and MTFs.

2.1.3. Physical Protection and Medical Operations

1. Physical protection consists of individual protection, collective protection (COLPRO), and equipment and materiel protection. Individual protection and

COLPRO are intended to prevent individuals from being exposed to a variety of CBRN agents or effects and to allow them to continue to perform tasks in a CBRN environment. Equipment and materiel protection minimizes the contamination of critical equipment and materiel and the associated need for decontamination.

2. Commanders must balance the need to protect against CBRN exposure against the degradation of operational capability due to use of physical protection. While assuming a protected posture (Mission Oriented Protective Posture (MOPP) level) is normally a tactical decision, large-area attacks such as biological or fallout zones may require broad use of IPE. The Medical Advisor, in coordination with CBRN, meteorology, and operations staffs, will be responsible for providing advice on managing the adverse physiological effects (e.g., heat stress and dehydration) of wearing IPE in such situations.

3. Medical personnel must be trained and equipped to use IPE when operating in a hazard area or when receiving CBRN casualties at MTFs. AMedP-7.1 describes procedures for maintaining the safety of medical personnel during CBRN casualty management situations at or near the point of wounding, including performing first aid and emergency medical treatment. Although providing IPE is a national responsibility, the need for resupply of IPE for medical personnel and for CBRN casualties must be anticipated during medical COA development and monitored during execution.

4. Most MTFs have COLPRO available. Whenever medical operations are conducted in a CBRN environment, all medical treatment should be administered within a collectively protected environment if possible. Medical Advisors should direct medical units to expect and plan for personnel from other member states to enter and exit collectively protected facilities, to be prepared for different doffing processes, and to be prepared to replace IPE for individuals.

2.1.4. Medical Countermeasures and Casualty Care in a CBRN Environment

1. The medical countermeasures and casualty care component of medical CBRN defence includes the use of pre- and post-exposure prophylaxis; delivery of first aid, emergency medical care, and advanced medical care; patient regulating; laboratory support; and sustainment of operations and facilities. While this component is the unique responsibility of medical staffs, units, and personnel, it will require information from and coordination with CBRN defence capabilities and support from operational units.

2. During COA development, the medical staff, in consultation with other staff elements and particularly with J-2/G-2 medical intelligence, should assess the requirements for medical countermeasures and plan for the stockpiling, distribution, and resupply of these countermeasures within the CJOA. This assessment must consider the impact due to variation in national policies on immunization against specific biological agents of concern and/or pretreatments against chemical agents. It should also account for corresponding national differences in requirements, capabilities, and guidelines for post-exposure prophylaxis and treatment. The Medical Advisor should establish standards for the use of medical countermeasures among the force-contributing nations, even if those standards will only be in force temporarily for a specific mission.

3. Medical Advisors must be prepared to support command decisions on the implementation of medical countermeasures. Medical advice should include criteria for the implementation of medical countermeasures, timing and procedures for implementation, and information on potential adverse reactions and/or operational degradation.
4. As noted in Chapter 1, a CBRN environment presents a number of unique challenges for casualty management. When planning for the movement of casualties to and between MTFs and for the delivery of medical resources to casualties, medical staffs should assess the extent to which CBRN agent threat-specific medical response requirements can be met with the patient-regulating process planned for conventional casualty management. Development of CBRN medical COAs may include planning for rapid augmentation of resources from within or outside of the CJOA and/or the movement of medical resources forward or laterally.
5. While local CBRN MASCAL situations can be managed through changes to the patient-regulating system, larger scale incidents may require broader changes in the concept of medical support. Potential changes depend on the nature of the CBRN incident and could include an alteration in triage strategies, the use of in-unit or stadium-type care, and the establishment of special treatment facilities. To support the chosen COA, plans for CBRN incidents that have the potential for large-scale mass casualties should incorporate such strategies as appropriate, including plans for communication, resource allocation, and coordination with the affected units. These plans should be coordinated extensively at the operational level. Medical Advisors should provide commanders the criteria for implementation of such measures and an assessment of their costs and benefits.
6. Sustainment of medical operations and continuity of care during operations in a CBRN environment will be challenging. The tempo of medical operations is likely to be very high, with an associated strain on the availability of scarce resources. Medical responses to CBRN incidents must include a coordinated resupply of medical materiel, the maintenance and repair of medical facilities and equipment, and appropriate rates of replacement of medical personnel. Medical staffs should coordinate closely with other staff elements to ensure that the requirements for the sustainment of medical operations—particularly those operations critical to mission success in a CBRN environment—receive the appropriate priority.

2.1.5. Hazard Management and Medical Operations

1. Hazard management refers to those measures taken collectively to limit the operational impact of CBRN incidents. As noted in AJP-3.8, hazard management is based on avoidance, control of spread, exposure control, and decontamination.
2. While units are responsible for the decontamination of their personnel, medical forces are responsible for casualty hazard management. AMedP-7.1 describes the requirements and procedures for the decontamination of casualties. Commanders must ensure that medical personnel have been trained to conduct individual and casualty decontamination. In addition, a CJCF standard procedure for recording, communicating, and tracking the decontamination status of casualties must be established and implemented across the CJOA. This record will accompany the patient from point of wounding through the medical systems to his

or her home nation, which will avoid confusion regarding a patient's decontamination status and thus support confidence in and efficiency of the decontamination efforts.

3. Medical units must anticipate the use of decontamination resources and plan for resupply as needed. Medical plans must also include the management of contaminated waste at MTFs across the CJOA. Again, the Medical Advisor must be cognizant of national differences.

4. Casualty evacuation in a CBRN environment inherently risks the contamination of transportation assets. Within the operational and medical COAs, planning should consider the effects of CBRN incidents and associated hazards on evacuation route selection, asset selection, and strategies (e.g., designation of clean and dirty routes and/or vehicles) to minimize the contamination of casualty evacuation assets, to minimize the risk of cross-contamination, and to reduce the burden of decontamination. Planning a medical evacuation for a contaminated environment requires information from CBRN defence control centres for the anticipated type, duration, size, and location of hazard areas.

5. When there is an assessed risk of exposure to a contagious biological agent, the CJFC should consider the establishing separate MTFs for the care of contagious casualties. For the COA, plans should establish the conditions in which such facilities could be warranted and provide criteria for site selection, the level of care required, laboratory support requirements, medical logistics support, general logistics support, security, and transportation.

6. Movement of contagious disease casualties within and out of a CJOA poses numerous challenges for maintaining appropriate levels of care while minimizing the risk to medical and transportation personnel. For any operation in which contagious disease is a known risk, Medical Advisors, in coordination with other staff elements, will need to identify available transportation capabilities and develop plans for the use of these capabilities, including the resolution of any issues related to overflight, refueling, and landing in contiguous nations. If military personnel are exposed to contagious biological agents because of adversary use, the number and near-simultaneous presentation of primary casualties may, in any event, quickly overwhelm available evacuation capabilities. CBRN medical COAs must therefore incorporate alternatives to standard casualty movement.

7. In the event of contagious disease casualties, Medical Advisors will be responsible for advising the commander on the implementation of ROM intended to impede the spread of disease by preventing contact between healthy populations and those personnel who are or could be infectious. Because the operational impact could be significant, this advice needs to be as comprehensive as possible to support command decisions regarding the use of ROM. It should include an assessment of the merits of ROM, the scope and anticipated duration, and specific procedures and resources needed for implementation. In some cases, ROM may include limits on the interaction between Allied personnel and the local population. Medical advice on ROM will vary depending on the source of the disease outbreak—whether natural or deliberate—and the characteristics of the disease itself.

2.2. MEDICAL SUPPORT DURING OPERATIONS IN A CBRN ENVIRONMENT/INCIDENT

1. AJP 3.8 highlights three distinct phases of a CBRN incident as it relates to CBRN defence:
 - a. Pre-incident. During this phase, measures and available equipment are planned, assessed for sufficiency, prepared, tested, and, if necessary for some measures, implemented.
 - b. During-incident. These activities are the implementation of contingent measures in immediate response to a CBRN incident and focus primarily on preventing exposure of military assets, including personnel, equipment, and materiel.
 - c. Post-incident. These activities follow a CBRN incident and are essential to protect assets, restore operational capabilities, and regain operating tempo.
2. Medical Advisors, Medical Directors, and medical staffs have responsibilities in all phases of CBRN defence operations for providing advice to commanders, for coordinating with CBRN defence staff, and for developing and implementing CBRN medical COAs.

2.2.1. Planning for Medical Support Pre-incident

1. Pre-incident medical support planning must address all components of CBRN defence. The specific nature of this planning will be contingent upon the commander's chosen COA, including the results from the operational risk assessment and the CBRN risk assessment. Planning should address medical and required nonmedical support and resources, including the following:
 - a. Establishment of priority medical intelligence requirements;
 - b. CBRN-related health risk assessment;
 - c. CBRN casualty estimation;
 - d. Deployment health surveillance;
 - e. Disease surveillance;
 - f. Use of medical surveillance and reconnaissance assets;
 - g. Communications and network support;
 - h. Medical-specific reporting procedures and formats;
 - i. Specific medical countermeasures;
 - j. Psychological casualty prevention and mitigation;
 - k. MTF site selection;
 - l. Evacuation asset availability;
 - m. Availability of individual protection and COLPRO;
 - n. Casualty triage and decontamination planning;
 - o. ROM and quarantine;
 - p. Specialized training requirements;
 - q. Language and translation capabilities and requirements;
 - r. Public affairs;
 - s. Disposition and repatriation of contaminated remains;
 - t. Civil/military interaction;
 - u. Coordination, collaboration, and communication with NGOs;

- v. Collection and preservation of information/evidence for post-operation analysis; and
 - w. Integration of medical COAs with operational COAs.
2. Planning and execution of medical COAs and integration with operational COAs can be facilitated by the development of a decision authorities matrix that identifies 1) the types of decisions that may need to be made within each component in response to a CBRN incident, 2) the authorities responsible for making these decisions, and 3) the conditions under which these decisions should be made.

2.2.2. Medical Support During-incident

1. The immediate response to a CBRN incident is generally in the immediate vicinity of the hazard. For affected units, this response includes the implementation of individual protection and, where available, COLPRO necessary for the protection of the joint force. CBRN incidents may involve localized, persistent, or nonpersistent contamination and broad area, possibly transient, downwind hazards that develop following the incident. Units will execute CBRN countermeasures as trained and will initiate the movement of casualties.
2. During a CBRN incident, the primary task for Medical Advisors/Medical Directors will be the collection, assessment, and dissemination of information that supports medical operations/units and other elements of the force, as appropriate. The impact of casualties on the medical system is generally post-incident.

2.2.3. Executing Medical Support Post-incident

1. CBRN post-incident measures include mitigation, response, and recovery procedures; CBRN warning and reporting; information management; hazard management; and medical countermeasures and support. These measures are executed based on COAs developed in pre-incident planning. Because many unknown and uncontrolled variables influence operations, planned COAs and procedures will need to be adapted for execution.
2. Post-incident, the Medical Advisor must collect and disseminate information and maintain situational awareness of the medical and operational situation. The information/awareness process should have been planned pre-incident and not cause a further burden on MTFs and the units executing operations. Medical staffs will use this information as the basis for updating COAs. Medical Directors must ensure the successful execution of CBRN response measures, as outlined in these revised COAs.
3. Based on the information collected during- and post-incident, the specific plans, plan elements, or other actions may need to be reassessed for timelessness, priority, and sufficiency. These plans/plan elements/other actions include the following:
 - a. Deployment health surveillance;
 - b. Use of operational epidemiology assets (e.g., RDOIT and MRIIT);
 - c. Use of reach-back and forensic capabilities;
 - d. Availability and use of laboratory assets;
 - e. Post-exposure medical countermeasures;

- f. MASCAL management;
 - g. Force-level hazard management and exposure management, including ROM;
 - h. Consumption and resupply of IPE for medical personnel;
 - i. Decontamination requirements;
 - j. Treatment of civilians;
 - k. Health risk from untreated civilian casualties in the operational area;
 - l. Sustainment of medical operations;
 - m. Management of contaminated human or animal remains and contaminated waste management;
 - n. Theatre evacuation;
 - o. Public information;
 - p. Use of nonmedical personnel to augment and support processes such as contamination control, casualty decontamination, and ROM; and
 - q. Actions to prevent or reduce the numbers of stress-related casualties.
4. In the aftermath of a CBRN incident, medical support and public health service facilities may be strained beyond their capacities. Demands for medical support to military and civilian populations could be intense. Medical Advisors must support the development of command directives on the availability and use of military medical and public health service resources to assist civilian populations. These directives must be communicated clearly and, in the aftermath of CBRN incidents, the Allied force medical personnel and facilities across the CJOA must adhere to them.

2.3. MEDICAL SUPPORT TO CBRN DEFENCE AGAINST TERRORISM

1. MC 472, *NATO Military Concept for Defence Against Terrorism*, is the approved Alliance concept for dealing with the ongoing threat of large-scale terrorist attacks—including those that involve the use of CBRN—against member states. The Defence Against Terrorism (DAT) concept defines consequence management as, collectively, “the reactive measures used to mitigate the destructive effects of attacks, incidents, or natural disasters,” and further specifies a wide range of military support capabilities that the Alliance, if called upon, could provide to mitigate the effects of an attack.
2. Any NATO military medical response to a CBRN terrorist attack includes all of the pre-, during-, and post-incident considerations outlined previously, but this response must be closely coordinated with national civil authorities who retain responsibility for consequence management.

2.4. EDUCATION AND TRAINING FOR CBRN MEDICAL SUPPORT

1. Since medical support in CBRN environments is particularly complex, medical personnel should receive rigorous and frequent CBRN defence education through training programs. Such training will reduce the stress of CBRN incidents, improve operational effectiveness, and reinforce awareness of symptoms and treatment options for CBRN exposure. This awareness is particularly important in cases where the manifestation of chemical, biological, or radiological symptoms provides the first indication of a CBRN incident.

2. STANAG 2954 (AMedP-44), *Training of Medical Personnel for CBRN Force Protection*, provides medical personnel training standards for CBRN medical support. Participating member states agree to use this document as the basis for training medical personnel deployed as part of a NATO operation. Its annexes provide recommendations for core training and special role training for clinical and technical specialists and medical advisors. AMedP-44 recommends that individual refresher training and collective training be done at least every 5 years.
3. NATO conducts multinational CBRN medical field exercises and field exercises of CBRN defence operations that include medical support on a regular basis. These exercises have great value in promoting interoperability through doctrine alignment and sharing/comparing tactics, techniques, and procedures (TTP).

CHAPTER 3 DETECTION AND MEDICAL OPERATIONS

1. If CBRN incidents go undetected by CBRN defence point and stand-off detection systems, the manifestation of illness and injury in humans (observed and communicated by medical personnel) may provide the first indication that an incident has occurred. The medical component of detection includes establishing background levels of illness and injury within the force; monitoring the health of the force to detect changes potentially resulting from CBRN exposure; and investigating unusual or unexplained changes to determine the source, nature, and scope of these changes. For medical operations, while the primary focus of detection is on incidents that involve biological agents, incidents that cause chemical or radiological injuries may also go undetected until casualties are presented to the medical system.

2. This chapter provides guidance on those aspects of Allied medical operations that support the detection component of CBRN defence: health and environmental surveillance, disease surveillance, and operational epidemiology. It also discusses laboratory support for detection and the use of medical information and assets to support forensic investigations.

3.1. HEALTH AND ENVIRONMENTAL SURVEILLANCE

[This section will be expanded to address the following topics]

CBRN-related objectives of health and environmental surveillance

Establish background against which anomalies could be detected

Responsible organizations and activities—what is the process for meeting defined health and environmental surveillance objectives in a CJOA?

NATO Deployment Health Surveillance Centre (DHSC)

National forces—veterinary, public health, occupational health

National reach-back capabilities

Guidance on issues requiring operational-level coordination, advice, assessment

Identification of surveillance targets

Establishment of the population at risk

Information management—source, flow, format, timeliness

Red flags—triggers for further action

Requirements for post-conflict surveillance of environment for residual CBRN hazards and/or long-term health risks

3.2. DISEASE SURVEILLANCE

[This section will be expanded to address the following topics]

CBRN-related objectives of disease surveillance

Detect anomalies that might indicate exposure to biological agent

Responsible organizations and capabilities—what is the process for meeting defined disease surveillance objectives in a CJOA?

Deployment Health Surveillance System of NATO (EpiNATO) and DHSC

Guidance on issues requiring operational-level coordination, advice, assessment

Information management—source, flow, format, timeliness

Confidence vs. timeliness

Red flags—triggers for further action

3.3. OPERATIONAL EPIDEMIOLOGY

[This section will be expanded to address the following topics]

Operational epidemiology is the investigation of known or suspected CBRN incidents or biological-agent-induced disease outbreaks to

- Determine the source, nature, and magnitude of a CBRN incident

- Improve medical treatment

- Support forensic investigations

Specialized capabilities

Guidance on issues requiring operational-level coordination, advice, assessment

- Triggers for investigation

- Targets for investigation

- Medical support for sample collection teams/missions

- Sample collection and handling TTP

- Format and content of reports and procedures for disseminating information

- Designation of reference laboratories and other reach-back capabilities

3.3.1. Clinical Investigations

3.3.2. RDOIT

3.3.3. MRIIT

3.3.4. Sampling and Identification of Biological, Chemical, and Radiological Agents (SIBCRA)

3.4. LABORATORY SUPPORT FOR DETECTION

[This section will be expanded to address the following topics]

Functions:

- Clinical diagnosis of biological agent infection/intoxication

- Identification of CBRN agents/materials in samples

- Confirmation of attack information from other indicators

Capabilities for laboratory support for detection

- Medical vs. nonmedical

- In-theatre laboratory capabilities

- National reference laboratories

Guidance on issues requiring operational-level coordination, advice, assessment

- Designation of reference laboratories

- Standards for detection and identification

3.5. CBRN FORENSICS

[This section will be expanded to address the following topics]

NATO-agreed definition of CBRN forensics: The scientific methods and techniques used to analyse materials and data in support of a chemical, biological, radiological, and nuclear incident or threat investigation.

Issues that separate forensic investigations from other types of investigation

Special requirements for information/sample collection, handling, and analysis

Timeliness, purpose, and standards

Responsibility and authority within NATO

Nonmedical forensic capabilities within NATO

SIBCRA

Deployable CBRN Analytical Laboratory

Technical exploitation

National forensic capabilities

Guidance on issues requiring operational-level coordination, advice, assessment

Legal and ethical issues

Medical support to forensic missions

CHAPTER 4 INFORMATION MANAGEMENT AND MEDICAL OPERATIONS

1. As described in AJP-4.10, the nature of medical support responsibilities demands a specific command and control (C2) organization and structure—fully coordinated with but distinct from other command structures. This structure must be paired with an effective medical communication and information management system that supports situational awareness and the execution of medical tasks (e.g., regulating and tracking casualties within theatre, responding to medical contingencies, and fostering communication and collaboration between medical professionals).
2. The role of medical information in CBRN situational awareness is crucial and is one that may be more urgent and more high profile than the role that medical information typically plays in conventional operations. Many command decisions in response to a CBRN incident will focus on measures to protect and restore the health of the force, and other decisions will have medical implications. Timely, accurate, and comprehensive medical information will be needed to provide the best possible advice to the commander and to assess the medical impact of all command decisions.

4.1. CBRN MEDICAL INFORMATION REQUIREMENTS

[This section will be expanded to address the following topics]

Medical and non-medical information needed to support components of CBRN defence, CBRN medical-related command decisions, and CBRN medical COA development and execution

Content and purpose (e.g., number, types, flow, severity of casualties; responsiveness of casualties to therapy, need for supporting nonmedical resources, and so forth)

Sources: Medical intelligence, clinical case reporting, casualty reports, DHSC, CBRN warning and reporting system, health and environmental surveillance, disease surveillance, operational epidemiology, laboratory analysis, other

Means: Medical Information and Coordination System (MEDICS), collaboration with other staff elements, other

Guidance on issues requiring operational-level coordination, advice, assessment

Establishment of lateral lines of communication between medical and operational units at all levels

Integration of medical and nonmedical CBRN information at all levels of command

CBRN medical-specific requirements and SOPs for reporting over and above standard reporting

Identification and resolution of differences in national standards for the protection and management of medical information

Designation and procedures for use of reach-back capabilities

4.2. CBRN MEDICAL COMMUNICATION AND COLLABORATION

[This section will be expanded to address the following topics]

Communication of CBRN medical information within NATO

- Health risk assessment communication—special considerations when risk includes CBRN exposure

- Dissemination of casualty estimates

- Threat-specific health and safety measures

Collaboration and information sharing outside NATO on CBRN medical issues

- Public affairs and media relations

- Host nation

- Non-NATO allied nations

- International organizations

- NGOs

Guidance on issues requiring operational-level coordination, advice, assessment

4.3. CBRN CASUALTY ESTIMATION

[This section will be expanded to address the following topics]

The NATO-agreed methodology for estimating CBRN casualties is described in AMedP-7.5. This methodology will allow medical planners to estimate the number, type, severity, and timing of casualties uniquely occurring because of CBRN incidents near Allied military forces.

Guidance on the implementation of CBRN casualty estimation methodology

- Requirements for skilled users and/or reach-back

- Default data and assumptions

- Requirements for coordination with/inputs from other staff elements

- Threat assessment

- Proposed force deployment, configurations, and timelines

- CBRN hazard modelling outputs

- Level of fidelity desired

Guidance on the use of CBRN casualty estimates in contingency planning

- Patient regulating in CBRN contingencies

- Estimates of resource requirements and assessment of shortfalls

- Augmentation and/or reallocation of assigned medical units

4.4. MEDICAL RECORDKEEPING

[This section will be expanded to address the following topics]

Requirements for medical recordkeeping in operations that have a risk of a CBRN incident beyond those operations defined in AMedP-4.8, *Pre- and Post-Deployment Health Assessment*

Consistency in reporting format and communication

Protection of patient confidentiality through data anonymization or other means

Medical record storage and long-term accessibility

CHAPTER 5 PHYSICAL PROTECTION

5.1. IPE

[This section will be expanded to address the following topics]

- Guidance on issues requiring medical advice to the commander
 - Nature and degree of expected degradation, given the operating environment
 - Mitigation of adverse physiological effects from the use of IPE
 - Criteria for full or partial relaxation of IPE, if appropriate at this level
- Guidance on issues requiring direction to medical units
 - Dissemination of standard health and safety guidelines for the use of IPE
 - Management of casualties resulting from the use of IPE
- Guidance on issues requiring operational-level coordination, advice, assessment
 - Implications of variations on national standards for training on the use of IPE among medical personnel
 - Monitoring IPE usage rates and need for resupply within the medical system

5.2. COLPRO

[This section will be expanded to address the following topics]

- Standardization of entry/exit procedures for collectively protected facilities
 - Medical personnel
- Casualties (ambulatory and litter-borne)

CHAPTER 6 MEDICAL COUNTERMEASURES AND SUPPORT

6.1 MEDICAL COUNTERMEASURES

[This section will incorporate content from STANAG 2242, Policy for the Chemoprophylaxis and Immunotherapy of NATO Personnel against Biological Warfare Agents, and will be expanded to address the following topics]

Concepts for use (from AMedP-7.1, SD.3)

- Pre-exposure prophylaxis
- Pre-treatment
- Post-exposure prophylaxis
- Immediate therapy

Triggers for implementation of medical countermeasures (from STANAG 2242)

**Table 6-1: Recommendations for Command-Directed
Use of Chemoprophylaxis Measures (from STANAG 2242)**

Index of Suspicion	Trigger	Action
LOW	Enemy possesses offensive biological weapon (BW) capability (including contagious agents)? Meteorological and terrain conditions favourable for a BW attack?	Follow standard BW defence procedures If appropriate, ensure the ROM is included in Status of Forces Agreements (SOFAs) with host nation Stockpile medical countermeasures and seek appropriate authority to use them Immunise personnel (if suitable vaccine available) ID particularly vulnerable targets
MEDIUM	<u>At least one of the following:</u> Unusual enemy activity (e.g., movement, communications traffic) that indicates a BW attack BW detector alarms sound Unusual patterns (numbers/temporal + special distribution) of illness/death amongst domestic livestock or wildlife Unusual or suspicious patterns (numbers/temporal + spatial distribution) of illness amongst personnel?	ID targets most likely to have been attacked and plan for ROM in zones surrounding them Alert home base to possible attack and obtain necessary authority to implement ROM Alert international organizations—Centers for Disease Control and Prevention (CDC), World Health Organization (WHO) Warn/liase with host government civil authorities in theatre—if necessary, consider convening a military/civilian crisis management committee Plan for major risk communication effort to personnel and media Step-up health surveillance for personnel at likely targets Implements SIBCRA Consider instructing personnel to take medical countermeasures (e.g., antibiotics)

		Consider making limited use of ROM (e.g., quarantine/health surveillance for those leaving theatre, restricting non-essential movement in and out of theatre or into likely targets identified previously)
HIGH	<u>At least one or more of the following:</u> Two or more triggers in the MEDIUM category Samples from battlefield confirm the presence of a contagious BW agent Confirmed diagnosis of contagious disease among personnel caused by a likely BW agent	Consider all the previous steps plus: Order affected personnel to take medical countermeasures Implement major risk communication plan for personnel and media Consider full ROM for areas around likely targets Implement full isolation for confirmed cases and trace contacts and other personnel likely to have been exposed Initiate medical surveillance and contact tracing of personnel who have returned home from theatre

Guidance on issues requiring medical advice to the commander

Defining population at risk—who should receive medical countermeasures and when?

Recommendations on the selection of specific medical countermeasures

Initially

Modified over time based on pathogen characteristics, clinical observations of personnel

Vulnerable populations

Criteria for the discontinuation of use of medical countermeasures

Guidance on issues requiring direction to medical units

Recording the use of medical countermeasures

Collection of data on adverse reactions

Collection of data on efficacy

Guidance on issues requiring operational-level coordination, advice, assessment

National policies for the immunization of personnel

National protocols for the selection and administration of medical countermeasures

Interoperability issues

Dosing regimens

Medical support requirements

Stockpile management

Reach-back or in-theatre assessment of pathogen vulnerability to specific medical countermeasures

6.2. CBRN CASUALTY MANAGEMENT

[This section will be expanded to address the following topics]

6.2.1. Treatment of CBRN Casualties

Identification of agent-specific, specialized treatment requirements: personnel, equipment, materiel

- Availability and sources

- Potential for augmentation

- Establishment of reach-back capability

Guidance on issues requiring operational-level coordination, advice, assessment

- Standardization of triage categories for CBRN casualties of various types

- Expected casualty rates and need for unit replacement

- Anticipated efficacy of treatment: fatality rates, potential for return to duty, long-term effects, and so forth

- Contingency planning for resupply of materiel and relief of personnel

- Availability of out-of-theatre high-level containment care beds and facilities and variation in national standards

- Host nation support

- Agreements on provision of medical care to civilians

- Coordination/collaboration with international organizations and NGOs

6.2.2. Allocation of Medical Resources

Development of COAs that allow medical operations to meet the 10-2-1 timeline standard defined in MC 326-3 for casualties resulting from CBRN

- Movement of MTFs or components of MTFs

- Forward deployment of medical personnel

How does the allocation of medical resources vary by

- Scale, type of incident—consider magnitude of a given incident, prevalence/recurrence/duration of multiple incidents

- Type of mission

Guidance on issues requiring operational-level coordination, advice, assessment

- Identification of low-density nonmedical capabilities that facilitate medical operations (e.g., chemical defence units)

- Site selection for MTFs

- National policies on use of medical personnel for casualty decontamination

6.2.3. Medical Regulating

Special requirements for medical evacuation of CBRN casualties

Availability of medical evacuation assets (land, air, maritime)

Impact of the scale of a CBRN incident on medical evacuation operations

- Size and type of hazard

- Numbers of casualties

Guidance on issues requiring operational-level coordination, advice, assessment

- National policies on the use of evacuation assets in a contaminated environment

- Establishment of evacuation routes from point of wounding through Role 3

- Movement of CBRN casualties out of theatre

- Theatre evacuation vs. theatre holding of casualties

- Numbers of casualties

Requirements for medical care during aeromedical evacuation
Expected time until return to duty

6.3. CBRN MASS CASUALTY

[This section will be expanded to address the following topics]

Resolution of “local” resource shortfalls

- Options for reallocation or augmentation, particularly of low-density, high-demand capabilities
- Forward movement of medical resources
- Lateral movement of casualties to unburdened facilities

Concepts for managing theatre-wide resource shortfalls

- Agent-specific changes to triage scale and standard of care for designated T4 casualties
- Stadium/in-unit care: concept/process for managing all the people in an exposed unit, “treat in place”
 - What standard of care can be reasonably achieved?
 - Criteria for implementation and cessation
 - Use of nonmedical personnel in affected units to augment medical personnel
 - Logistics support
 - Mortuary support

6.4. PSYCHOLOGICAL CASUALTIES

[This section will be expanded to address the following topics]

Guidance on issues requiring medical advice to the commander

- Characteristics of CBRN incidents and aspects of defensive measures that may increase the likelihood of psychological casualties
- Type and magnitude of psychological casualties that may be associated with CBRN incidents
- Measures to mitigate the likelihood of psychological casualties

Guidance on issues requiring direction to medical units

- Allocation of resources to diagnose and mitigate psychological casualties
- Measures to limit impact of psychological casualties on MTF operations when resources are constrained

Guidance on issues requiring operational-level coordination, advice, assessment

- Impact of variation in national approaches to managing psychological casualties

6.5. LABORATORY SUPPORT FOR CBRN CASUALTY MANAGEMENT

[This section will be expanded to address the following topics]

Functions

- Clinical diagnosis of biological agent infection/intoxication
- Clinical sample analysis to support medical treatment decisions

Capabilities for laboratory support for casualty management

- In-theatre laboratory capabilities by level of care

National reference laboratories
Guidance on issues requiring operational-level coordination, advice, assessment
Distribution of workload
Location of field laboratories
Use of nonmedical laboratories

CHAPTER 7 HAZARD MANAGEMENT AND MEDICAL OPERATIONS

7.1. CASUALTY DECONTAMINATION

[This section will be expanded to address the following topics]

Guidance on issues requiring operational-level coordination, advice, assessment

Management of differences in national assignment of responsibility for casualty decontamination

Variation in national training requirements for medical personnel in individual and casualty decontamination

Establishment of SOPs for recording, tracking, and reporting decontamination status of individual casualties

Establishment of SOPs for verification of casualty decontamination status upon arrival at MTFs

7.2. MEDICAL EVACUATION IN A CONTAMINATED ENVIRONMENT

[This section will be expanded to address the following topics]

Guidance on issues requiring operational-level coordination, advice, assessment for chemical and radiological contingencies

Coordination and standardization of national SOPs for decontamination of casualties before evacuation

Evacuation route selection

Evacuation asset allocation

Guidance on issues requiring operational-level coordination, advice, assessment for contingencies involving contagious biological casualties

SOPs for movement within theatre

Identification and contingency planning for use of appropriate assets for transport of casualties out of theatre

Resolution of issues related to overflight, refueling, and landing en route

Coordination with host nation and international organizations

7.3. ROM

[This section will integrate the content of STANAG 2278, Medical Advice on Restriction of Movement, and will be expanded to address the following topics]

Operational ROM: in-theatre restriction contact between healthy groups of personnel and those who have, or are suspected of having, contracted a contagious disease

Strategic ROM: ROM of personnel into and out of theatre

Guidance on issues requiring medical advice to the commander

Criteria for implementation of ROM

Criteria for cessation of ROM

Recommendation of specific measures to control spread of disease while minimizing operational impact

Individual vs. unit quarantine

Designation of affected individuals or units

- Nature and expected duration
- Implementation of medical countermeasures or other means to minimize susceptibility of healthy personnel
- Differences in response given deliberate introduction of contagious biological agent vs. naturally occurring outbreaks
- Requirement for limits on interaction with host nation civilians
- Requirements for health surveillance of individuals following departure from theatre
- Guidance on issues requiring direction to medical units
 - Health surveillance of individuals in quarantine and of medical personnel
 - Delivery of medical care to individuals in isolation
 - Movement of casualties from quarantine to isolation
 - Recommendations on extraordinary field hygiene measures (e.g., limits on physical contact)
- Guidance on issues requiring operational-level coordination, advice, assessment
 - SOPs for movement of affected units and personnel
 - Establishment of cordons in ROM areas as needed
 - Security measures
 - Criteria and procedures for entering or leaving a cordoned area
 - Logistics support for affected units and personnel
 - Pest and vector control
 - Coordination with host nation, international organizations, and NGOs

7.4. DEDICATED CONTAGIOUS DISEASE TREATMENT FACILITIES

[This section will be expanded to address the following topics]

- Circumstances in which these facilities should be established
 - Lack of sufficient theatre evacuation capability and/or out-of-theatre high-level containment care facilities
 - Isolation of contagious casualties under ROM
- Facility characteristics
 - Site selection
 - Level of care
 - Capabilities, layout, physical plant
 - Laboratory support
 - Security
 - Entry/exit procedures
- Assignment and rotation of medical personnel
- Logistical support
- Public affairs
- Coordination and collaboration with host nation, international organizations, NGOs

CHAPTER 8 CBRN MEDICAL LOGISTICS

The execution of medical COAs in support of all components of CBRN defence operations requires a significant degree of logistics support. Anticipation of logistics support requirements and coordination with logistics staff for its provision on a priority basis are critical operational staff responsibilities.

8.1. MTFs

[This section will be expanded to address the following topics]

Site selection in a CBRN threat environment

Consideration of terrain and prevailing meteorology to limit vulnerability or enhance accessibility

Anticipated requirements for mobility (Roles 1 and 2)

Requirement to meet established timelines for delivery of care

Sustainment of operations

Resupply of food and water to collectively protected facilities

Maintenance of physical plant and equipment

Additional requirements for operations within collectively protected facilities—power, maintenance of filtration, and so forth

Management of hazardous waste

8.2. HOST NATION SUPPORT CAPABILITY

[This section will be expanded to address the following topics]

Nature and extent of host nation support anticipated for medical CBRN operations, in addition to or other than that anticipated for conventional operations

Responsibility for and advisability of providing medical countermeasures and/or to host nation support personnel

Reliability of host nation logistics support in CBRN operations

8.3. SUPPLY

[This section will be expanded to address the following topics]

Anticipated consumption rates for supplies in medical support to CBRN defence across the CJOA

Casualty decontamination resources

IPE for medical personnel

Medical countermeasures and therapy drugs

Low-density, high-demand medical equipment

CBRN medical operations requiring new or unusual levels of logistics support

Casualty decontamination facilities

Dedicated CBRN casualty treatment facilities

Stadium/in-unit care in MASCAL events

Units affected by ROM

Guidance on issues requiring operational-level coordination and assessment

Availability of national stockpiles of medical countermeasures and therapy drugs

Availability of national inventories of specialized medical equipment (e.g., ventilators)

ANNEX A DECISION AUTHORITIES MATRICES FOR MEDICAL OPERATIONS IN SUPPORT OF CBRN DEFENSIVE OPERATIONS

This Annex will provide guidance on the development of decision authorities matrices for each component of CBRN defence, identifying 1) the types of decisions that may need to be made within each component in response to a CBRN incident; 2) the authorities responsible for making these decisions, and 3) the conditions under which these decisions should be made. More specifically, AMedP-7.6 would list the potential decisions and supporting information requirements, derived from the information provided in the main body of the document, together with guidance to planners for the identification of responsible command levels and/or staff elements.

ANNEX B	ACRONYMS AND ABBREVIATIONS
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AEP	Allied Engineering Publication
AJMedP	Allied Joint Medical Publication
AJP	Allied Joint Publication
AMedP	Allied Medical Publication
ATP	Allied Tactical Publication
BW	biological weapon
C2	command and control
CBRN	chemical, biological, radiological, and nuclear
CDC	Centers for Disease Control and Prevention
CIS	Communications and Information Systems
CJFC	Combined Joint Force Commander
CJOA	Combined Joint Operations Area
COA	course of action
COLPRO	collective protection
DAT	Defence Against Terrorism
DHSC	Deployment Health Surveillance Centre
EpiNATO	Deployment Health Surveillance System of NATO
IHR	International Health Regulations
IPE	individual protective equipment
MASCAL	mass casualty
MC	Military Committee
MEDCC	Medical Coordination Cell
MEDICS	Medical Information and Coordination System
MOPP	Mission Oriented Protective Posture
MRIT	Medical Radiation Incident Investigation Team
MTF	Medical Treatment Facility
NATO	North Atlantic Treaty Organization
NGO	non-governmental organization
NSA	NATO Standardization Agency
OTAN	Organisation du traité de l'Atlantique Nord
PFP	Partnership for Peace
RDOIT	Rapidly Deployable Outbreak Investigation Team
ROM	Restriction of Movement
SD	Study Draft
SIBCRA	Sampling and Identification of Biological, Chemical, and Radiological Agents
SOFA	Status of Forces Agreement
SOP	standard operating procedure
STANAG	Standardization Agreement
TIM	toxic industrial material
TTF	Terminology Tracking Form
TTP	tactics, techniques, and procedures
WHO	World Health Organization

ANNEX C	REFERENCES
MC 0603	<i>NATO Comprehensive CBRN Defence Concept</i>
MC 326/3	<i>NATO Principles and Policies of Medical Support</i>
MC 472	<i>NATO Military Concept for Defence Against Terrorism</i>
STANAG 2103 (ATP-45)	<i>Warning and Reporting and Hazard Prediction of Chemical, Biological, Radiological, and Nuclear Incidents</i>
STANAG 2228 (AJP-4.10)	<i>Allied Joint Medical Support Doctrine</i>
STANAG 2235 (AMedP-4.8)	<i>Pre- and Post-Deployment Health Assessment</i>
STANAG 2451 (AJP-3.8)	<i>Allied Joint Doctrine for Chemical, Biological, Radiological, and Nuclear Defence</i>
STANAG 2461 (AMedP-7.1)	<i>The Medical Management of CBRN Casualties</i>
STANAG 2521 (AJP-3.8.1, Volume I)	<i>CBRN Defence on Operations</i>
STANAG 2525 (AJP-6)	<i>Allied Joint Doctrine for Communication and Information Systems</i>
STANAG 2529 (AMedP-7.7)	<i>Rapidly Deployable Outbreak Investigation Team (RDOIT) for Suspected Use of Biological Warfare Agents</i>
STANAG 2542 (AJMedP-1)	<i>Allied Joint Medical Planning Doctrine</i>
STANAG 2551 (AMedP-7.4)	<i>Regulations for Establishment and Employment of MRIIT (Medical Radiological Incident Investigation Teams)</i>
STANAG 2553 (AMedP-7.5)	<i>NATO Planning Guide for the Estimation of CBRN Casualties</i>
STANAG 2596 (AJMedP-7)	<i>Allied Joint Medical Doctrine for Support to CBRN Defensive Operations</i>
STANAG 2879	<i>Principles of Medical Policy in the Management of a Mass Casualty Situation</i>
STANAG 2954 (AMedP-44)	<i>Training of Medical Personnel for CBRN Force Protection</i>
STANAG 4632	<i>Deployable NBC Analytical Laboratory</i>
STANAG 4701 (AEP-66)	<i>Handbook for the Sampling and Identification of Chemical, Biological, and Radiological Warfare Agents</i>

ANNEX D	GLOSSARY
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