NATO STANDARD

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ALLIED JOINT MEDICAL PLANNING DOCTRINE

Edition A Version 1

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NORTH ATLANTIC TREATY ORGANIZATION

ALLIED JOINT MEDICAL PUBLICATION

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NORTH ATLANTIC TREATY ORGANIZATION (NATO)

NATO STANDARDIZATION OFFICE (NSO)

NATO LETTER OF PROMULGATION

17 September 2018

1. The enclosed Allied Joint Medical Publication AJMedP-1, Edition A, Version 1, ALLIED JOINT MEDICAL PLANNING DOCTRINE, which has been approved by the nations in the Military Committee Medical Standardization Board, is promulgated herewith. The agreement of nations to use this publication is recorded in STANAG 2542.

2. AJMedP-1, Edition A, Version 1, is effective upon receipt and supersedes AJMedP-1, which shall be destroyed in accordance with the local procedure for the destruction of documents.

4. This publication shall be handled in accordance with C-M(2002)60.

Zoltán GULYÁS
Brigadier General, HUNAF
Director, NATO Standardization Office

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RESERVED FOR NATIONAL LETTER OF PROMULGATION

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RECORD OF RESERVATIONS

CHAPTER	RECORD OF RESERVATION BY NATIONS
Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.	

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RECORD OF SPECIFIC RESERVATIONS

[nation]	[detail of reservation]
DEU	DEU position is, in some circumstances, such as in support of Special Operations Forces or certain maritime operations, it will be necessary to provide a mission-tailored medical treatment facility including a surgical module, the so called Forward Surgical Element (FSE). A FSE is capable of providing DCS driven by the tactical environment. If a FSE is added to a Role 1 MTF, which will often be the case, this MTF has not the capabilities of a Role 28 MTF. For this in chapter 5 section 1 no. 5.2., chapter 5 section 3 no. 5.16 and no. 5.20 will not accepted and applied by DEU. Alternatively the DEU Position reflects the text of the DEU caveat. A proposal for the text is attached within the Comments Matrix.
ESP	Spain reserves the decision to accept the use of foreign pharmaceuticals and medical materiel in the medical treatment facilities under its responsibility, being the use subject to the authorization by national health authorities.
FRA	France will not implement paragraph 3.17 “Medical Care for Persons Deprived of their Liberty” as it stands: the planning process for the management of captured persons is not detailed enough and calls into question the French doctrine (DIA 3.2.5). France considers “clinical timelines” as a planning tool, not a binding constraint; they cannot, in fact, be applied and complied with in all military operations.
USA	1. Para 3.15.1.: The USA does not concur with nor subscribe to specific clinical timelines as indicated. While the guidelines may have relevance as guidelines, they do not take into account METT-T and the impact of multiple variables on access to casualty care. 2. Para 4.6.2: The USA notes that there are two important CBRN planning elements not reported and recommends adding the following: (a) Identification of the required type, amount, and delivery of CBRN medical countermeasures for anticipated casualties and for self-protection of medical staff

	(b) Identification of CBRN detection systems to match the operational environment. Systems should surveil the range of evidence from the physical area down to detection of agents on casualties.
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Preface

Scope

1. Allied Joint Medical Planning Doctrine (AJMedP-1) is the primary source for all medical planning within the North Atlantic Treaty Organization (NATO) Command Structure. It provides the framework for the medical aspects for the operations planning process (OPP) at all levels of combined joint operations. It is applicable to NATO Article 5 Collective Defence and Non-Article 5 Crisis Response Operations.

2. The nature of the medical contribution to operational planning is twofold. First is the input of medical expertise to the general planning process. Chapter 2 describes the medical input during the various phases of the Commander's OPP. Second is the development of a Medical Support Concept and Medical Support Plan for the operation. Chapter 3 provides the details required to conduct the in depth medical analysis and planning.

3. This document does not address medical planning for chemical, biological, radiological, nuclear (CBRN) environments. This is found in AJMedP-7 *Allied Joint Medical Doctrine for Support to Chemical, Biological, Radiological and Nuclear (CBRN) Defensive Operations* (STANAG 2596), and AMedP-7(D) *Concept of Operations of Medical Support in Chemical, Biological, Radiological and Nuclear Environments* (STANAG 2873).

Purpose

4. This publication sets out the fundamental principles required to plan and conduct medical support to NATO operations. Medical support remains a national responsibility; however, NATO commanders have come to share this responsibility during recent operations. This brings with it a range of additional responsibilities ranging from the treatment of casualties in different operating environments to the implementation of force health protection measures, interactions with civil organizations providing health services to affected populations, and the increased public expectations of high quality outcomes in the treatment of casualties. Further, the use of multinational medical solutions creates additional planning challenges.

5. The overall aim of medical support planning is to:

   a. Define the medical support concept to include the broad categories of prevention, treatment, and evacuation.

   b. Determine the organisation and structure required for medical support.

   c. Identify health threats and possible shortfalls, requirements and necessary arrangements to medically support and sustain NATO operations.

   d. Determine the requirements and availability of civil-military cooperation, including host nation support and local contracting.

Application

6. NATO medical planning doctrine constitutes a basic framework supporting Alliance operational medical planning. It is designed to allow considerable flexibility in its application. It does not deliberately reflect or exclude any particular nation's approach to medical planning. It encourages close cooperation to be undertaken between member nations, even where differences to national doctrines exist.

7. Although this document is intended primarily for NATO forces, the doctrine could be applied, with adaptations where necessary and agreed by participating nations, for operations under a coalition of NATO and non-NATO nations within the framework of a Combined Joint Task Force.

Target Audience

8. AJMedP-1 is intended primarily for use by medical staff at the operational level. It also serves a wider audience including senior officers, junior officers and senior non-commissioned officers, employed in headquarters, formations and units assigned to them.

Amendment

9. AJMedP-1 is subject to regular review and can be amended and reissued as required. Guided by the tasking authority of the Committee of the Chiefs of Military Medical Services in NATO, the Allied Command Transformation (ACT) Medical Branch, with project management by the Military Medical Structures, Operations and Procedures Working Group, will review the contents of AJMedP-1 in order to reflect changes in NATO policy or to carry out urgent amendment to published doctrine. Any recommended changes or development proposals should be directed to the ACT Medical Branch. Recommended changes to Chapter 5 Medical Maritime Planning Guide should be addressed to the Medical Naval Expert Panel.

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CHAPTER 1: THE ALLIANCE CONCEPT OF MEDICAL PLANNING

1.1. INTRODUCTION

1. The impact of health related factors on operational level planning underlines the importance of medical expertise in the planning process and requires a professional medical staff to support it. Within NATO, medical support has significantly grown in relevance and has been allocated broader responsibilities, e.g. in the area of defence planning[1].

2. There is an increased public expectation of an individual's right to healthcare and high quality treatment outcomes. Medicine will continue to become more and more specialized and technical, and military medical support will need to develop specialist capabilities to respond to new and emerging threats and weapons technology. Operational medical support planning must be able to respond to these changes and challenges by developing efficient, flexible and focused solutions in order to provide a mission tailored and timely medical support to NATO operations.

3. Massive Article 5 war, with huge numbers of casualties occurring over a large area, including potential CBRN casualties, remains a primary concern for NATO. Additionally, NATO may also be frequently involved in smaller, more localized operations such as peacekeeping and peace support. Also, the Alliance can be expected to participate in humanitarian assistance and disaster relief operations. Each type of operation has challenges for the medical planner.

4. The most likely operations of the future are joint and combined operations with a high degree of flexibility and mobility. The medical planning process itself must be flexible enough to set the basis for an effective medical support to operations.

5. As medical resources are limited and were defined as a priority shortfall area in NATO, multinational medical support options have become increasingly important; however, this requires more complex coordination at each staff level. These challenges may include enhanced interaction with the host nation and other entities (international organizations (IO), non-governmental organizations (NGO), other allies, etc.) working in the joint operations area (JOA). There are significant interoperability challenges but multinational solutions allow for burden sharing, achieving economy of scale, modular capability development and efficient use of limited national resources.

6. Allied Joint Publication-01 (AJP-01) *Allied Joint Doctrine* provides the 'capstone' doctrine for the planning, execution and support of Allied joint operations. AJP-4 *Allied Joint Doctrine for Logistics* provides logistic functional planning. AJP-4.10 *Allied Joint Doctrine for Medical Support* provides medical support doctrine for NATO multinational joint operations and essential introduction for medical planning staffs.

1.2 NATO OPERATIONAL PLANNING

1. Medical planning is done in support of the operational commander's plan; therefore, medical planners must be aware of the overarching planning process and how

[1] Medical Support has been recognized as a planning domain and has been introduced into the NATO Defence Planning Process to reflect the growing demand for, and exploit the opportunities rendered by a NATO wide coordinated capability planning and development effort in support of the Alliance's Level of Ambition.

they fit in it. AJMedP-1 aligns with Allied Command Operations (ACO) *Comprehensive Operations Planning Directive* (COPD) Interim Version 2.0 which articulates the operations planning process (OPP) for the NATO strategic and operational levels. It is consistent with AJP-5 *Allied Joint Doctrine for Operational-Level Planning*.

2. The COPD outlines the military procedures and responsibilities governing the preparation, approval, implementation and review of operations plans to enable a common approach to operations planning. The COPD is applicable to all operations planning activities at the NATO strategic and operational levels of command and can be adapted to the component/tactical level in order to enhance collaborative planning activity.

1.3 OPERATIONAL MEDICAL PLANNING

1. The medical contribution to operational planning is twofold. First, it is the **input of medical expertise** to the general OPP. Second, it is the development of a **Medical Support Concept** and a **Medical Support Plan** (see chapter 3).

2. Medical planning must be fully integrated into the OPP and is conducted in close cooperation with all other staff divisions. The following highlights the key phases of the OPP wherein medical planning must be an integral part:

a. During the development of the Military Estimate, medical planners must be involved to ensure that the proposed Courses of Action (COAs) are medically supportable and to advise operational planners as required.

b. During the development of the Concept of Operations (CONOPS), the medical planning process is fully integrated, synchronised and executed in parallel.

c. During the development of the Statements of Requirement (SOR), medical planners must provide early input regarding medical force level requirements.

3. The medical input to the Operation Plan (OPLAN), SOR and the Crisis Establishment for the NATO designated headquarters must be developed and coordinated with national input. This includes the development of the medical architecture, establishment of mutual support arrangements between nations, host nation support, contracted support, and resource requirements/funds.

4. The end product of medical planning will be a plan that outlines the requirements, policies and the support to be provided to forces throughout all phases of an operation. The plan must define medical capabilities throughout the force structure in line with the size of the deployed force and the assessed risk. In both Article 5 and Non-Article 5 Crisis Response Operations, medical planning must ensure that the standard of medical care is maintained as closely as possible to best medical practice, taking into account the operational environment.

1.4 MEDICAL STAFF

1. Medical personnel must be fully integrated into the staff and operations planning processes and appropriately represented on reconnaissance teams. The medical staff must be adequate in size, equipment, training and experience, with clear and tailored authority to undertake appropriate and timely actions, including medical planning. The roles and responsibilities of the medical staff are as outlined in the following paragraphs.

2. **Medical Advisor (MEDAD)**. The MEDAD is responsible for providing medical advice to commanders, ensuring that the commander and staff are properly aware of the health and medical implications of their actions as well as any force health issues connected to the operation. A MEDAD is appointed at each level of command. Direct access of MEDADs to their commander and other key command staff elements is a prerequisite for ensuring effective medical support planning.

3. **Medical Director (MEDDIR)**. The MEDDIR is the head of the medical organization in a formation or a theatre of operation and thus delegated responsibility for the implementation of medical policy and plans, and coordinating authority for medical support within the Commander's Area of Responsibility. Usually the MEDAD to the Joint Task Force (JTF) commander will be appointed as the MEDDIR of the JTF. On behalf of the JTF commander, the MEDDIR will define the necessary medical support system, determining the appropriate medical requirements to be met by the attached forces for this particular operation.

4. **The Combined Joint Medical Branch (CJMED).** The MEDDIR is the Chief CJMED. CJMED is the executing body of the medical organization for all JTF operations. Usually the CJMED staff has a modular structure, encompassing a Medical Operations/Plans Cell, a Patient Evacuation Coordination Cell (PECC)[2], a Force Health Protection (FHP) Cell, a Medical Logistics Cell, and if necessary additional centres/cell such as a Health Advise for Host Nation Health Sector Development Cell, a Veterinary Services Functions Cell and an Administrative Assistance and Information Management Cell.

5. **Medical Planners**. Medical planners are located in various headquarters as an integral part of the headquarters' Joint Operations Planning Group. They participate in the OPP and conduct the medical estimate to develop the detailed medical plan.

6. **Medical Subject Matter Experts (SME).** Health care is highly specialised with numerous disciplines, e.g., preventive medicine, surgical, dental, veterinary, mental health, etc. The use of appropriate medical SMEs early in the planning process saves time and effort, and misunderstanding later.

7. **Synchronization with Other Functional Staff.** Medical staff will routinely work in close cooperation with staff functions responsible for personnel, intelligence, plans and operations, logistics, civil-military cooperation (CIMIC), legal, engineers, and communication and information systems (CIS). Together they will execute a wide range of medical support planning, surveillance, coordination, and direct support functions. Coordination and collaboration spans both the vertical and horizontal levels of command. AJP 4.10 provides guidance on the interfaces between medical and other staff elements.

8. Robust and flexible medical support planning requires close coordination between the ACO MEDAD, the MEDDIR of the Joint Force and MEDDIRs of the Component Commands through the medical chain of command and national medical staffs. Monitoring and assessment of the medical situation of deployed forces and the health situation at all levels sets the basis for adjustments during the conduct of medical support to the operation.

[2] Detailed Information can be found in AJMedP-2 *Medical Evacuation.*

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CHAPTER 2: JOINT OPERATIONAL LEVEL PLANNING

SECTION 1 – THE OPERATIONS PLANNING PROCESS (OPP)

2.1. INTRODUCTION

1. This chapter details the interactions of medical planning with the full OPP. It will focus on planning at the Joint Force Command (JFC) level, but includes information for planners at component, subordinate, and deployed headquarters. It is adaptable for deliberate and crisis response planning.

2. The early consideration of medical aspects at each stage of planning is crucial to ensure a comprehensive analysis of the mission and production of a plan that can be supported medically. The disparate nature of NATO operations dictates that a medical support plan is purpose-built for each operation.

3. During the OPP medical staff will provide input to a series of products, as identified in the following sections. The major output is the medical plan in support of the Commander's OPLAN. In order to inform the OPP the medical planners will conduct a medical estimate as detailed in Chapter 3.

2.2. JOINT OPERATIONAL PLANNING GROUP (JOPG)

1. Headquarters will establish a JOPG at the start of any planning cycle. The JOPG is led by the J5 who is responsible for coordinating the planning effort on behalf of the Commander. The medical planner is an integral part of the JOPG. Medical planning cannot be delegated to the logistics planners.

2. Generally there is only one medical planner represented in the JOPG. That person must ensure the proper passage of information from the JOPG to all other medical staff. When necessary, medical SMEs (e.g., medical CBRN) may be requested to attend particular JOPG meetings.

3. During all phases of the OPP medical planners must coordinate with other planners. This is to determine how their planning impacts medical considerations, and also to keep them informed of how medical considerations may impact their planning. More information on this is provided in Chapter 3.

2.3. PLANNING SEQUENCE

1. In accordance with COPD, the OPP comprises six phases designed to allow close collaboration between all levels of command. Greater detail on each phase can be found in the COPD. The medical staff must be involved in all phases.

SECTION 2 PHASES OF PLANNING

PHASE 1 – INITIAL SITUATIONAL AWARENESS OF A POTENTIAL/ ACTUAL CRISIS

2.4. GENERAL

1. An initial understanding of an emerging crisis is developed, which can be shared for collaborative situational awareness when authorized, to include an appreciation of the nature of the problem and the possible implications for NATO.

2. **Medical contribution**. When directed, medical staff will identify and analyse health threats in a potential or actual crisis. Medical intelligence (MEDINT) staff is engaged early and often.

PHASE 2 – OPERATIONAL APPRECIATION OF THE STRATEGIC ENVIRONMENT

2.5 GENERAL

1. The purpose of Phase 2 is twofold: first, to understand the strategic situation, the nature of the problem, the desired end state, and strategic objectives; and second, to provide operational advice to Supreme Allied Commander Europe (SACEUR) on the draft strategic Military Response Options (MROs).

2. Phase 2 is initiated by SACEUR's Warning Order. The desired outcomes are:

   a. The Joint Headquarter (Commander and staff (including JOPG)) has an appreciation of the strategic aspects of the crisis that will determine the context for all operational level activities.

   b. An Operational level warning order has been released to components and supporting commands.

   c. Operational advice on the draft MRO to assist their refinement has been submitted to SACEUR including risk assessments if available

3. **Medical contribution**. During Phase 2 the medical staff will:

   a. Participate in JOPG. As required, this may include SMEs, e.g., medical CBRN.

   b. Review the overall situation to include classified and open sources. This is a high-level understanding of the situation, and may identify factors to be further analyzed in Phase 3.

   c. If authorized, provide a representative for the Operational Liaison and Reconnaissance Team (OLRT). If not authorized, provide key questions for the team.

   d. Identify initial recommendations for force health protection measures, including for the OLRT.

   e. Provide medical input to MRO. Each option must be analyzed regarding medical risks and feasibility in terms of medical support. This may take on extra importance for Disaster Relief Operations or Humanitarian Assistance Operations.

f. Provide medical input to the Warning Order to subordinate commands.

g. Coordinate with medical staff in Supreme Headquarters Allied Powers Europe (SHAPE) and subordinate and supporting commands.

h. Identify key non-NATO medical actors, e.g., host nation health system, and IOs and NGOs providing health care in the affected region.

i. Identify critical operational requirements for mission essential force capabilities, e.g., patient decontamination, forward aeromedical evacuation, etc.

PHASE 3 – OPERATIONAL ESTIMATE

2.6 GENERAL

1. The purpose of the Operational Estimate[3] is:

   a. To understand the problem, the operational environment and the mission.

   b. To develop COAs, from which one will be selected.

2. Guided by the Commander, the operational estimate is a mechanism designed to draw together the vast amount of information necessary for the thorough analysis of a set of circumstances. This enables the development of feasible COAs leading to the Commander's selection of one to achieve the operational mission. Phase 3 is separated into two distinct parts: Phase 3A - Mission Analysis and Phase 3B - Courses of Action Development.

2.7 PHASE 3A - MISSION ANALYSIS

1. Mission analysis consists of an in-depth analysis of the crisis situation to determine the operational problem that must be solved and the operational conditions that must be established. It identifies the key factors that will influence the achievement of those conditions, and any limitations on the Commander's freedom of action for the development of an overall operational design. The desired outcomes of Phase 3A are:

   a. An updated Operational level warning order released to components and supporting commands (if necessary).

   b. The operational mission, including objectives, is understood, and any recommendations for change are successfully staffed to SACEUR.

   c. The Commander releases an initial operational design and Commander's Planning Guidance to guide development of COAs.

[3] An 'Estimate' is a command-led military problem solving process which is applied to ill-structured problems in uncertain and dynamic environments against shifting, competing or ill-defined goals, often in high stake, time-pressured situations. It combines objective, rational analysis with the power of intuition (a combination of experience and intelligence) and its output is a decision about a COA. It is, essentially, a practical, flexible tool formatted to make sense out of confusion and to enable the development of a coherent plan for action. At the operational level, we use the term 'operational estimate', not to be confused with the term 'staff estimates', which describes any functional area analysis in support of the operational estimate.

d. The Commander releases an Operational Planning Directive (OPD) to provide guidance to subordinate and supporting commands to assist their planning. This initiates their mission analysis.

2. **Medical contribution**. During Phase 3A the medical staff will:

a. Participate in JOPG to provide medical input to mission analysis (this will later inform the detailed medical planning).

b. If authorized, participate on the OLRT if not already deployed on Phase 2.

c. If authorized, liaise and coordinate with national and international actors.

d. Confirm requirements for medical support for the pre-deployment of enabling and initial entry forces and highlight gaps in available resources versus requirements.

e. Provide medical content to the updated Warning Order to subordinate commands.

f. Review medical related historical analysis and lessons learned. These may be from national records or the NATO Military Medicine Centre of Excellence Lessons Learned Database.

g. Conduct MEDINT appreciation for effects of adversary's weapons.

h. Identify medical-related key factors[4], if any. These are only the major issues of which other planners should be aware.

i. Analyse factors. This will be done in detail in the medical estimate (see Chapter 3). The medical planner must remain aware of what other planners are considering.

j. Identify medical assumptions[5] and critical operational requirements to include Commander's Critical Information Requirements (CCIR)[6]. Medical related CCIRs may be of particular importance in Humanitarian Assistance and Disaster Relief Operations, and in a CBRN threat environment.

k. Identify the impact of limitations (constraints[7] and restraints[8]) on medical planning.

l. Identify any medical limitations that may impact the operational planning.

m. Identify medical related operational risks, including mitigation strategies. Some treatment and evacuation capabilities and FHP considerations may impose limitations on the commander's scheme of manoeuvre.

n. Provide medical input to operational design. This will likely be limited except in Humanitarian Assistance and Disaster Relief Operations, and capacity building missions.

o. Identify medical component of the estimate of initial force/capability and command and control (C2) requirements.

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[4] 'key' factors that will have a direct bearing on what may have to be accomplished in the area of operations and under what conditions.
[5] Assumption - In planning, a supposition made about the current situation and/or the future course of events to complete an estimate of the situation and decide on the course of action.
[6] Crucial information identified and required by the commander that directly affects decision making and the successful execution of operations.
[7] Constraint - A requirement placed on a commander that dictates an action (must do).
[8] Restraint - A requirement placed on a commander that prohibits an action (must not do).

p. Contribute to and participate in mission analysis brief.

q. Provide medical input to OPD (guidance to subordinate headquarters).

r. If authorized, participate in Commander's Theatre reconnaissance.

s. Start full medical estimate (see Chapter 3).

2.8 PHASE 3B - COURSES OF ACTION DEVELOPMENT

1. The purpose of the final portion of the Operational Estimate is to determine **how** best to carry out operations that will accomplish the mission effectively and efficiently. After appreciating the Commander's planning guidance, the JOPG brainstorms possible COAs to achieve the mission. These will be analysed and compared against each other and the opposing COAs. The results of COA development will be presented, typically in a COA Decision Briefing, where the Commander will select a COA and confirm the final operational design, as the base concept for development into a formal CONOPS document in Phase 4. See COPD Chapter 4 Phase 3B for details on COA Development.

2. An OPD is released to formally trigger COA development at the component level.

3. **Medical contribution**. Medical planners must be intimate with the main COA develop in order to determine how a COA can be medically supported. Further detail is provided in the discussion of the medical estimate in Chapter 3.

4. Medical planners must ensure that the commander is aware of the medical implications of each COA particularly when the results of the analysis indicated that there is a significant potential for medical risk.

5. During Phase 3B the medical staff will:

a. Provide MEDINT input to opposing force COAs.

b. Provide medical input to COA development through advice on medical requirements, capabilities, capacities, timelines, etc and by developing the medical concept in support of each COA.

c. Provide medical input to COA analysis to determine if the COA is medically supportable. See Article 3.9.

d. Participate in wargaming of COAs to identify and mitigate gaps in the medical planning, and to identify risks and likely periods of high casualties by phase of the operation. The wargame helps refine requirements for the number and types of medical treatment facilities (MTF), their capabilities, capacities, locations, and opening and closing timings; means of medical evacuation (MEDEVAC), ground/air, forward/tactical/strategic; medical C2; and medical logistics. Potential mass casualty (MASCAL) situations should be included in wargaming.

e. Conduct troop-to-action[9] analysis.

f. Participate in COA decision brief. Only medical information vital for the Commander's understanding of the COA shall be presented. This may include

[9] Commonly referred to as "troops-to-task" in lower headquarters.

medical implications, how to mitigate them, and what the health and medical risk a commander will decide to accept.

g. Medical input to the selected COA (at this time, the detailed medical plan is developed).

h. Provide medical input to the OPD to subordinate headquarters.

PHASE 4 – OPERATIONAL PLAN DEVELOPMENT

2.9 GENERAL

1. Operational Plan Development is split into two distinct parts: Phase 4A – CONOPS development; and Phase 4B – OPLAN development. The Commander's approval of the CONOPS is a prerequisite to then proceed to the development of the OPLAN.

2. The CONOPS is the formal expression of the Commander's intent for the conduct of the campaign or operation, including the deployment, employment, and sustainment of forces. Submitted with it are a number of 'illustrative' statements of requirements that outline the necessary operational requirements needed to realize the Commander's vision. The draft operational CONOPS also provides the basis for the commencement of the development of the operational OPLAN.

2.10 PHASE 4A - THE DEVELOPMENT OF AN OPERATIONAL CONOPS

1. Phase 4A begins following the Commander's selection of a COA. The operational CONOPS should be developed in collaboration with subordinate and supporting commands

2. **Medical contribution**. During Phase 4A the medical staff will:

a. Provide the medical functional estimate (see Chapter 3).

b. Provide medical input to the Service Support Concept[10].

c. Develop the CONOPS medical annex. Annex QQ is mandated[11] for inclusion with a strategic CONOPS/OPLAN for approval.

d. Liaise with subordinate and supporting commands to include reviewing and coordinating their medical CONOPS.

e. Liaise with nations within the bounds of operational security.

f. Liaise with IOs within the bounds of operational security.

g. Provide medical input to the Combined Joint Statement of Requirements (CJSOR)[12]. The critical elements of information required by nations to determine their contributions and prepare them for deployment include:

[10] This is the overarching support concept led by the J4.
[11] MC133/4 Annex B
[12] The CJSOR is the document/tool which contains the (generic) forces requirements of a commander for a specific operation. See COPD Chapter 4, article 4-48b.

(1) Required capability.

(2) Size.

(3) Commander's required date for the force to be available for employment.

(4) Required destination.

(5) Priority of arrival.

(6) Command authority to be transferred to the gaining NATO commander.

h. Provide medical input to the Theatre Capability Statement of Requirement (TCSOR)[13].

i. Provide medical input to the Manpower Statement of Requirement[14].

j. Provide medical input to CCIRs.

k. Provide medical input to the Force Protection plan.

l. Provide medical input to the Civil-Military Cooperation plan.

m. Provide medical input to Branch[15] and Sequel[16] plans.

2.11 PHASE 4B – OPLAN DEVELOPMENT

1. Operational OPLAN development is an iterative, collaborative process that focuses on synchronising and coordinating the deployment, employment, protection, support and sustainment of the operational force during different phases of the operation within a single operational level plan.

2. Parallel, collaborative planning with subordinate and supporting commands, as well as with cooperating relevant national and international actors[17], ensures that the activities of all forces and operational functions are synchronised and coordinated to create the effects required to achieve the operational objectives. Synchronisation of operational OPLAN and component plan development is critical throughout the process.

3. **Medical contribution**. During Phase 4B the medical staff will:

a. Participate in the Force Generation conference.

b. Identify medical shortfalls within the task organization.

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[13] The TCSOR identifies capabilities required to support the entire theatre and which could be, in principle, eligible for common funding, e.g., a multinational Role 3. See COPD Chapter 4, article 4-48c.

[14] The Manpower SOR identifies personnel required to fill the force C2 requirements or activated HQs. See COPD Chapter 4, article 4-48d.

[15] Branches are options within a particular phase of an operation, which are planned and executed in response to anticipated opportunity or reversal within that phase, to provide the Commander with the flexibility to retain the initiative and ultimately achieve the original objective. Branches address the question of “what if”?

[16] Sequels are options for subsequent operations within a campaign or the following phase(s) of an operation. They are planned on the basis of the likely outcome of the current operation or phase, in order to provide the Commander with the flexibility to retain the initiative and/or enhance operational tempo and ultimately achieve the objective. Sequels address the question of “what’s next?”

[17] The exchange of information with relevant national and international actors will be subject to arrangements for the release of NATO classified information.

c. Conduct detailed planning and coordination with troop contributing nations and host nation(s) as well as subordinate and supporting commands to ensure that medical services can be delivered to the force to meet operational requirements for each phase.

d. Coordinate planning with relevant national and international actors.

e. Provide medical input to preliminary deployment planning to include Reception, Staging, Onward Movement (RSOM) and Integration.

f. Plan the deployment of medical elements into theatre in accordance with the deployment of operational elements by phase and location.

g. Identify Command and Control requirements for medical support taking into account the differences in national and Force Commander's responsibilities for the health of the force. It should identify any arrangements for coordination with non-NATO entities.

h. Identify requirements for the movement of common medical supplies and equipment and coordinate them with the logistics staff.

i. Identify mission-tailored medical C2 architecture based on information exchange requirements (IER)[18] in coordination with the J6 staff.

j. Provide medical input to the lessons learned process.

k. Provide the OPLAN Annex QQ.

l. Provide medical input to other functional areas' plans, e.g., engineers, CIS, logistics, force protection, etc. This includes food and water safety, vector and pest control, and MEDEVAC coordination.

PHASE 5 – EXECUTION

2.12 GENERAL

1. Phase 5 is the execution of the developed and approved operational OPLAN, which occurs in a dynamic, ever-changing environment. It includes operations assessment and, if required, the conduct of an OPLAN review. It provides the continuous direction and guidance for the execution of the operation, to include Fragmentation Orders (FRAGO) and Joint Coordination Orders.

2. **Medical contribution**. During Phase 5 the medical staff will:

a. Conduct plan review (using Phase 2-4 processes as required).

b. Provide medical input to FRAGOs.

c. Identify issues for the lessons learned process.

[18] IERs define the need for information exchange between two or more parties that support a given process. IERs are pivotal inputs to the CIS planning process. They ensure all relevant C2 services required in support of the mission are identified, and adequate planning and provision of C2 services can be achieved.

d. Conduct operational analysis of trends in the NATO Trauma Registry[19] (or national trauma registries).

e. Provide medical input to Branch or Sequel plans.

PHASE 6 – TRANSITION

2.13 GENERAL

1. The purpose of Phase 6 is to coordinate the transition and termination of a NATO military operation, including the transition of NATO military responsibilities to proper authority and the withdrawal of forces under NATO military command and their return to national command (reverse Transfer of Authority).

2. The end of an armed conflict cannot always be precisely identified. The transition from a combat operation to a post-combat operation is sometimes very gradual. For the execution of post-combat operations the Joint Force Commander may deploy units other than those deployed during the combat operation. Therefore supporting medical forces would be required to be adjusted to the new type of mission to be supported.

3. **Medical contribution**. During Phase 6 the medical staff will:

a. Provide medical input to the transition OPLAN.

b. Identify transition of medical capabilities to proper authorities. This could be the host nation, or an IO such as the United Nations or European Union.

[19] The NATO Trauma Registry is currently under development.

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CHAPTER 3: THE MEDICAL ESTIMATE

SECTION 1 – GENERAL

3.1. INTRODUCTION

1. This chapter provides detailed information required for medical planners to conduct the medical planning activities in accordance with the OPP described in Chapter 2. Synchronization with other functional planners, higher and lower headquarters, and supporting commands is necessary to ensure unity of effort. Also, due to the dual national and Force Commander responsibilities for the provision of health care to the Force early and continuous collaboration with and between nations is essential.

2. Concurrent with the overall OPP, medical planners will conduct a medical estimate. The medical estimate is used to verify the viability of the Commander's proposed COAs and to develop the concept of medical support for the selected COA. It must be fully integrated with the planning activities conducted by the operations and support staff. The depth of detail and accuracy of analysis will increase as the planning process unfolds.

3. Medical planning both informs and is informed by the OPP. During the medical estimate the medical planners may identify major issues that must be shared with other functional planners. Of particular concern is the requirement to identify any forecasted capability shortfall and the potential impact on their plans.

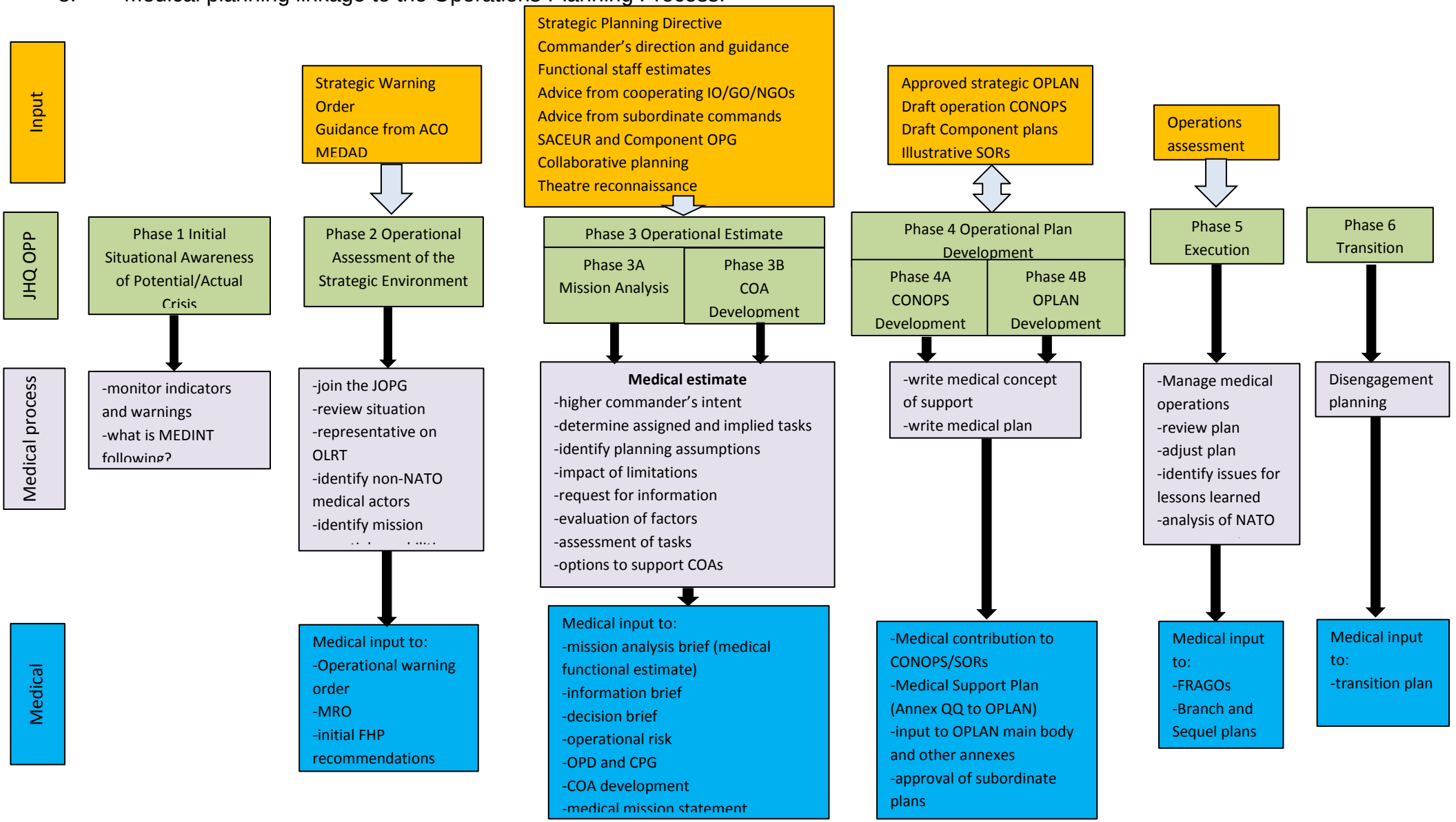
4. The MEDDIR will provide guidance to the medical planners. The detailed results of the medical estimate are briefed to the MEDAD and MEDDIR. Only major issues are briefed to the Commander.

5. Extant Contingency Plans (CONPLAN) may assist in guiding planning for the current situation. Where applicable, these should be reviewed at the beginning of any new planning process.

6. The output of the medical estimate is the Medical Support Plan. It will usually form an annex within the commander's overall plan and can be updated or replaced as the operation proceeds to ensure it adapts to changing circumstances and requirements.

7. The detailed activities in each phase of OPP are detailed in COPD. The linkages between medical planning and OPP at an operational level headquarters are shown in figure 3.1. This is also illustrated by the medical planning cycle depicted in Annex A.

8. Medical planning linkage to the Operations Planning Process.



3.2 MEDICAL INTELLIGENCE (MEDINT)[20]

1. An essential element of medical planning is the availability of reliable, timely, specific and applicable MEDINT. Medical intelligence preparation of the operational environment assists medical planners in analyzing enemy, environmental, and medical threats in the JOA. It includes the assessment of hazards such as infectious diseases, environmental and industrial health issues, other public health events, CBRN threats, effects of adversary weapons, as well as assessments of host nation and adversary medical capabilities. MEDINT products, such as a Health Risk Assessment, will be attached as an appendix to the Medical Annex.

2. Early in the planning process medical planners must identify their intelligence requirements to the MEDINT section in order to focus their activities.

3.3 RECONNAISSANCE

1. Reconnaissance can be an important part of early planning at all levels. The aim is to confirm and update the medical information picture, confirm availability of medical resources in the theatre, and identify potential health hazards. In humanitarian assistance and disaster relief operations the reconnaissance assesses the local health needs. AMedP-3.2 *Medical Information Collection and Reporting* provides guidance on the information sought during a reconnaissance. It should be normal practice that any reconnaissance to the exercise or operations area includes suitably qualified medical personnel with the necessary expertise to address the above issues. As a minimum such a team will normally include an environmental health technician and an experienced medical planner but additional specialist clinical and force health protection input may also be needed.

3.4 REQUESTS FOR INFORMATION (RFI)

1. Throughout the planning process, planners will require information from other functional planners and subject matter experts. Once an RFI is identified it must be sent and tracked until the information is received.

SECTION 2 - CONDUCT OF THE MEDICAL ESTIMATE

3.5 ESTIMATE FORMAT

1. The medical estimate is conducted in five steps. Annex B provides a format to guide the medical estimate.

[20] See AJMedP-3 *Allied Joint Doctrine for Medical Intelligence*.

STEP 1 - MISSION ANALYSIS

3.6 MISSION ANALYSIS

1. The medical mission analysis ensures that the medical staff has a clear understanding of the mission to be accomplished. It includes a review of the current or potential situation and a background overview of the circumstances that have led to that situation. Information is drawn from the Strategic Planning Directive, Commander's guidance and directives, direction given by the MEDDIR, general and medical intelligence products, and open source information (e.g., World Health Organization, CIA Fact Book).

2. It establishes the results to be achieved and identifies critical operational requirements, limitations on freedom of action and inherent risks. It must consider the intentions of the higher commander, the end state, assigned and implied tasks, and limitations.

3. **Assigned tasks** are those specified by the Commander. **Implied tasks** are those that must be performed to accomplish an assigned task or the mission, but are not stated in the higher headquarters' order.

4. **Planning limitations** exist as restraints and constraints**. Constraints** impose specific obligations that must be met. **Restraints** are prohibitive in terms of defining what must not be included in the medical plan. Limitations are generally related to time, space, or resources. See figure 3.2 for examples.

	Time	Space	Resources
Constraints	• Role 3 MTF must be operational no later than ** date	• Casualty support unit must be located at location X	• Multinational MTFs must hold XX days of supply
Restraints	• Must not deploy before **date	• Boundaries not to be crossed • Route not to be used for ground evacuation	• Medical forces may not exceed XXX personnel

Figure 3.2 – Sample Constraints and Restraints

5. **Determine Assumptions.** Throughout the conduct of the estimate, gaps may be revealed in knowledge and information. It may be necessary to make certain assumptions in order to continue planning. Assumptions must be realistic and their validity confirmed by higher authority, either medical or operational. These assumptions are modified when specific planning guidance and factual data become available. When possible, RFIs should be initiated to turn each assumption into a fact.

6. **Medical Mission Statement**. The mission analysis will lead to a medical mission statement that identifies the essential tasks to be accomplished. The medical mission statement concisely defines:

a. Who will conduct medical support.

b. What is to be done.

c. When it will take place.

d. Where it will occur.

e. Why it will be conducted (to achieve what effect).

7. The medical mission statement should not state **how** medical support will be conducted. These details will be identified during Step 3 - COA Development.

8. The medical mission analysis must be revisited whenever the situation changes.

9. The mission analysis will identify factors that will need to be fully addressed during Step 2 – Evaluation of Factors.

10. **Mission Analysis Briefing**. Medical staff may participate in two mission analysis briefings. The first is to the Commander. Only major medical points impacting the Commander's mission analysis will be briefed. These may include critical resource and FHP issues requiring the commander's attention.

11. The second medical mission analysis briefing is to the MEDDIR and must be comprehensive. The MEDDIR will provide further guidance regarding medical planning.

STEP 2 - EVALUATION OF FACTORS

3.7 EVALUATION OF FACTORS

1. The medical staff produces a list of relevant factors to be considered. The factors are evaluated to determine their impact on the four areas of medical support as defined in AJP-4.10 *Allied Joint Medical Doctrine*:

a. Command and Control, Communications and Information Management. See Article 3.16 below.

b. Force Health Protection (FHP).[21] See Article 3.17 below.

c. Military Health Care (MHC)[22] and Medical Evacuation (MEDEVAC).[23] See Article 3.18 below.

d. Medical Logistics. See Article 3.19 below.

2. The evaluation of factors must be comprehensive and each deduction[24] thoroughly analyzed to come to a conclusion[25] resulting in a:

a. Task.

b. Organization.

c. Resource requirement.

d. Coordinating instruction, such as phasing or sequencing.

e. Request for information.

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[21] FHP is described in AJMedP- 4 *Allied Joint Medical Doctrine for Force Health Protection.*

[22] MHC is described in AJMedP-8 *Allied Joint Medical Doctrine for Military Health Care.*

[23] MEDEVAC is described in AJMedP-2 *Allied Joint Medical Doctrine for Medical Evacuation.*

[24] Deductions should be concise, relevant and expressed as building blocks of information. They should lead logically to a set of conclusions. It may be necessary to revise some deductions as later aspects of the analysis may affect some deductions developed earlier in the process.

[25] Conclusions must be relevant and useful in determining military requirements and specific operational conditions that must be established with respect to forces/actors, time and space.

f. Planning guidance to subordinate commands. This may include constraints or restraints.

3. Factors are interrelated. Conclusions from one factor may impact several other factors.

4. Conclusion will identify information that must be shared with other planners.

5 When evaluating factors, the generic medical planning considerations found in Section 3 of this chapter should be addressed. These considerations may impact multiple factors.

6. Conclusions drawn from the evaluation of factors will enable the medical staff to contribute to the development, analysis and comparison of viable COAs, and to develop the medical CONOPS and the medical plan. The conclusions will also provide the input to the CJSOR.

7. The evaluation of factors should be conducted in the three column format:

FACTOR	DEDUCTION (what is the significance of the factor?)	CONCLUSION (what can or should be done?)
Example • Periods of severe weather	• Restriction on helicopter operations will impact forward aeromedical evacuation • Increased dependence on ground evacuation assets	• Request ground assets • Increase number of MTF in order to meet optimal clinical timelines • Additional holding capacity

8. Annex B provides a sample non-exhaustive list of factors to be considered. The following paragraphs provide elaboration on a few key factors.

9. **Environment**. The assessment of the environment should be conducted in collaboration with intelligence, MEDINT, and FHP staffs. It comprises the following categories:

a. Terrain Analysis. To include the impact of topography, urbanization, infrastructure, roads, airports, seaports on siting of MTFs and evacuation assets. Distances between locations should be converted into time to facilitate the link between clinical timelines and potential locations of units. Difficult evacuation routes may necessitate the forward placement of surgical capabilities or more hospital beds. A contiguous or non-contiguous battlespace impacts the siting, capacity and capability of MTFs and MEDEVAC assets.

b. Meteorological. This includes weather patterns and their likely or possible health effects on friendly forces. Hot, cold, wet, dry, and wind conditions are considered for their impact on the types and quantities of medical supplies and equipment, the ability to warm or cool patients, and the capability to maintain the temperature of sensitive medical supplies and equipment. It may also impact clinical specialties required to support the force, e.g., tropical medicine. Particular FHP considerations include clothing, equipment, and acclimatization. The weather is also considered for its potential impact on MEDEVAC, particularly aeromedical evacuation (AE).

This in turn may impact the requirement for more clinically capable facilities and greater holding capacities. Light conditions may impact MEDEVAC timelines.

c. Health Risks. On operations, a range of potential hazards may affect the health of the force or population at risk (PAR). Emphasizing the importance of diseases and non-battle injuries (DNBI) as the primary cause of health-related restrictions to human performance on operations, **CBRNE3T** comprises the following threats:

   i. **Chemical** threats, such as conventional chemical agent threats plus toxic industrial chemicals, riot control agents and chemical hazards derived from pharmaceuticals.

   ii. **Biological** threats, such as live organisms, toxins and biological hazards deliberately employed to harm the PAR.

   iii. **Radiological** threats, such as material that release ionizing (alpha, beta, gamma radiation and neutrons) and non-ionizing radiation (including directed energy).

   iv. **Nuclear** threats, such as weapons or events that result in nuclear fission/fusion reactions.

   v. **Explosive** (and ballistic) threats cover all consequences of explosive activity on human bodies including gunshot wounds, indirect fire, improvised explosive devices, shells and bombs.

   vi. **Environmental** threats, such as environmental conditions likely to cause harm such as heat, cold, and altitude.

   vii. **Endemic** threats, such as infectious diseases (Biological Agents of Operational Significance) that are not deliberately released that pose a hazard to the health of the PAR.

   viii. **Traumatic** threats cover the trauma element of non-battle injuries to complement the explosive (and ballistic) threats causing battle-injuries.

d. Civilian Population. A good understanding of the cultures, the political, economic, religious, criminal activities, and social situation in the JOA is an important precondition for comprehensive operational planning. Conventional military operations' impact on the living conditions of the civilian population must be considered. This could include public health issues, damage of vital infrastructure, civilian casualties as well as refugees and displaced people requiring health care and humanitarian aid. In Humanitarian Assistance and Disaster Relief the PAR to be treated may also include women, children, and the aged. All these factors impact the selection of medical capabilities and the supplies required.

e. Local Resources. What can be provided by the host nation or adjacent nations without a negative impact on the local health care system or infrastructure? This includes real estate, labour, materiel, civilian and military medical treatment facilities.

f. Other Stakeholders. Which IOs or NGOs are working in the area? What are their attitudes toward the military?

10. **Opposing Forces**. Threat evaluation links the adversary's military capability to an assessment of the types of casualties that might be expected.

a. Strength, disposition and tactics: The numbers and types of opposing forces and their locations impact casualty rates and likely locations of casualties.

b. Capability and intentions: The type of enemy weapons employed and tactics will influence the number and type of combat casualties, e.g., peer-on-peer forces or irregular forces; conventional, hybrid, or irregular warfare; or use of CBRN weapons. Continuous operations increase combat casualties and operational stress injuries. The use of improvised explosive devices may delay ground evacuation operations and limit freedom of movement for medical platforms, as ground ambulances may require armed escorts to accompany movement and up armoring of ambulances. An anti-aircraft capability will impact the use of AE assets.

c. Adversary compliance with the Law of Armed Conflict (LOAC) is considered to determine what should be the posture regarding camouflage or displaying the distinctive emblem [26] (Red Cross, Red Crescent, Red Crystal) on MTFs and MEDEVAC resources.

d. Cyber threat. This may impact the ability to communicate with MTFs and MEDEVAC assets, and the use of electronic health records and telemedicine.

11. **Friendly Forces**. The assessment of friendly forces determines the PAR. All entitled personnel within the JOA should be included. Depending on the mission the PAR may include NATO and coalition forces, NATO civilians, NATO contactors, local population (military and civilian), refugees and displaced persons, detainees and prisoners of war. Conclusions will inform the development of the Theatre Medical Rules of Eligibility (MRoE) (see Article 3.21). It is important to note that not all personnel in the PAR are necessarily at the same level of risk, nor will all personnel be entitled to the same spectrum of care.

12. The type of operation (warfighting, peace support, stability, disaster relief, etc) and the friendly forces' concept of operations will impact the medical capabilities and capacities required to support the force. Different phases of the operation may require different medical support elements. The build-up of medical assets, including medical C2, must be commensurate with the build-up of forces. Robust and comprehensive capability must be available at the initiation of operations, expand progressively as force strength expands and risks increase, decrease progressively as the force strength and risks decrease, and there must include a surgical capability to meet peak casualty rates in excess of expected daily rates.

13. The Force command structure must be assessed to ensure the medical C2 aligns with the overall C2. For example, medical staff should be included at theatre, regional, and component headquarters. This will also determine the number of Medical Coordination Cells required.

14. A subset of friendly forces is the medical capabilities committed by the troop contributing nations. Conclusions will identify resource shortfalls and potential multinational medical solutions.

[26] See ATP-79 *Orders for the Camouflage of Protective Medical Emblems on Land Tactical Operations* (STANAG 2931)

15. On many operations NATO may be working with other IOs such as the United Nations, European Union, African Union, etc. The coordination of medical efforts may be required.

16. **Time and Space**. The location of, and distances between, friendly elements is a key determinant in locating MTFs and the type and quantity of MEDEVAC assets required. The geographic disposition of the friendly forces, and the impact of terrain features, must be assessed for time and space in order to try to meet the optimal clinical timelines (see Article 3.15).

17. Long evacuation timelines may require additional holding capacity at MTFs along the lines of communications.

18. The initial deployment timelines must be assessed to determine the medical requirements to support RSOM.

19. Lengthy or difficult lines of communications are assessed to determine requirements for greater than normal medical logistics capacity and stock levels.

20. **Casualty Estimate**. The casualty estimate is a key determinant of the medical resources required to support an operation. It predicts where, when, what numbers and what type of casualties will occur. It may have great political and operational significance impacting the Commander's planning. The estimate of battle casualties is led by the J3 and J5 with input from J1, J2 and medical, the estimate of DNBI is led by medical with input from J2. See section 4 of this chapter for details on the casualty estimation process.

3.8 Assessment of Tasks

1. The evaluation of the preceding factors will produce a list of tasks and the medical capabilities required to meet the mission medical support requirements. Most will be grouped into the functional areas of Command and Control, Communications and Information Management, FHP, MHC and MEDEVAC, and Medical Logistics. General considerations for each of these functional areas is found in Section 3 of this chapter.

STEP 3 - COURSE OF ACTION DEVELOPMENT

3.9 COURSE OF ACTION DEVELOPMENT

1. Generally medical does not create its own COAs. Rather, like other support functions, it determines options for how each of the Commander's COAs would be supportable from a medical perspective. The medical staff provides advice on medical requirements and develops the medical concept in support of each COA. It analyzes the likely workload (e.g., surgical suites required, Forward AE, etc) of medical assets and facilities to identify any resource shortfalls that may impact the COA's feasibility. The analysis includes the casualty estimate, the interdependent relationship between casualty numbers and holding policies; the type of operation and environment; and health risk. Medical Support options shall be comprehensively analyzed including joint, civilian, multinational, interagency, contract and host nation options.

2. At the end of COA development, a brief is provided to the commander. The commander needs to know if the COA is supportable from a medical perspective, and if

so, the options available for providing medical support, the health implications of any COA, the associated risks and possible mitigation strategies, and medical resource requirements. The medical staff must be prepared to present and explain the medical concept of support, the employment of assets, the rationale for selected medical objectives and tasks, casualty estimates, and limitations that may be deciding factors in COA development.

3. Similar to the Commander's COAs, each medical option must be tested to determine its viability to include suitability, acceptability, feasibility, exclusivity, completeness, and compliance with NATO doctrine.[27]

STEP 4 – COMMANDER'S DECISION

3.10 COMMANDER'S DECISION

1. The Commander will decide which COA will be developed into a CONOPS. If more than one option for HS support was developed for the COA, the Commander, based on advice from MEDAD will determine which option is to be developed.

STEP 5 - MEDICAL CONCEPT AND MEDICAL SUPPORT PLAN

3.11 MEDICAL CONCEPT AND MEDICAL SUPPORT PLAN

1. The selected COA is developed into a CONOPS. Concurrently, the medical planners will develop the medical concept of support. It explains the general principles of medical support for the operation and identifies the medical requirements necessary to accomplish the mission. It is tailored according to the time frame and phases of the operation. The medical CONOPS includes the medical coverage within the JOA, initial MRoE (see article 3.21), and preventive medicine measures.

2. The development of the medical concept of support requires close coordination between ACO Medical staff on the military strategic level, JFC/Joint Command (JC) Medical staff on the operational level and the MEDDIR and staff in a formation or theatre of operations. It will also include coordination with troop contributing nations, host nation(s), and IOs if applicable.

3. Once approved, the medical concept of support to the CONOPS is further developed into the Medical Support Plan. The plan must comprise all relevant information on the situation within the JOA for all phases. It must include sufficient details to enable subordinate and supporting headquarters to conduct their planning.

4. The Medical Support Plan is written as Annex QQ to the OPLAN. A template is provided at annex D.

5. Medical planners will also provide input to other functional areas' plans, e.g., engineers, CIS, logistic, force protection, etc.

[27] See COPD Chapter 4, Article 4-36 for details.

3.12 MEDICAL RESOURCE PLANNING FOR OPERATIONS

1. Conclusions made in the medical estimate will determine the resources (facilities, assets, capabilities, supplies, services, etc.) required to support the operation. These requirements are listed in the CJSOR and the TCSOR, which are presented to the nations to determine which nation can provide which capability, or if multinational solutions are possible. These are discussed at medical planning conferences.

2. **Identifying Requirements**. To support planning, it is essential that requirements are expressed in terms of the capabilities (or effect) and capacities required, rather than being prescriptive as to how this capability is to be provided. For example, the MEDEVAC requirement may be identified as an airframe capable of flying in all conditions, day or night, at 20 minutes notice to move, with a medical crew embarked capable of sustaining up to 2 x Category A casualties. How this is to be achieved is up to the provider.

3. **Deployed Force Infrastructure.** Infrastructure requirements for deployed forces are normally a national responsibility; however, there may be some areas for multinational infrastructure solutions. ATP-3.12.1.4 *Deployed Force Infrastructure* **(**STANAG 2632) provides some medical planning considerations.

4. **Medical Planning Conferences**. The responsibility for medical planning is collectively shared by NATO HQ staffs and nations. Medical planning conferences are a principal tool by which planning is coordinated and transparency is achieved. These conferences are intended to provide specialist medical input and are held at the ACO level with participation from JFCs/JC and nations.

5. The type of planning (e.g. Advance Planning to develop contingency operation plans or Crisis Response Planning) will dictate the timing and frequency of conferences. Medical planning conferences will usually be linked with the overarching Logistics Planning Conferences [28]. Using the CJSOR and TCSOR the medical planning conferences will determine:

a. National medical contributions.

b. Medical shortfalls.

c. The optimal methods of medical support to be employed, e.g. role specialisation, lead nation, framework nation, multinational pooling, centralised contracting and national support.

d. The medical command and control structure.

e. The harmonisation of medical plans at all levels of command.

f. The resolution of any deficiencies or outstanding medical issues.

[28] See AJP 4(A)

SECTION 3 GENERIC MEDICAL PLANNING CONSIDERATIONS

3.13 GENERAL

1. When evaluating factors the following planning considerations should be addressed. Some of these considerations may impact several factors.

3.14 MULTIPLE MEDICAL LINES OF OPERATION

1. On some missions there may be multiple medical lines of operation, including support to own forces, mentoring or training of host nation personnel, and humanitarian assistance. Whenever possible different personnel should be used for each line of operation.

3.15 CLINICAL TIMELINES

1. Clinical timelines are the primary driver of medical support planning. Evidence based planning timelines known as the **10-1-2 (+2) Timeline** provide guidance regarding the siting of medical evacuation assets and medical treatment facilities. It encompasses:

   a. **Effective First Aid** adapted to the tactical situation within **10 minutes** after injury, wounding or onset of acute symptoms.

   b. **Progressive and Damage Control Resuscitation (DCR)**[29] within **1 hou**r after injury, wounding or onset of acute symptoms.

   c. **Damage control surgery (DCS).** Life, limb and function saving surgery within 1 hour, but not later than **2 hours** after injury or wounding.

   d. Mission essential Secondary Health Care (including specialized surgery) capabilities and capacities that cannot be deployed forward for tactical reasons, **2 hours** after DCS is completed.

2. The 10-1-2 (+2) timeline notes that, while it remains desirable for a patient to receive DCS within one hour of wounding, this may not always be possible. The tactical situation or resource limitations may not allow surgical capabilities too far forward. Under these circumstances, pushing an enhanced DCR capability forward is a mitigation strategy. This, in turn, requires a robust MEDEVAC system.

3. The 10-1-2 (+2) planning timelines will form part of the risk assessment that is integral to the Estimate process. A key requirement will be to identify the capabilities and capacity needed to meet these timelines in the context of the environment and the predicted casualty load and mix, and to identify the people needed to undertake the medical support roles identified, in terms of both their professional skills and level of military proficiency needed.

4. Due to the nature of maritime operations, the 10-1-2 (+2) timeline often cannot be achieved (see Chapter 5).

[29] See AJP 4.10 for further information

3.16 COMMAND, CONTROL, COMMUNICATIONS AND INFORMATION MANAGEMENT

1. The requirements for a capable command and control architecture are defined in AJP-4.10. Medical planners must design a dedicated medical C2 structure capable of planning, executing, controlling, supporting and auditing the full spectrum of medical support functions. The medical command system should seamlessly provide all resources required to support treatment, evacuation and flow of information from initial point of wounding, injury or sickness through evacuation to definitive treatment and final disposition.

2. The treatment and movement of a single casualty may involve coordination across a number of headquarters and command boundaries, as well as nations. The plan must consider how medical elements communicate and coordinate with coalition partners. It must account for any legal/policy requirements for sharing of information, e.g., patient confidentiality.

3. To assist planning and to be able to provide medical advice to the Commander, the MEDAD, MEDDIR and medical staff require situational awareness. Medical decision-making is dependent on accurate processing and timely distribution of environmental, tactical, patient and casualty data to all authorized personnel. Efficient communications and information management is essential to effectively provide medical support and enable medical planning, deployment health surveillance and force health protection, patient tracking, patient transfer regulation and medical incident response.

4. The lines of medical accountability and the medical C2 architecture must be clearly established in relevant OPLANs and agreed upon by the nations. It must consider the dual Command and national responsibilities for the provision of healthcare.

5. AJMedP-5 *Allied Joint Doctrine for Medical Communications and Information Systems* (MedCIS) describes the medical information management system requirements for planning and conducting operations. Close liaison with J6 during the planning process as well as early consultation of the nations will be the key to an interoperable network in a joint and combined environment.

6. The interface between medical and personnel information systems and between Alliance and nations must be considered within this factor.

7. **Telemedicine**. The effective use of telemedicine assists the goal of providing home-nation quality of care while using a reduced medical footprint in theatre. During the planning phase early liaison with J6 staff is necessary to identify the increased communications bandwidth requirements to support telemedicine and the J6's ability to supply the required bandwidth.

8. **Patient Tracking.** The tracking of patients is of particular concern to Commanders and national authorities. Patients from one nation may enter MTFs from another nation and then be moved to an MTF of yet another nation; therefore, a single tracking system is required in order to keep all relevant nations and commands informed.

3.17 FORCE HEALTH PROTECTION (FHP)

1. FHP forms a part of overall Force Protection. Medical planners must harmonize their FHP considerations with the J3 staff. A FHP Cell will normally be established in the

medical staff in order to inform the medical contribution to the OPP. AJMedP-4 *Allied Joint Medical Force Health Protection Doctrine* (STANAG 2561) provides further information on the FHP process of hazard identification, health risk assessment, management, control and communication, and its linkages with the overall medical planning.

2. The medical estimate should identify any mission specific medical countermeasure requirements against health hazards in the area of operation, (e.g., requirements for immunizations, preventive medicine and therapeutics, and other individual-carried medical products). FHP must continuously collaborate with Medical Intelligence in developing the medical countermeasure requirements.

3. A fundamental component of FHP is health surveillance which is the continuous, systematic collection, analysis, interpretation, and dissemination of health-related data with respect to deployed NATO forces. It is intrinsic to obtaining a clear picture of the health status of the Force and enables NATO to adopt appropriate measures. Medical planners must ensure the requirement for health surveillance is included in the medical plan. AMedP-4.1 *Deployment Health Surveillance* (STANAG 2535) provides information on this subject.

4. Food and water safety is another major component of FHP. For this purpose the FHP cell will be supported by specialized laboratories if necessary.

3.18 MILITARY HEALTH CARE (MHC) MEDICAL EVACUATION (MEDEVAC)

1. **Operational MHC** includes all functions and activities essential to support health promotion and disease prevention in the JOA, to save life limb and functionality, restore and stabilize physiological functions and to ensure a standard of care equating to best medical practice. The components[30] of MHC are:

a. Preventive Medicine.

b. Occupational Medicine.

c. Emergency Care. Emergency Care encompasses all medical interventions preventing the loss of life, limb, function and body tissue or undue suffering. Pre-hospital emergency care is delivered from the point of injury / insult to admission in a hospital care facility. It is usually followed by Emergency Hospital and Specialist Care.

d. Routine Care.

e. Mental Health Care.

f. Dental Care.

g. Veterinary Support.

2. MHC is delivered through an end-to-end medical support system of deployable and mission-tailored medical assets, units and facilities, which can be enhanced according to operational requirements. MTFs are categorized by Roles of Medical Care defining function and capability.[31] Enhancing and upgrading the clinical capacities and capabilities

[30] See AJP 4.10 for additional information.
[31] See AJP 4.10 for additional information.

of MTFs generates demands for additional equipment, personnel and supplies, which in turn increases movement, transport, and other support requirements.

3. **MEDEVAC** is the movement of patients under medical supervision to a medical treatment facility. The MEDEVAC system's objective is to get the right patient onto the right platform with the right medical assets to the right medical treatment facility at the right time. To accomplish its mission, a MEDEVAC system should have:

   a. The ability to evacuate casualties to, or between, MTFs 24 hours a day, in all weather, from all terrain and in any operational circumstances. The evacuation organization must also identify alternative means to ensure continuation of care is maintained even if evacuation itself is restricted due to operational, environmental or technical reasons.

   b. The provision of the necessary clinical care to patient throughout the evacuation, using appropriately trained clinical staff with dedicated equipment.

   c. The ability to regulate the flow of patients and their disposition to the most appropriate MTF.

   d. The ability to track patients accurately throughout evacuation.

4. **General MEDEVAC planning considerations**[32] include:

   a. Enemy activity.

   b. Anticipated casualty load, type, and expected areas of patient densities.

   c. Time and space between potential points of injury to MTFs, and between MTFs.

   d. Contiguous or non-contiguous battlespace.

   e. Range, capacity, speed, protection, notice to move requirements of the MEDEVAC platforms.

   f. Communications with the MEDEVAC platforms, sending and receiving MTFs, the battlespace controlling headquarters, and the Patient Evacuation Coordination Cell.

   g. Enroute care capability.

   h. Force protection.

   i. Route selection (controlled routes, barriers).

   j. Airspace control.

   k. Weather.

   l. Evacuation of infectious casualties.[33]

   m. Evacuation of prisoners of war/detainees.

   n. Commander's policy regarding the display of the Red Cross/Red Crescent.

   o. Property exchange.

   p. Medical supplies replenishment.

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[32] See AJMedP-2 *Allied Joint Doctrine for Medical Evacuation* for more information.
[33] See AAMedP-1-1 *Aeromedical Evacuation* chapter 7 provides some planning considerations.

5. Nations are responsible for the strategic aeromedical evacuation of their own forces to home-based national hospitals. This may be conducted through bi-national or contracted arrangements.

6. Casualty Staging Units should be established at designated air bases, especially the main Air Port of Disembarkation. These should be provided on a multinational or lead nation basis as there is rarely room at an airfield for each nation to establish its own medical structure.

7. **Medical Regulating**. Medical regulating is the process of directing, controlling and coordinating the transfer of patients within and outside a JOA from the point of injury/illness through the continuum of care. This is done in order to:

a. Facilitate the most effective use of medical treatment and evacuation resources.

b. Ensure that the patient receives appropriate care in a timely manner.

c. Ensure adequate beds are available for current and anticipated needs.

8. In any JOA the regulation of patients through the continuum of care is a dynamic process based on an evacuation plan that has to be closely linked to the medical footprint, the casualty rate and theatre evacuation policy. It must take into consideration planning and operational factors such as:

a. Availability of evacuation assets at the tactical and strategic level.

b. MTF availability, their specialist capabilities, medical equipment status and staffing levels.

c. Current bed occupancy status at each MTF including any surgical backlog.

d. Location of airport / seaport of embarkation.

e. Location, number and clinical condition of patients.

f. Current tactical situation and associated risk from movement to patients or evacuation assets.

g. Communication status in the regulating chain.

h. Theatre patient return policy.

3.19 MEDICAL LOGISTICS

1. The guiding principle for medical logistics planning is that it is a national responsibility; however, multinational solutions may offer efficiencies for the medical supply chain. The NATO Commander may exercise authority to ensure best possible coordination of national activities in this area. The medical logistics system needs to ensure the sustainability of the medical support system under all operational conditions. Due to its technical complexity and legal requirements medical logistics factors require full analysis.

2. Differing national legal requirements and standards may impact multinational medical logistics solutions. For example, many nations have restrictions regarding the use of another nation’s blood and blood products. Although national contingents are responsible for the supply of blood to their own patients, this is not always practical and

feasible. Multinational support arrangements could be established for the provision blood and blood products, ensuring that national and internationally agreed standards are met.

3. The movement of medical supplies and equipment requires collaboration with general logistics. This includes the identification of the special handling requirements for medical supplies and the prioritisation of delivery.

4. Other general logistics factors include water, feeding, power, mortuary affairs, and disposal of clinical waste. Being a combined medical and logistics responsibility, evaluation of these factors requires close liaison with the J4 staff.

5. **Medical Waste**. Plans must be developed to address the disposal of medical and radiological waste. The plan must consider pollution prevention, protection of the environment, and compliance with pertinent regulatory guidance/policy, including host nation laws.

3.20 THEATRE PATIENT RETURN POLICY

1. The Theatre Patient Return Policy is established by the operational commander on advice of the medical staff, it defines the maximum length of time (in days) that a patient will be allowed to receive treatment in theatre, recover and return to duty. In determining what it should be medical planners consider the availability of medical assets, constraints on movement, particular operational imperatives, distances, weather and topography. Independent from tactical imperatives, it will also be affected by factors such as welfare considerations, public expectations, national policy, and availability and cost of strategic evacuation.

2. The Theatre Patient Return Policy is directly related to the hospital bed requirement in the theatre of operations. Shorter lengths of stay require greater strategic evacuation capacity, but a lower number of hospital beds in theatre.

3. The Theatre Patient Return Policy may evolve as an operation matures. On enduring operations increases in capabilities and capacities of MTFs may allow for longer stays in theatre.

3.21 MEDICAL RULES OF ELIGIBILITY (MRoE)

1. During operations, numerous categories of personnel seek help in NATO's MTFs particularly when the host nation civilian medical infrastructure is not able to provide adequate care. To assure appropriate care can be provided when it is needed, it must be clear, who is eligible for care. The MRoE is tied to the PAR and identifies which categories of personnel are entitled to what care/services and should include any cost recovery mechanisms.

2. Although there might be national regulations in place, in Alliance's operations harmonized MRoE determined by ethical, legal (including International Humanitarian Law) and operational aspects are crucial to ensure, that the instinctive desire of NATO health

care providers, particularly in Stabilization Operations, is balanced against operational requirements and the over-arching objectives.

3. MRoE are developed during the planning process and may be different for each mission. MRoE are approved by the Commander based on advice from the MEDAD. A simplified guide to support the development of MRoE is shown at Annex C.

3.22 MULTINATIONAL MEDICAL SUPPORT

1. Multinational medical solutions may be desirable to reduce redundancy and limit the impact on limited resources. Multinational medical support involves the coordination and, in some cases, integration of assets from multiple nations through collaborative planning, deployment and utilization. It is supported by multinational decision-making regarding force health protection, medical management and clinical processes.

2. Multinational medical support options are described in AJP-4.10B Chapter 10[34] and AJMedP-9 *Multinational Health Service*. Framework, lead or role specialised nations have to be identified, and the tasks and responsibilities and those of nations clearly delineated.

3. Medical planners require a flexible approach in how assets are grouped and utilized. The greater the number of nations involved the greater the level of multination planning and coordination needed. Whenever medical planners from different nations are involved in the development of multinational support options, it is mandatory that the NATO Commander's medical staff steers the medical part of the planning process.

4. Each particular national strategy will have implications for the provision of medical support. National differences such as varying clinical protocols, different languages and legal restrictions create planning challenges. The early involvement of all contributing nations as well as a continued interactive dialogue during the medical planning process is fundamental.

5. Nations retain the option to develop mutual support arrangements, bi- or multi-laterally to provide medical support to their forces. Most mutual support agreements will be created at the national level and involve the strategic NATO authority to ensure the national arrangements fit into the overall NATO concept of medical support.

6. **Multinational Medical Unit (MMU)**. To take advantage of economies of scale, a MMU may be established comprising staff from multiple nations. The establishment of an MMU requires close coordination between the lead nation and contributing nations. Prior to deployment this includes identifying individual augmentation, modules, collective training, scopes of practice, and credentialing and privileging. AMedP-9.1 *Modular Approach for Multinational Medical Treatment Facilities* (STANAG 6506) and AMedP-9.2[35] *Guidelines for a Multinational Medical Unit* (STANAG 2552) provide planning considerations for a MMU.

7. A Multinational Medical Management Steering Group (MMMSG) may be established to provide oversight of an MMU. The MMMSG is responsible for determining,

[34] Also, see AJP-4.9 *Allied Joint Doctrine for Modes of Multinational Logistic Support* and STANAG 2034 *NATO Standard Procedures for Mutual Logistic Assistance* for more information
[35] Formerly AMedP-1.3

establishing and enforcing the clinical standards, professional protocols and manning levels for the MMU.

8. The NATO Support and Procurement Agency (NSPA) may contract infrastructure support for MMUs.

9. Each multinational medical unit must be certified prior to deployment. See Chapter 6 Section 2 for details.

10. **Medical Support to Multinational Units (Headquarters, Logistics)**. Role 1 medical support is usually a national responsibility. In the context of multinational facilities, particularly deployed headquarters, the Commander shares responsibility with national support elements for ensuring Role 1 provision for all members of that headquarters. Unless other arrangements are agreed, the nation providing the Commander of the deployed headquarters or other multinational facility will provide the Role 1 support.

3.23 HOST NATION MEDICAL SUPPORT

1. On some missions, it may be possible to use elements of the host or adjacent nation's military or civilian health system. This reduces the nations' requirement to deploy some medical elements. This requires early planning and coordination. The use of host nation medical support must take into account the size of the deployed force, the assessed risk, and the capabilities and capacity of the host nation.

2. For political, ethical and legal reasons, the provision/acceptance of host nation medical support is subjected to many technically specialized and highly sensitive considerations. Coordination between medical planners (including personnel experienced in medical logistics) and the host nation is essential in order to ensure an acceptable standard of medical care provided through the mission. Capabilities and acceptability of host nation facilities must be confirmed during the reconnaissance. The J9 (CIMIC) cell provides coordination and liaison that assists in making civil resources available. If one is deployed, the Joint Logistics Support Group may also assist in coordination with the host nation. AJP-4.5 *Allied Joint Doctrine for Host Nation Support* provides information on host nation support principles and planning considerations.

3.24 CONTRACTED MEDICAL SOLUTIONS

1. Early in the planning process shortfalls in medical capabilities or services may be identified. It may be possible to contract some services, e.g., strategic aeromedical evacuation, and complete hospital infrastructures.

2. If contracting is identified as a viable solution, industry must be engaged as early as possible and consideration be given to establishing framework contracting arrangements. On NATO operations the principle of collective contracting aims to meet the operational requirements through unity of effort while avoiding competition between national elements for the same finite pool of personnel and equipment. The NSPA provides guidance on the process.

3. The decision to use commercial solutions to provide medical support on specific operations remains the responsibility of the military commander. Risk will vary considerably, influenced by the operational environment, mission type, operational

readiness requirements and the capability requirements. It is for NATO and nations to assess and accept, on a case by case basis, the levels of risk associated with using contractors in support of deployed forces.

4. For small deployments with few personnel where it is not cost effective to deploy medical care, contracting is possible with High Risk Medical Insurance companies who will arrange all levels of medical care in remote locations to include aeromedical evacuation arrangements. Legal and Medical staff will provide their expertise to J8 when outsourcing is required. J8 is responsible for NATO contracting.

3.25 COMMON FUNDING

1. NATO will pay the costs of nations to deploy, sustain and operate nationally owned capabilities which are listed as theatre assets and under Operational Control to NATO. Facilities eligible for Common Funding must offer services open to all NATO nations and civilians directly employed by NATO (this does not include civilian contractors in support of deployed forces who should have their own medical care arrangements).

2. A nation opting to be Lead Nation for a common funded facility must commit to do so for one year in a Memorandum of Understanding with NATO/SHAPE and must maintain full operational capability to receive reimbursement on a fee for service basis and to recover eligible costs of personnel/equipment deployment. Whilst the common-funded MTF would provide the infrastructure, nations would be required to provide most equipment, clinical personnel and support staff to run it (plug and play concept).

3.26 CIVIL-MILITARY MEDICAL INTERFACE

1. In all operations, but particularly in Peace Support Operations, Non Combatant Evacuation Operations, and Humanitarian Assistance and Disaster Relief Operations NATO medical elements may work closely with a variety of civilian actors. This could include host nation, IOs and NGOs. Planning considerations are found in chapter 3 of AJMedP-6 *Allied Joint Civil-Military Medical Interface Doctrine* (STANAG 2563).

3.27 JOINT LOGISTICS SUPPORT GROUP (JLSG)

1. A JLSG may be deployed to plan, coordinate and execute theatre-level logistics support. The JLSG may assist medical planners by coordinating common medical logistics including the resupply of medical materiel, pharmaceuticals, blood and blood products (subject to national regulations and legal frameworks). It may also assist with arrangements for host nation support. AJP-4.6 *Allied Joint Doctrine for the Joint Logistics Support Group* (STANAG 2230) provides information on the JLSG.

2. Medical planning in support of the JLSG is conducted in a similar manner as for the Component Commands. When a JLSG HQ is deployed, it requires an appropriate level of medical representation to collaborate on joint medical issues and in the coordination and integration of the overall logistic support plan.

3.28 MEDICAL CARE FOR PERSONS DEPRIVED OF THEIR LIBERTY

1. It can be difficult to calculate the holding capacity required for persons deprived of their liberty because they may not be subject to theatre patient return policies and may not have ready access to definitive Role 4 care capabilities. During the planning process consideration should be given to determine when additional MTF holding capacities may be required. Nations may wish to cooperate to provide centralised treatment facilities for persons deprived of their liberty, although the capturing nation retains legal responsibility for the treatment of any person transferred to the custody of another nation.

2. Medical staff need to be involved in the planning and operation of detention facilities, particularly when the persons held in them may pose a risk to those guarding them from bad hygiene practices or endemic disease. The medical authorities will need to develop a preventive medicine strategy, ensure the provision of primary health care services within the facility and ensure that the guarding force has adequate medical support. Medical planners should refer to AJP-2.5 *Captured Persons, Materiel and Documents* (STANAG 2195).

3.29 MASS CASUALTY (MASCAL) PLANNING

1. A MASCAL situation is where the number, type or severity of casualties exceeds the treatment capacity and capability available. MASCAL is not an issue for the medical staff alone, but rather a major incident requiring the attention and resources of large parts of the operational HQ. Command and control of MASCAL situations "rests with the battlespace owner, both in planning and execution."[36]

2. The coordination of medical support must be undertaken in close cooperation with operations and planning staff in the main headquarters of the supported formation. Clearance of explosives, additional force protection, special equipment for the extraction of wounded/ injured personnel or extinction of fires might have to be initiated and coordinated before medical personnel can treat patients.

3. A series of suitable plans should be developed for each of the scenarios assessed as likely at the tactical level. These should then be integrated into a theatre-wide MASCAL plan. AMedP-1.10 *Medical Aspects in the Management of a Major Incident/Mass Casualty Situation* provides guidance on planning and execution of MASCAL situations. Also, AAMedP-1.1 *Aeromedical Evacuation* provides planning considerations for the use of civilian or mixed (civilian/military) assets in MASCAL situations.

SECTION 4 CASUALTY RATE ESTIMATION

3.30 GENERAL

1. Estimation of casualties is an essential but challenging element of medical planning. As with all estimates, they are based upon assumptions and the results they produce need to be treated accordingly. Military medical expertise and sound judgement will be required in interpreting casualty estimation data to determine the medical support plan. Evidence-

[36] ACO Directive (AD) 83-1 (Edition 2) *Medical Support to Operations*

based models, such as operational analysis, are increasingly available, especially in mature theatres of operation and can be used to augment the casualty estimation process.

2. Factors affecting casualty estimates include friendly and enemy populations at risk; scheme of manoeuver and phases of operations; type of operations; combat intensity; terrain; weather; enemy capabilities; enemy posture; and relative strength of the opposition, surprise and patterns of operations. In determining and assessing these factors, medical planners must work closely with J1, J2, J3 and J5 staffs.

3. At the strategic level casualty estimation determines the requirement of medical resources to a specific campaign, confirms the strategic MEDEVAC system capacity requirements, allocates hospitals to locations in theatre, and determines the requirement for specialist medical capabilities in theatre. At the operational level, the casualty estimate determines the requirement for medical capability and capacity over the period of the campaign design. This confirms the location of evacuation and forward hospitals, the capacity of the in-theatre MEDEVAC system and the demand for specific medical logistic commodities such as blood products and medical gases.

4. Casualty estimates are normally divided into two groups, battle casualties (BCs) and disease and non-battle injuries (DNBIs). The main steps in estimating are the same for both categories:

a. **Determine the Population at Risk (PAR).** The forces at risk are determined. Different elements of the force face different risks. The PAR may be taken as a whole or broken down by force element.

b. **Estimate the Rate.** The rate at which casualties will occur may be estimated on a proportional basis across the PAR expressed as a rate over time, or as the total numbers of casualties expected for particular engagements. If a proportional rate is used, this must be applied to the PAR as a whole to give total number of expected casualties.

c. **Estimate the Profile**. The casualty profile details the relative proportions of each of the different:

   i. Casualty types expected – wounded in action, CBRN, Battle Stress, DNBI.

   ii. Clinical severity – Category A, B, C.

   iii. Clinical type – neurology, eyes, burns, general (abdominal or thoracic cavity) surgery, limbs (orthopaedic).

d. **Estimate the Casualty Flow**. Casualty flow analyses the likely location, timing and type of casualties that will be generated. This should result from the wargame (see article 2.8), and assists with determining the location and opening period for key MTFs, particularly Role 2 and Role 3 units.

3.31 BATTLE CASUALTIES (BC)

1. BCs are those that occur as a direct result of combat. BCs comprise four main elements:

a. Killed in action. This is a J1 and chain of command rather than medical concern.

b. Captured and missing in action. This is a J1 and chain of command rather than medical concern.

c. Wounded in action.

d. Psychological casualties.

2. J3/J5 staffs have lead responsibility for BC estimation based on their detailed knowledge of the plan and the information and intelligence upon which it is based. As a result BC rates may be highly classified. Casualty estimates of all types have implications on force structure and should be produced early in the planning process. Detailed BC estimation may not always be possible and in such circumstances it may be appropriate for the medical staff, in concert with the J1 staff, to suggest an initial planning figure or to use generic BC rates to allow planning to begin. Such figures should be agreed with J3/5 staff and may be amended later with rates specific to the operation as planning proceeds.

3. **BC Rate**. Different BC rates may be used depending on the mission, the phase of the operation, and the respective unit. BC rates may be calculated on a proportional basis across the total number of forces in theatre and expressed as a daily rate (for example number of casualties/100 personnel/day) which may be appropriate for high intensity conflict.

4. Rates will also differ between various elements of the force, e.g., elements of sustainment and support forces serving in areas distant from active combat suffer fewer combat-related medical casualties.

5. Estimation for smaller units will be more challenging, as it is more difficult to determine reliable rates for a smaller PAR.

6. For operations with low casualty estimates like peace support operations, the estimation of casualties that might occur from individual incidents rather than from the campaign as a whole will be more appropriate than a generic rate. As an example of this "event driven" planning, medical planners may construct the medical laydown to be able to cope with particular incidents like mine incidents, road accidents or limited, local attacks, taking into account the probable amount of losses these may cause, instead of relying on statistically low baseline casualty rates.

7. Additional factors like surprise, terrain, weather and combat ratio provide medical planners with additional information. Surprise is favourable for the force which owns the initiative. Flat and uncovered terrain as well as dry weather conditions will probably support the attacking force. The more equal the combat ratio of friendly and opposing forces is, the higher the estimated casualty rates will be.

8. In a mature theatre, EpiNATO, the NATO Health Surveillance system, may provide data that will assist the medical planner during the casualty rate estimation process.

9. **BC Profile**. Different types of military operations produce different casualty profiles. A thorough threat assessment and a proper analysis of the environment together with a comparison with former campaigns provide the basis for the estimate of severity and patterns of casualties to be expected. Reviewing historical data in the NATO Trauma Registry[37], along with reviewing any modeling and analysis of additional risks such as

[37] The NATO Trauma Registry is currently under development.

those posed by CBRN agents and effects, will assist in determining potential casualty profiles for different types of operations and threats

10. **BC Flow**. Estimation of casualty flow requires a detailed appreciation of the disposition of the force, the supporting medical plan and the operational activities being conducted. Planners will estimate when and where casualties are likely to occur and where they will be evacuated and treated. Casualty flow estimation can be crucial to the success of the medical plan as it will help manage casualty regulation and potentially prevent individual medical assets being overwhelmed during an engagement.

11. As the commander's plan provides the basis for the casualty flow assessment, each of the phases and sub-phases depicted in the plan or at an earlier stage in the concept require an analysis of casualty rates related to the scheme of manoeuvre.

3.32 DISEASE AND NON BATTLE INJURY (DNBI)

1. DNBI is the baseline rate of disease and injury due to accidents. Both the incidence and the impact of DNBI are of significant operational importance due to their potential impact on the ability of a force to operate. Expressing DNBI rates in terms of number of working days lost can be a particularly effective means to highlight the effect of disease and illness.

2. Due to different environments and as a result of selection and preparation of personnel, the estimation of DNBI will produce rates that differ from rates applying for peacetime establishments. DNBI rates are drawn from empirical evidence gathered during different types of operations.

3. Estimation is the responsibility of the medical staff based on historical evidence, environmental assessment and knowledge of the occupational risks associated with military duties. In order to establish a sound DNBI estimate, the medical planner has to consider factors such as the level and nature of activity, acclimatisation, climate, weather, road infrastructure, training and living conditions of the deployed personnel. Like BC rates these rates vary during the phases of an operation.

4. Accurate DNBI estimation requires close cooperation with the J2 and J3/5 staffs.

5. The implementation of a deployment health surveillance system on NATO deployments allows the chain of command to establish a database of health surveillance information that assists medical support planning for both current and future operations. A comprehensive DNBI analysis can produce more effective preventive medicine measures, including recommended policy on immunisation, prophylaxis and personal health education. It can also be a driving factor in the size and capability of medical resources required in different scenarios.

3.33 OUTCOME OF THE CASUALTY ESTIMATE

1. The results of casualty estimates must be considered along with all the other medical estimate factors to determine MTF, MEDEVAC, and FHP requirements and their locations.

2. The results may also impact the remainder of the OPP. An estimation of a large number of casualties contributes to the assessment of the operational risk and may impact on the Commander's decision in favour of or against a course of action.

3.34 CASUALTY ESTIMATION TOOL

1. The NATO medical information and communication system (MEDICS) is under development and will include a tool for casualty estimation. Until it is made available, traditional and national tools for casualty rate estimation can be used.

3.35 CBRN CASUALTY ESTIMATES

1. Like BC estimation, CBRN casualty estimation is led by the J3/J5 operational planning staffs, guided by CBRN subject matter experts. Detailed information on CBRN casualty estimation is found in:

a. AJMedP-7 *Allied Joint Medical Doctrine for Support to CBRN Defensive Operations*. (STANAG 2596); and

b. AMedP-8 (C) *NATO Planning Guide for the Estimation of CBRN Casualties* (STANAG 2553).

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CHAPTER 4: MEDICAL PLANNING CONSIDERATIONS FOR SPECIFIC OPERATIONS

SECTION 1 TYPES OF OPERATIONS

4.1 ARTICLE 5 COLLECTIVE DEFENCE

1. An armed attack on the territory of the Allies would be covered by Article 5 of the North Atlantic Treaty. CONPLANs may be developed for different scenarios as part of advance planning.

4.2 MEDICAL SUPPORT OF NON-ARTICLE 5 CRISIS RESPONSE OPERATIONS (CRO)

1. Non-Article 5 CRO cover the entire spectrum of NATO military operations and related activities not encompassed by Article 5 Collective Defence. Non-Article 5 CRO may be conducted by NATO in any part of the world, as opposed to the specific Euro-Atlantic area defined for Article 5 operations. The various types of CRO missions are described in AJP 3.4 *Allied Joint Doctrine for Non-Article 5 Crisis Response Operations*.

2. CRO range from support operations primarily associated with civil agencies through operations in support of peace, countering irregular threat activities, to combat. In the framework of a NATO-led operation, this could include, but is not limited to, extraction operations, tasks in support of disaster relief and humanitarian operations, search and rescue or support to non-combatant evacuation operations, freedom of navigation and overflight enforcement, sanction and embargo enforcement, support to stabilization and reconstruction activities, peace enforcement, and counter-insurgency.

3. There is no automatic commitment of forces for non-Article 5 CRO, and it is likely that they will be conducted with Partner and/or other non-NATO nations. They may be conducted with other IOs such as the United Nations, European Union, African Union, and NGOs.

4. Medical support has to be tailored to the mission. AJMedP-6 *Allied Joint Civil-Military Medical Interface Doctrine* provides planning considerations including the Civil-Military medical contribution to OPP. The following types of non-Article 5 CRO will regularly require specific medical support considerations at the civil-military interface:

a. **Peace Support Operations (PSO)**.[38] PSOs may be described as operations that impartially make use of diplomatic, civil, and military means, normally in pursuit of United Nations Charter purposes and principles, to restore or maintain peace. Such operations may include conflict prevention, peacemaking, peace enforcement, peacekeeping, peacebuilding, and/or support to humanitarian assistance. In many cases during peace support operations health care will be provided to the civilian population as part of the reconstruction and stabilization effort of the mission. Medical staff at every level must primarily support the operational objectives set by the commander. However, they also must provide appropriate advice on risks and limitations of medical support to local civilian patients. Although medical assets will

[38] See AJP-3.4.1, *Allied Joint Doctrine for the Military Contribution to Peace Support* for further information.

be tasked to provide health care aimed at creating short-term effects, the implementation of a sustainable, locally provided, long-term solution should be given the highest priority.

b. **Non Combatant Evacuation Operations (NEO)**.[39] Generally, a force committed to a NEO should have the capability to provide security, reception and control, movement, and emergency medical support for the civilians and unarmed military personnel to be evacuated. Although medical support assets are not primarily designed for medical support to specific civilian patients (for example expectant mothers and children), a NEO will require the involvement of medical capabilities that are not routinely represented in the military medical forces. Consequently, a thorough assessment of potential patients must be conducted in order to define the medical capabilities required.

c. **Humanitarian Assistance (HA) Operations including Disaster Relief**.[40] The types of HA operations within the framework of Support to Civil Authorities / Military Assistance to Civil Authorities are described in detail in AJP-3.4 and related documents. The main objective of medical support to a humanitarian assistance / disaster relief operation is to improve the provision of care to the civilian population. These operations regularly require specific medical support planning. Indeed, medical forces may be the focus of the operation. In the latter case the medical contribution to the OPP will have a major impact on the operational design. HA operations are normally conducted in support of other IOs such as the United Nations Office for the Coordination of Humanitarian Affairs.

4.3 SUPPORT OF CONSEQUENCE MANAGEMENT (CM)

1. CM is the use of reactive measures to mitigate the destructive efforts of attacks, incidents or natural disasters. This includes the effects from Weapons of Mass Destruction, whether from state-actors or from acts of terrorism. Medical Consequence Management may be similar to those measures used in Disaster Relief Operations while taking into account the specialty of medical support in a CBRN environment. Medical planning considerations include medical assessment or detection of the incident, decontamination, recommendations on force protection and FHP including medical countermeasures (e.g., vaccines, therapeutics, etc.) psychological support, epidemiological surveillance and victim identification.

4.4 STABILIZATION AND RECONSTRUCTION

1. Reconstruction and development of the local infrastructure and basic community services including basic health services for the local population, and military medical support capabilities of the host nation armed forces may be a necessary precondition to achieve the mission end state. Achieving this requires engagement with a broad range of experts, civilian and military, from national governmental, IOs and NGOs. Mentoring, engagement and partnering with colleagues in the security forces medical services may be a key contribution to stabilisation operations.

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[39] See AJP-3.4.2, *Allied Joint Doctrine for Non-Combatant Evacuation Operations* for further information.
[40] See AJP-3.4.3 *Allied Joint Doctrine for the Military Contribution to Humanitarian Assistance* for further information.

2. **Training and Mentoring of Host Nation Medical Services.** Helping the host nation develop self-sustaining, culturally appropriate education and training capabilities will allow incremental building of future capability and capacity for their health sector. AJMedP-6 provides guidance and planning consideration for training or mentoring tasks.[41] These tasks are more likely in a mature Theatre, and could be part of a Sequel plan.

4.5 RECEPTION, STAGING AND ONWARD MOVEMENT (RSOM)

1. RSOM is the intra-theatre deployment phase in which units, personnel, equipment and materiel arriving in a secured JOA are transferred from a port of debarkation to their final destination on the commander's required date. Since arriving forces are not ready for employment, RSOM and Integration must take place for the forces to achieve full operational capability.[42] Medical provides care to both the deploying force and the force in place supporting the RSOM. Medical support assets must be deployed and have the appropriate level of operational capability prior to the arrival of the deploying force.

2. RSOM is a deliberately planned activity and medical planners must be engaged with the other RSOM planners. ATP-3.13.1 *Reception, Staging and Onward Movement (RSOM) Procedures* and AJP-4.6 *Allied Joint Doctrine for the Joint Logistics Support Group* provides information on RSOM and planning considerations.

4.6 CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR (CBRN)

1. The employment or threat of CBRN weapons and other toxic materials poses serious challenges to 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 (especially air and water poisons), biological pathogens, and radioactive material. The deadly, destructive, and disruptive effects of these weapons and materials merit continuous consideration by Commanders and staff.

2. Medical planning for operations in CBRN environments is complex and requires CBRN medical SME advice. CBRN medical planning factors are described in AJMedP-7. The following are some key medical planning considerations for CBRN Defence operations:

a. CBRN incidents have the potential to cause large numbers of incapacitated casualties who need intensive care. In the first few hours after a CBRN incident, MTFs may be overloaded with casualties who require lengthy hospitalisation. Hence, MTFs should be near main transportation routes, and have access to supplementary transport facilities.

b. Wearing individual protective equipment reduces individual medical treatment efficiency at a time when manpower requirements increase. Casualty decontamination requires manpower and may reduce the number of personnel

[41] Also see AJP-3.4.5 *Allied Joint Doctrine for the Military Contribution to Stabilization and Reconstruction* for further information.
[42] See ATP-3.13.1 *Reception, Staging and Onward Movement (RSOM) Procedures* for more information.

available to treat casualties. Heat stress will require more frequent rest breaks, further reducing care capability.

c. Establishing and maintaining a facility with collective protection and continuously monitoring the air inside the shelter for contaminants calls for additional personnel. These procedures also decrease the capability to treat casualties efficiently and effectively.

d. Sustainment of medical assets forced to continue to operate within CBRN hazard areas will demand additional personnel.

e. MTFs may be severely affected by adversary targeting with CBRN and conventional weapons or from indirect effects from nearby attacks depending on the area of effect.

SECTION 2 – MEDICAL SUPPORT TO ENDURING MILITARY CAMPAIGNS

4.7 GENERAL

1. Over the period of an operation a force will change, adjusting balance, configuration and posture, dictated by the evolving operational environment and conditions. The force may be substantially different at the end of an operation from its initial deployment. Medical support for the operation is likely to evolve, changes ranging from minor amendments to fundamental changes.

2. While medical support to operations often has to rely on MTFs which are rapidly deployable, these MTFs become increasingly stable and possibly more clinically capable during enduring operations. Depending on the operational environment, they may become located within hardened infrastructure in order to protect staff and patients from both the weather and the threat and attack from indirect fire. This may include purpose built static superstructures, developed in close cooperation with the Force Engineers. Additionally, the increasing clinical capability of medical facilities is likely to have an impact on the mobility of these assets. Medical planners must determine the appropriate balance between capability and protection against mobility of a MTF.

4.8 BATTLE RHYTHM

1. The Battle Rhythm is a disciplined routine of meetings and briefings within 24-hour cycles and used to maintain an optimum tempo for all levels of command, location and time zone. It is the essential mechanism for maximising concurrent activity and aiding synchronisation.

2. The medical staff must have the manpower that ensures participation in all relevant meetings. During these meetings the medical staff must bring to attention anything with the potential of having a significant impact on the conduct of the operation.

3. The MEDAD to the JTF Commander, as part of the Theatre staff, will ensure the coordination of joint medical issues, across all components throughout the theatre C2 structure by using regular communication with the MEDDIRs of each level of the operational command structure.

4.9 COMBINED MEDICAL CONFERENCE

1. The Combined Medical Conference is the Joint Force MEDDIR's instrument for coordination and synchronisation of all aspects of medical support in the Theatre. It is the forum for information exchange between the Joint Medical staff, MEDDIRs of components and formations and Senior Medical Officers of the nations. During the conference the MEDDIR aims to coordinate and to synchronize medical support on all levels of command and at the interface between multinational and national medical support. The Joint Force Command's other functional areas will have a representative at the Combined Medical Conference, ensuring the integration of medical considerations into the overarching staff work. Delegates of host nation, Civil Agencies and Organisations can be an essential part of the conference which is also the forum for exchange and cooperation at the military-civilian interface.

SECTION 3 SPECIAL OPERATIONS MEDICAL PLANNING

4.10 MEDICAL PLANNING GUIDELINES FOR SPECIAL OPERATIONS

1. NATO Special Operations Forces (SOF) often operate in areas outside of the JOA and outside the range or capabilities of AE platforms. SOF missions are characterized by the deployment of small independently operating units. These operations may require a high degree of independence from other deployed forces, limiting the options for medical support. Therefore, SOF should possess and maintain medical skills to address SOF specific mission sets and to cover prolonged field care.[43]

2. Integration of medical planners during all phases of the mission planning cycle and during deployment (with operational mission understanding) is imperative. Medical support to SOF must be nested with medical planning at the joint force medical staff level. Provision of medical support beyond SOF capabilities depends on the thoroughness of advanced planning so that the conventional medical support structure umbrella is extended to cover the limited organic capability or to meet requirements for additional medical assets.

3. A SOF operational plan is best when it maximizes the six principles of SOF; Surprise, Speed, Security, Purpose, Repetition and Simplicity. Medical support must be flexible, precise, agile and speedy like the forces they support. Medical planners must create plans that meet the most serious threats without diminishing the principles of SOF operations. Commanders must be presented, by trained SOF medical advisors, the risks and benefits of various medical support packages to determine where risk will be assumed in SOF operations.

4. SOF may be exposed to health risks not normally seen in the other areas of the operational theatre. This may include in the capacity of consequence management such as in response to a CBRN incident. SOF medical plans must consider these types of missions and address equipment, treatment and evacuation in these toxic environments.

[43] See AJP-3.5 *Allied Joint Doctrine for Special Operations* for further information

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CHAPTER 5 MARITIME MEDICAL PLANNING GUIDANCE

SECTION 1 – GENERAL

5.1 INTRODUCTION

1. This chapter, written under the authority of the NATO Medical Naval Expert Panel, is designed to guide medical planners how best to overcome the unique challenges of the maritime environment and to identify the appropriate level of medical capability for naval operations.

2. Maritime operations differ from land and air warfare in several ways.The most significant factor is the constant movement of ships in the area of operations (AO). The maritime MTFs afloat are also moving, both absolutely and relative to other platforms that may require their support. Maritime areas of operation are often very large with assets spread through them, separated by great distances. These pose significant time and space evacuation challenges when a ship may be days away from shore. Therefore, medical timelines are also subject to frequent change.

5.2 PURPOSE

1. The purpose of this chapter is to provide amplifying guidance to medical planners and Commanders when considering the medical capabilities needed in modern maritime operations. It highlights specific maritime factors to be considered when planning for operations and exercises, and presents planners and Commanders with a simple, risk-based tool for identifying the maritime medical capability requirement for a variety of generic operational scenarios.

2. Recent experience has shown that the challenges and constraints of the maritime and ship environment, together with a scarcity of national maritime medical resources, mean that there is a requirement for a more detailed description of what degree of medical capability is needed in a given maritime scenario. The utility of Roles 1 to 3 is valid in the maritime setting but this chapter provides more granularity in precisely what clinical capabilities are required in any given scenario, and effectively sub-divides the Roles of care into Levels specifically designed to meet the special maritime challenges based upon actual capabilities of existing NATO maritime MTFs. Essentially Role 1 encompasses Levels 1 and 2, Role 2 equates to Levels 3 and 4 and Role 3 is equivalent to Level 5. Comprehensive definitions appear later in the chapter and Section 5 details the minimum requirements for each Level.

3. The maritime medical planning model moves away from the traditional casualty rate-based planning tools towards a more generic capability-driven approach based on relative risk. It is intended that this approach may be used in the early stages of planning to identify the broad qualitative capability requirement. However, there remains a need to conduct a detailed estimate process to further refine the output of the tool and provide quantitative planning guidance. Analysis of casualty rates (as provided by N3 staff) remains an important factor for consideration in this estimate. Section 6 of this chapter provides generic casualty estimation rates for large, blue water naval operations.

SECTION 2 – NATURE OF NAVAL OPERATIONS

5.3 GENERAL

1. Current and future maritime operations are unlikely to see the major deep water sea battles of the past involving opposing fleets. Instead engagements involving small combined task forces and individual platforms are more probable. Likely missions will focus on power projection from sea to land, maritime security, counter-insurgency, counter-narcotics, counter-piracy, humanitarian operations and maritime support of Military Assistance to Stabilization and Development operations.

2. The medical support policies and principles as defined in MC 326-3 are common to all environments. However, special factors must be taken into consideration when planning operational medical support for the maritime environment. This section identifies specific considerations for the maritime medical planner.

5.4 MEDICAL FACTORS

1. **Operational Complexity**. The maritime milieu creates unique challenges to the medical planner. The asymmetric environment where dispersed surface, subsurface, aviation and marine infantry assets may be operating concurrently across a large AO often precludes mutual support and drives a requirement for the increased lay down of medical resources (or acceptance of an increased level of medical risk by Commanders).

2. Additional complications arise from the nature of a ship based environment. The weather at sea often changes rapidly, placing severe constraints on the operation of helicopters and ships and thus restricting the movement of patients between platforms. It is very likely that weather severe enough to preclude flying will also prevent the use of boats to transfer personnel. Also, maritime platforms pitch and roll in accordance with the sea state and this can sometimes limit the performing of medical procedures.

2. **Casualty Numbers**. Ships often contain relatively large numbers of personnel concentrated in small spaces. If successfully targeted this makes it more likely that casualties will occur in peaks. Within an affected platform the number of casualties is likely to overwhelm the organic medical assets on board leading to a mass casualty situation being declared. Management will require a robust triage system and timely evacuation to Role 2 or 3 facilities capable of surging to deal with a large volume of casualties in a short period of time.

3. **Casualty Types**. Due to the likelihood of blast and subsequent fire in a confined space, one can expect potentially larger number of severe burns, smoke inhalation casualties and blast injuries. This may dictate the composition of specialist medical teams and equipment at Roles 2 and 3. In the event of significant ship loss or damage, secondary casualties may be received as a result of cold exposure and near-drowning. The close quarter living conditions aboard maritime platforms may also facilitate the spread of communicable diseases more easily at sea and lead to increased DNBI rates and greater difficulty in controlling it.

4. **Casualty Extraction**. Once casualties are sustained, their management is complicated by extraction and evacuation difficulties compounded by long evacuation routes that conspire to hinder adherence to acceptable treatment timelines. Removal of casualties from within damaged ships will be difficult and time-consuming and may require

specialist extraction equipment and training but may be mitigated by ensuring availability of large numbers of first aid-trained personnel in the ships company to assist the organic medical staff.

5. **Medical Evacuation**.

a. Sea. Evacuation by sea from a beachhead, inter-ship transfer or rearward evacuation from Roles 2 and 3 may all be undertaken by utilizing afloat assets, when circumstances permit. However, this may be complicated by sea state, weather conditions, distance and access difficulties to and from high-sided afloat units. In addition, the delivery of all but the most basic in-transit medical care on small boats may be impossible.

b. Air. The preferred option for evacuation of casualties will almost always be by rotary wing assets since they are the fastest, most efficient and safest means of evacuation. To assure high quality and timely medical care support helicopters should ideally be dedicated in the MEDEVAC role. In the face of limited dedicated assets this may not be possible and a system of opportunistic tasking may be required. Furthermore, flying operations may be compromised by sea-state, weather conditions, type of aircraft, and unavailability/unsuitability of flight decks. Ships may be widely dispersed within an AO and operating long distances from land. Endurance and operating parameters of different aircraft must be understood to inform decision making and may dictate the lay-down of medical assets. Commanders should be made aware of the 'reach' of medical capability and possible constraints this may have on operational tasking. Where forces are required to operate outside this area of medical coverage Commanders must be advised of the increased risk of not being able to meet clinical timelines.

6. **Continuity of Care**. In the normal continuum of treatment, casualties should always move to a higher level of care. This may not always be possible in the maritime environment, where availability of platforms may necessitate an alternative approach. For example, it may be necessary to move casualties from a damaged platform to an undamaged one that may have an equivalent or lower Role MTF, whilst awaiting the arrival of a Role 2 or 3 medical asset. Restricted holding capacity and limited windows of opportunity will require constant pro-active management by patient regulating staff to maximize any opportunity for early rearward evacuation from Role 2 and 3 MTFs.

7. **Logistics**. As well as compromising acceptable clinical timelines, delays in transferring casualties will result in increased consumption of medical supplies. The availability of helicopters may impact adversely on medical logistic replenishment necessitating increased holdings of medical supplies. Resupply in the maritime environment creates particular challenges with regard to critical cold chain items such as specialist blood products and items with short lifespans.

8. Care should be taken to disperse high value medical assets throughout the task force to prevent a critical operational deficiency developing as the result of the loss of a single platform. Such a loss at a key stage in any operation could be catastrophic and this risks needs to be mitigated by the medical planner.

9. **Status of Maritime MTFs**. Maritime platforms are not often dedicated exclusively to the medical role. This may create a tension between medical and military roles for the platform commander and requires careful prioritization and re-evaluation during the various stages of the operation. Whilst their inherent mobility allows platforms hosting MTFs to be

repositioned quickly to meet clinical requirements, it also allows them to move off-station rapidly for tactical or force protection reasons and this can disrupt established MEDEVAC pathways. Therefore it is important that medical staff engage with Commanders to highlight the matter.

10. In the maritime environment, only a very small number of dedicated hospital ships are deployed under the provisions of the Red Cross / Crescent and operate in accordance with the Geneva Conventions.

11. **Amphibious and Littoral Operations**. These operations combine some of the most testing aspects of the land and maritime environments and present significant challenges. An opposed beach landing conducted against a well prepared defending force is likely to lead to high numbers of casualties in a short time frame. At this stage of the operation there will be total reliance on afloat medical support and casualties will be competing for transportation at a time that the Force Commander will be focused on pushing troops and equipment ashore. It may be some time before a beachhead can be made secure enough to land MTFs other than Role 1 facilities.

12. **Humanitarian Operations**. Humanitarian operations may involve large numbers of casualties presenting predominantly with DNBI problems. This will require a different balance of expertise and equipment within any medical support package and may demand increased numbers of primary care, pediatric, obstetric and environmental health personnel. Triage teams may need to go ashore.

SECTION 3 – PRINCIPLES OF MARITIME MEDICAL PLANNING

5.5 GENERAL

1. Early engagement with J3/N3 staffs is required to ensure that the medical plan evolves alongside the emerging CONOPS and that Commanders are made aware of medical issues that may act as constraints on their plan. At an early stage in the planning process prior to any deployment, it is necessary to scope the likely medical risks and associated requirements, together with all possible contingencies that may arise. This will help identify medical capabilities that must be embarked prior to deployment and those that may follow on or be provided elsewhere (e.g. Alliance partners, host nation, etc). The process will also identify the order that medical force elements must disembark to go ashore in order to ensure optimal support to amphibious operations.

5.6 MISSION TYPE

1. The type of mission will determine the kind of casualties, which in turn will determine the type of equipment and expertise of the medical staff required. The mission type will vary from war fighting missions where there is a significant risk of major platform damage or loss resulting in large numbers of trauma casualties, to single-platform peace time deployments where DNBIs are the principal medical workload. The likelihood of casualties requiring Role 2 or 3 treatment is the key factor which determines the level of capabilities required and the types of platform which will need to be deployed. Where Role 2 medical elements are deployed (in order to ensure compliance with clinical timelines) due cognizance must be given to the limited numbers of beds available and the associated constraints on holding time compared to a Role 3 facility.

2. Even in peacetime, certain types of mission such as non-compliant counter piracy operations may carry a significant risk of combat casualties. This may dictate a requirement for access to Role 2 or Role 3 capability for a relatively small PAR. Other peacetime tasks such as fixed wing aircraft operations and amphibious landing exercises are potentially dangerous and may require extra medical provision.

5.7 CONTINGENCY OPERATIONS

1. For any maritime deployment being planned, possible contingent tasks must be considered and the resultant medical capabilities needed to support them. In the event of a changed mission, maritime force elements may not have the ability to reconfigure or embark extra medical personnel and supplies, so would be reliant on existing deployed capabilities. The lack of options to enhance medical force elements after deployment will affect decisions when it comes to determining the medical support package. Absence of Role 2 or 3 access (and hence inability to meet clinical timelines) may constrain a Commander's freedom of action when reacting to contingency operations that could result in combat casualties. Conduct of such operations without adequate medical cover may expose the operational Commander to significant risk that cannot be mitigated by other means.

5.8 POPULATION AT RISK (PAR)

1. It is the relative risk of injury and not simply the number of personnel at risk which determines the qualitative level of medical support required (i.e., Role 1, 2 or 3) although the PAR may influence the size and capacity of these facilities. In the maritime context the size of these capabilities may also be physically constrained by limitations in platform space. Conversely (and in the face of finite resources) it may in some operational circumstances be necessary for the Commander to accept risk against doctrinal treatment timelines where very small populations or single platforms are involved, e.g., submarines.

5.9 AREA OF OPERATIONS

1. The AO (and any likely contingency operations) will help determine the level of medical care required. For coastal operations in Europe or North America there is generally timely access to well-found civilian hospitals which are often accessible by air meaning that land-based MTFs (Roles 2-4) are readily available within clinical timelines. Lack of afloat Role 2 or 3 MTFs does not therefore increase risk and maritime platforms will only require integral Role 1 capability embarked. However, in other areas of the world, access to host nation hospitals may not be possible. Where they do exist the necessary agreements for use may not be in place or the quality of healthcare provision may be deemed unacceptable. Under these circumstances, any deployed force will need to be medically self-sufficient.

2. Different regions of the world will present different environmental and health threats which may have a major effect on the numbers and types of DNBI casualties and the medical capabilities required. A maritime task force may transit many different regions enroute to its final AO thereby increasing potential exposure to health hazards. Accurate and up to date information on all relevant countries should be obtained prior to deployment

as part of the medical intelligence process. As well as influencing the medical plan this process will identify important force health protection measures that must be implemented both prior to deployment and on arrival in the AO. In some cases these force health protection measures may place significant constraints on the military Commander's actions within the AO.

5.10 MEDICAL INTELLIGENCE

1. The standard information such as details of environmental and industrial hazards, communicable diseases, capabilities of local healthcare systems, must be enhanced by the inclusion of maritime specific data requirements such as the willingness to accept maritime casualties, recompression chamber (facilities and any local search and rescue, and ambulance capabilities that could assist in evacuation from ship to shore.

5.11 CASUALTY EVACUATION

1. Compliance with doctrinal clinical timelines for evacuation to Role 2 and Role 3 will be dependent on the availability of suitable assets to move a casualty as well as the theatre patient return policy. In most maritime situations the optimum solution is to move casualties by air using helicopters although shore-based search and rescue assets may be available as an alternative. Whatever the mode of casualty transfer medical planners should ensure that any medical force package includes the necessary medical expertise and equipment to ensure adequate care of patients during transit.

5.12 TYPES OF PLATFORMS

1. Although almost all afloat platforms contain an integral Role 1 medical capability this may vary from a single medical assistant to a more capable unit of a physician and several additional supporting staff. Role 2 requires more space and as such can normally only be embarked on a limited number of platforms. Suitable ships must not only have the space to accommodate the Role 2 surgical team but importantly must have easy and quick access from the flight deck to the medical facilities. Such platforms may be 'fitted for but not with' Role 2 meaning that the equipment is held on board at a state of readiness (normally by the Role 1 staff) but that the specialist personnel required will only be embarked when needed. This means if Role 2 needs to be considered (even as a contingency) that there must be a capable and suitably equipped platform assigned to the deployment. Specialist Role 2 personnel must be brought to the necessary level of readiness to respond within the operational timeframe.

2. Maritime Role 3 facilities place higher demands on their host platform and may necessitate considerable adaptation to incorporate the medical facility and accommodate the large numbers of staff required to staff the facility. When deployed as a Role 3 facility this will normally become the primary role of the platform.

5.13 RISK ESTIMATION

1. Early in the development of any plan medical planners should draw together all relevant information in order to conduct a risk-based evaluation of key factors. Utilizing the

risk matrix below a broad assessment of the medical capability required within the deploying force may be made. This will be fine-tuned as the planning process develops and, in conjunction with other operational planning staff, any constraints and limitations are identified. If sufficient medical capability is not available or the medical plan cannot meet acceptable doctrinal clinical timelines, then this risk must be highlighted to the operational Commander. Whilst it will be the Commander's decision whether or not to accept this risk it is the responsibility of the medical planners to ensure that he has been made fully aware of the implications of such risk.

5.14 COMMAND AND CONTROL

1. The complexity of the maritime environment and the need to inter-operate with Land and Air medical assets will require robust medical C2 arrangements. Advising the Commander on how the ship must operate if it is to meet medical clinical treatment timelines is a fundamental responsibility of medical staff. It should be noted that junior clinic staff (particularly on Role 1 MTFs) may be required to advise their CO but may lack any experience of medical planning. To mitigate this risk it is essential that any medical force package includes additional experienced medical planning staff embedded within the command chain in order to advise and coordinate. The challenges of casualty movement in the maritime environment coupled with the limited ability of afloat MTFs to hold casualties require a proactive policy to ensure that casualties are moved rearwards in the evacuation chain (with appropriate in-transit care) at every available opportunity. Patient regulating is therefore an important medical C2 function requiring a flexible and creative approach.

SECTION 4 – RISK-BASED MEDICAL ASSET PLANNING MODEL

5.15 INTRODUCTION

1. This planning model differs from the traditional casualty rate-based planning tools by moving towards a more generic capability-driven approach based on relative risk. It is intended that this approach may be used in the early stages of planning to identify broad qualitative capability requirement. However, there will remain a need to conduct a detailed estimate process to further refine the output of the tool and provide quantitative planning guidance. Wherever possible, the medical planner should use operational analysis based on casualty data from modern operations and exercises that bear the most relevance to the scenario being planned for. In this way initial planning assumptions may be refined for a greater degree of confidence.

5.16 USING THE ASSET PLANNING MATRIX

1. The NATO maritime medical planning matrix provides guidelines that enable commanders to ensure that an appropriate level of medical support is available for any mission. The tool works by deriving an overall risk score based on three factors: the operation to be undertaken; the relative size of the formation; and the region in which it is to operate. Once scores have been derived for these component risks the 'Asset Level Matrix' may be entered to derive an overall risk score that will indicate the type of medical force elements required to conduct the mission. It should be stressed that this tool is not didactic but offers guidance. Risk weighting scores are inherently subjective and the

resulting asset level must be tempered with intelligent interpretation by experienced medical planners for best results.

2. Table 1 determines the size of the formation which is loosely related to the PAR. Within these formations a distinction is made between units operating in home waters and NATO areas and those operating out of area where host nation support cannot be relied upon, does not exist or is outside acceptable clinical treatment timelines. Smaller units embedded within a task group (or task force) do not require separate medical assets, so long as MEDEVAC and treatment does not exceed recommended medical timelines. Determining the nature of the formation within the table will provide a numerical score between 1 and 4.

UNITS & AREA OF OPERATION	**Score**
Single ship - Coastal steaming NATO Area (NATO A)	1
Single ship - Out of area sailing or trans-continental sailing (OA)	2
Task unit of 2 or more ships - NATO A	1
Task unit of 2 or more ships - OA	2
Task Group of 4 ships and at least one major ship (Frigate, LPD and above) - NATO A	2
Task Group of 4 ships and at least one major ship (Frigate, LPD and above) - OA	3
Task Force – the largest formation. May consist of more than one Task Group - NATO A	3
Task Force – the largest formation. May consist of more than one Task Group - OA	4

Table 1. Unit and Area of Operation

3. Having determined a ‘score’ for the formation size and AO the planner must now determine the nature of the maritime activity to be undertaken. Table 2 lists common activities each of which has been stratified by risk to give it a score between 1 and 4. The list is not comprehensive. It is to be used as a guide in determining how risk for a specific operation correlates to medical requirements. Specialist operations (e.g. submarine, SOF, CBRNE and diving operations) will require a detailed estimate to be conducted from the outset and have deliberately been excluded from the list of activity-related risk factors due to the wide spectrum of such tasks and the associated planning complexity. Where multiple risk factors apply the planner should always use the highest scoring activity that is to be undertaken.

MARITIME ACTIVITY RISK CATEGORIES	
ROUTINE OPERATIONS (DEPLOYMENTS / TRANSITS / EXERCISES)	**SCORE**
Transit-Open Waters	**1**
Commissioning Trials	**1**
Transit- via Choke points	**1**
ASW exercise	**1**
AAW exercise	**1**

Mine Clearance / Explosive Ordnance Disposal	**1**
Amphibious exercise	**2**
NEO (permissive environment)	**1**
Maritime interdiction or maritime strike exercise	**1**
Electronic Warfare exercise	**1**
Boarding exercise	**1**
Rescue	**1**
Humanitarian / Disaster Relief	**1**
Carrier Strike exercise	**2**
LOW INTENSITY OPERATIONS	
Boarding - compliant	**1**
Boarding - non compliant	**2**
Boarding - opposed	**3**
NEO (non-permissive)	**2**
Non opposed amphibious landing	**2**
Escort	**1**
Littoral surveillance/intelligence gathering	**1**
Maritime interdiction operations	**2**
Blockade	**1**
Mine clearance/ Explosive Ordnance Disposal	**2**
HIGH INTENSITY OPERATIONS (WARFIGHTING)	
Littoral surveillance/intelligence gathering	**2**
Maritime interdiction operations	**3**
Maritime Strike (non-air)	**2**
Mine clearance/ Explosive Ordnance Disposal	**3**
Electronic Warfare	**3**
Anti-Submarine Warfare	**3**
Ant-Air Warfare	**3**
Mine Warfare	**3**
Convoying	**3**
Opposed amphibious landing	**4**
NEO-opposed	**4**
Maritime Strike (Air)	**3**
Sea-based support of Joint Operations	**4**

Table 2. Maritime Activity Risk Categories

4. Having derived scores for the maritime activity to be undertaken and the size of formation and the area of operation, the two scored values are multiplied to determine the overall Asset Level score as shown in Table 3. The key to this score is shown below. Where the overall score is at the bottom of the range within an asset level (e.g. 4) this may allow the planner to accept a lower level of medical capability. However, where the overall score is at the upper end of an asset level range (e.g. 6) this may indicate a requirement for a greater level of medical capability. These decisions will be further refined by the subsequent detailed estimate.

NATO MARITIME MEDICAL ASSET PLANNING MATRIX					
MARITIME ACTIVITY SCORE	4	4	8	12	16
	3	3	6	9	12
	2	2	4	6	8
	1	1	2	3	4
		1	2	3	4
	UNIT SIZE & AREA OF OPERATIONS SCORE				

Table 3. Medical Asset Planning Matrix

5. The Level requirements are defined below. Greater detail is provided in Section 5:

a. **Role 1 - Level 1 (Score 1).** Nationally mandated minimum medical requirements for that platform to provide primary care, triage, first aid, pre-hospital emergency care, evacuation. This will encompass minimum International Maritime Organization (IMO) standards and comply with relevant STANAGS.

b. **Role 1 - Level 2 (Score 2-3).** Same as Level 1 but would normally include addition of a ship's doctor.

c. **Role 2 - Level 3 (Score 4-6).** Same as level 2 but with access to specialist doctor-led resuscitation and damage control surgery within clinical timelines. If embarked it might include one surgical team and one operating table, basic laboratory and imaging capability, limited intensive care and a small holding capacity. This is the maritime equivalent to Role 2 Basic.

d. **Role 2 - Level 4 (Score 8-12).** Same as level 3 but with access to primary surgery within clinical timelines. If embarked it might typically include up to two operating tables, two surgical teams, four intensive care beds, diagnostic capacity including x-ray, basic lab, blood-bank, pharmacy, sterilization capacity, dentistry, a moderate holding capacity for nursed patients and access to specialist medevac capability. This is the maritime equivalent to Role 2 Enhanced.

e. **Role 3 - Level 5 (Score 16).** Same as level 4 but with access to specialist surgery within clinical timelines. It is mission tailored but typically might include up to four operating tables, four surgical teams, eight intensive care beds, diagnostic capacity including Computerized Tomography (CT) scanner, oxygen production capacity, PECC, dedicated MEDEVAC capability, and a larger holding capacity for nursed patients. This is the maritime equivalent to Role 3.

SECTION 5 - MEDICAL CARE LEVELS IN MARITIME OPERATIONS

5.17 GENERAL

1. Due to the unique environmental factors (such as moving platforms), long logistic and supply lines, limited evacuation possibilities, medical support to maritime operations are often organized differently than land-based medical support.[44] While keeping the Role of Medical Care nomenclature, Maritime sub-divides some of the Roles into Levels as described in the following paragraphs.

2. In principle each higher level is capable of incorporating the elements of lower levels.

5.18 ROLE 1 - LEVEL 1

1. Level 1 is the nationally mandated minimum medical requirements for that platform to provide primary care, triage, first aid, pre-hospital emergency care, evacuation. This will encompass minimum IMO standards and comply with relevant STANAGS.

2. All MTFs should be able to exchange information with medical personnel within a task force and with their home country. This should include communication of vital signs, the key history and main findings in ‘everyday English’ to enable a diagnosis. This must be complemented by basic medical record keeping (e.g. a transport journal or triage board).

3. The hull should have an area designated for medical purposes.

4. Sustainability.: Sustain routine medical level 1 treatment in line with the ship’s sustainability.

5. Primary healthcare and clinical investigation. The personnel should be able to provide limited medical treatment, under the guidance of an authorised healthcare practitioner if required. To enable this they should be able to take a history and conduct a basic examination when guided.

6. Secondary Healthcare and Hospitalization. It should be possible to provide limited physical and psychological care, though not necessarily by authorised healthcare professionals. The provider should be able to recognise changes in condition of the patient (e.g. level of consciousness, fever, nutrition, fluid intake/output). There should be an ability to isolate patients.

7. Emergency Healthcare. Able to provide basic first aid to patients until evacuation is available.

8. Evacuation. The unit must be able to prepare a patient for evacuation and be able to request evacuations. If it is clinically and operationally appropriate, they should be prepared to perform an evacuation over a short distance to another platform with their own resources.

9. The designated medical personnel should be able to assist the executive in the medical aspects of management of the dead.

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[44] ALP 4-1 describes the logistic and medical organization for maritime operations.

5.19 ROLE 1 - LEVEL 2

1. Level 2 is similar to Level 1 but normally includes the addition of a ship's doctor. This will be able to provide a wider range of diagnoses with greater confidence and accuracy as well as treating common medical conditions with an increased range of treatment options. This will be accompanied by an increased capability in terms of an increased nursing care provision and medical sustainability.

2. The MTF will have ability to communicate their patients' medical status in English, including signs and symptoms, findings and treatment possibilities. This will be enhanced by more advanced record keeping through specific medical documentation.

3. The hull should have an area dedicated for medical purposes.

4. Medical support capability will be able to hold patients, who are not time critical, within the theatre patient return policy.

5. Primary healthcare and clinical investigation. The personnel should be able to make an independent medical assessment and initiate treatment as necessary. This will include taking a detailed history and examination whilst being able to exclude serious conditions. They will be able to treat common primary care conditions and retain the person (independently or under supervision). They will be able to provide basic monitoring and, if possible, basic laboratory functions (including basic blood examinations and urinalysis).

6. Secondary Healthcare and Hospitalization. It should be possible to provide nursing care by an authorised healthcare professional, possibly within a sickbay. There shall be an ability to isolate a patient.

7. Emergency Healthcare. The MTF shall be able to provide triage in MASCAL situations. It shall also be able to allow more advanced airway access, advanced access for fluid resuscitation (Intravenous or Intraosseous), oxygen, preparation for evacuation and non-surgical hemorrhage control.

8. With the advanced medical capabilities at this level it should be possible to diagnose and/or treat the following: anaphylaxis, cardiac arrest, sepsis and shock, convulsions, pneumothorax, myocardial infarction, pulmonary embolism, burns, acute abdomen, hypo/hyperthermia, psychiatric emergencies, diving emergencies, CBRN effects. As part of the above treatment processes, it is anticipated the following procedures could be undertaken: cricothyroidotomy, use of a chest seal and insertion of a chest drain, catheterization (including suprapubic), pre-hospital treatment of burns and fracture immobilization.

9. Evacuation. The unit shall be able to provide in-transit care by a healthcare professional if necessary.

10. It is anticipated that the unit should have access to enhanced diagnostic capabilities as well as basic patient monitoring equipment (e.g. Propaq-type monitor).

5.20 ROLE 2 - LEVEL 3

1. Level 3 includes the capabilities of Level 2 plus access to specialist doctor-led resuscitation and damage control surgery within clinical timelines. If embarked it might include one surgical team and one operating table, basic laboratory and imaging capability, limited intensive care and a small holding capacity.

2. Level three is the lowest level where surgery is provided. The minimum level of surgery provided is damage control surgery.

3. Personnel: One surgical team sufficient to provide damage control surgery. This should include one surgeon, one anesthesia provider and two operating theatre staff. There should also be medical staff to fulfill the nursing, laboratory and imaging capabilities. Health professionals should also be available to provide MEDEVAC within the littoral, though this may compromise the capability of the MTF. A dental capability may be included in the MTF.

4. The hull shall have an area designated for use as a surgical area.

5. It will be able to hold post-operative patients within the theatre patient return policy.

6. Primary healthcare and clinical investigation. The basic laboratory capability should be able to provide simple blood measures including: cross-match, hemoglobin, electrolytes and basic transfusion facilities. Basic imaging should include x-ray and ultrasound capabilities.

7. Secondary Healthcare and Hospitalisation. It should be possible to provide a dedicated medical ward with specialist nursing care and the provision of intensive care if required. The MTF shall be able to hold a ventilated patient for up to 6 hours after the provision of damage control surgery.

8. Evacuation. The MTF should be able to provide for the in-transit care of a ventilated patient and the platform should have a helicopter landing pad sufficient for such helicopters as are used to move such ventilated patients.

9. It is anticipated that the MTF should have access to blood products (in accordance with STANAG 2408) and sterilization facilities if practicable.

5.21 ROLE 2 - LEVEL 4

1. Level 4 includes the capabilities of Level 3 plus primary surgery within clinical timelines. If embarked it will typically include up to two operating tables, two surgical teams, four intensive care beds, diagnostic capacity including x-ray, basic lab, blood-bank, pharmacy, sterilization capacity, dentistry, a moderate holding capacity for nursed patients and access to specialist MEDEVAC capability.

2. There will be a medical staff element capable of providing theatre level MEDEVAC and regulating functions for all patients in conjunction with the force component commanders.

3. Personnel: Sufficient health professionals to provide MEDEVAC within theatre, without compromising the MTF capabilities.

4. The hull shall have areas dedicated for diagnostic, ward care and surgical purposes.

5. It shall be able to provide medical support to hold one ventilated patient for up to 48 hours and able to regenerate surgical capability without compromising the mission.

6. Primary healthcare and clinical investigation. At this level it may include CT scanning capabilities and a more advanced laboratory, including the ability to support microbiology and a robust transfusion service.

7. Secondary Healthcare and Hospitalisation. The MTF shall be able to provide two intensive care beds. There shall be one dedicated operating theatre and it should be able to support primary surgery.

8. Evacuation. The MTF shall be able to provide for the in-transit care of a ventilated patient without compromising medical capabilities at the MTF.

9. The MTF might be able to provide oxygen for other ships.

5.22 ROLE 3 - LEVEL 5

1. Level 5 includes the capabilities of Level 4 plus access to specialist surgery within clinical timelines. A Level 5 is mission tailored but typically includes up to four operating tables, four surgical teams, eight intensive care beds, diagnostic capacity including CT scanner, oxygen production capacity, PECC, dedicated medevac capability and a larger holding capacity for nursed patients.

2. There will be a dedicated medical staff element capable of providing MEDEVAC and regulating functions for all patients in conjunction with the force component commander and the Maritime PECC.

3. The MTF will have specific medical and surgical specialists in order to meet the requirement to cope with a complete spectrum of patients and diagnosis expected in the operation.

4. The hull shall be a designated MTF platform designed to receive and hold casualties without compromising the supported mission, and could be dedicated hospital ships.

5. Medical support capability will be able to hold patients for 7 to 10 days or until evacuation to an airport of debarkation can be achieved.

6. Primary healthcare and clinical investigation. It should have CT scanning capabilities and a more advanced laboratory, including the ability to support microbiology and a robust transfusion service.

7. Secondary Healthcare and Hospitalisation. It should be possible to provide at least two dedicated operating theatres and be able to hold and ventilate several post-operative patients for 7 to 10 days. This should at least be 4 intensive care beds allowing a responsive expansion to the theatre return policy. This MTF shall be able to provide definitive surgery including specialist surgical interventions as necessary within the timeframe of 7 to 10 days. It shall also provide non-surgical specialist care.

8. Evacuation. The MTF shall include designated MEDEVAC teams.

9. Levels 4 and 5 are task force capabilities and, thus, not necessarily in one hull. Whereas Level 3 might be considered a one shot capability, level 4 should be able to maintain its capability and remain within the Task Force in the presence of a flow of casualties within its capacity.

5.23 NON-LEVEL CONSIDERATIONS

1. There are several considerations regarding MTFs that need to be borne in mind during the planning process but are not key in defining the Level of the MTF. These include

provision of hyperbaric treatment, submarine sunk, pharmacy, medical logistics, environmental health, preventive medicine and dental treatment.

2. The theatre patient return policy defines the holding capability and capacity of the MTFs and has a direct impact on them from Level 2 onwards.

3. The need for hyperbaric chamber is also related to the risk of different diving operations. Different NATO navies have different risk tolerance when it comes to diving, and this needs to be taken into account.

4. The movement of patients in a maritime force (ship to ship transfer) drives the requirements to identify a body exercising the PECC function for the maritime forces. This could occur on different levels depending upon the nature of the operations and the support from shore.

5. Helicopter availability is essential to the medical evacuations of casualties. Formal procedures must be in place at all levels to enable medical timelines to be met.

Capability level checklist						
Organisation and medical staff		Level 1	Level 2	Level 3	Level 4	Level 5
Med C4I (Command, Control, Communications, Computers and Information)						
	Able to exchange information with medical personnel in a task force and home country	x	x	x	x	x
	Communicate vital signs, main findings and history in “everyday English” to enable a diagnosis	x	x	x	x	x
	Basic medical record keeping (transport journal/triage board)	x	x	x	x	x
	Able to access TG or TF MEDPLAN	x	x	x	x	x
	Able to provide joining report, MEDSITREPS and evacuation signals	x	x	x	x	x
	Communicate medical status (signs and symptoms, findings, and treatment possibilities relevant for level of care)		x	x	x	x
	Advanced record keeping (medical documentation)		x	x	x	x
	Medical staff element providing theatre level medical evacuation and regulating functions for all patients in conjunction with force commanders				x	x
	Dedicated medical staff element providing unit level medical evacuation and regulating functions for all patients in conjunction with force commanders				(x)	x
	Dedicated PECC			(x)	(x)	(x)
Personnel						
	Shell have personnel equal to IMO minimum training level	x	x	x	x	x

	Dedicated (main task) personnel with advanced first aid/medical training	x	x	x	x	x
	Authorized independent health practitioner (may be a medical officer)		x	x	x	x
	Able to provide first aid training		x	x	x	x
	Medical staff to fulfil the nursing/lab/image capability			x	x	x
	Health professionals to provide medevac within the littorals (may compromise your MTF)			x	x	x
	Health professionals to provide medevac within theatre, without compromising own MTF capabilities				x	x
	Dentist			(x)	(x)	x
	Surgical team of minimum one surgeon, one anaesthesia provider and two operating theatre staff, to provide DCS.			x	x	x
	Several surgical teams and different medical and surgical specialist				(x)	x
Platform characteristics						
	Designated areas available for medical purposes	x	x	x	x	x
	Dedicated areas for medical purposes		x	x	x	x
	Designated areas available for surgical purposes			x	x	x
	Dedicated areas for diagnostic and surgical purposes, and ward care				x	x
	Designated MTF platform					x
Sustainability						
	Medical support capability in line with ship sustainability	x	x	x	x	x
	Provide medical support to hold patients who are not time critical within theatre patient return policy		x	x	x	x
	Provide medical support to hold postop patients within theatre patient return policy			x	x	x
	Provide medical support to hold at least one ventilated patients for up to 48 hours and able to regenerate surgical capability without compromising the mission				x	x
	Able to hold patients for 7 to 10 days, or until evacuation to APOD can be provided					x

Primary health care and clinical investigation		Level 1	Level 2	Level 3	Level 4	Level 5
Clinical investigation						
	Basic lab (Blood, urine)		(x)	x	x	x

	Laboratory (transfusion lab facilities, X-match, Haemoglobin, electrolytes)			x	x	x
	Imaging (X-ray, ultrasound)			x	x	x
	CT				(x)	(x)
	Advanced lab (Microbiology, MTP)				(x)	x
Primary healthcare						
	Provide limited medical treatment under guidance of an authorized medical practitioner (if required)	x	x	x	x	x
	Able to take a history	x	x	x	x	x
	Able to make basic exam when guided	x	x	x	x	x
	Able to make independent medical assessment and initiate treatment as necessary		x	x	x	x
	Able to take a detailed history and examination, and able to exclude serious conditions		x	x	x	x
	Able to treat common conditions in primary care, and retains person or ship on task (independently or under supervision)		x	x	x	x
	Basic monitoring		x	x	x	x

Hospitalization and secondary health care		Level 1	Level 2	Level 3	Level 4	Level 5
	Isolation					
	general/HD/ICU bed					
Hospitalisation						
	Limited physical and psychological care (Not necessarily by “authorised healthcare professional”)	x				
	Ability to recognise change in condition of patient (Consciousness, fever, nutrition, drinking/diuresis)	x				
	Sick bay		(x)	x	x	x
	Nursing care by “ authorised healthcare professional”		x	x	x	x
	Medical Ward			(x)	x	x
	Specialised nursing care			x	x	x
	Ability to provide intensive care			x	x	x
	2 ICU beds				x	x
	Able to provide at least 4 ICU beds, and responsive expansion to the theatre patient return policy					x
	Able to hold 1 post op ventilated patient for 6 hrs			x	x	x
	Able to hold 1 ventilated patient for 48 hrs				x	x

	Able to hold several ventilated patients for 7-10 days					x
	Isolation of at least one patient	(x)	x	x	x	x
Secondary Healthcare						
	Damage control surgery			x	x	x
	Primary surgery				(x)	x
	Definitive surgery including specialist surgical interventions					x
	Provision of non-surgical specialist care					x
	At least one operating theatres				x	
	At least two operating theatres					x

Emergency medicine		Level 1	Level 2	Level 3	Level 4	Level 5
First aid						
	Provide basic first aid (CABC, BLS, burns, hypothermia, fracture immobilisation) on patients until medevac arrives	x	x	x	x	x
MASCAL						
	Able to do triage in MASCAL situations		x	x	x	x
	The provision of advanced airway access, advanced access for fluid resuscitation, O_2, non-surgical haemorrhage control, moving prep.		x	x	x	x
	Able to give initiate and start treatment of acute conditions like anaphylaxis, cardiac arrest, sepsis and shock, fitting, chest pain to myocardial infarction, pneumothorax, pulmonary embolism, acute abdomen, burns		x	x	x	x
	Hypo/hyperthermia, hyperbaric, psychiatric, CBRN		x	x	x	x
	Able to provide cricothyroidotomy, chest seal and chest drain, tracheotomy, suprapubic catheter, suturing, burns pre hospital treatment, fracture immobilization		x	x	x	x

Evacuation		Level 1	Level 2	Level 3	Level 4	Level 5
	Prepare patient for evacuation	x	x	x	x	x
	Able to request evacuations and able to advice in best way of moving patient	x	x	x	x	x
	Able to perform evacuation over short distance to other platform with own resources if clinical appropriate	x	x	x	x	x

	Able to provide in transit care by health professionals if necessary		x	x	x	x
	Able to provide in transit care of ventilated patient			x	x	x
	Platform with a helicopter pad			x	x	x
	Designated medevac teams					x

Minimum medical assets		Level 1	Level 2	Level 3	Level 4	Level 5
	Blood products (in accordance with STANAG)			(x)	x	x
	Sterilization			(x)	x	x
	Might include oxygen production capacity or major storage capacity in order to provide other ships with o2.				(x)	x
	ECG 12 lead		(x)	x	x	x
	Basic patient monitoring (Propaq type)		(x)	x	x	x
	Assist executive in managing dead	x	x	x	x	x

Non level issues that need to be defined in planning process						
	All higher levels shall be capable of performing all procedures and meet all requirements of subordinate levels					
	Hyperbaric treatment					
	Medical logistics and sustainability					
	Pharmacy					
	Environmental Health			(x)	(x)	(x)
	Able to provide preventive medicine (hygiene, vaccines, fitness)		x	x	x	x
	Dental					
	Theatre patient return policy defines holding capability and capacity on each level to start from level 2		x	x	x	x

SECTION 6 – ADDITIONAL PLANNING GUIDANCE FOR NAVY ON NAVY CONFLICTS

5.24 GENERAL

1. This section provides additional guidance on capacities needed for level 3 and above, in case of a conflict with a risk for navy on navy warfare against a competent and capable navy.

5.25 MEDICAL SUPPORT PRECEPTS

1. The medical support precepts are important for maritime forces in particular and some must be given added emphasis:

a. Triage Criteria. The concentration of manpower within the relatively small volume of a ship's hull means that casualties occur in peaks. Task Force medical and evacuation assets overall (either afloat or ashore) should be sufficient to meet the requirement to treat the numbers generated as casualties.

b. Levels of Medical Care. Medical care is provided on a progressive basis ranging from first aid to definitive specialized care as the patient is evacuated rearward. In the maritime environment, the traditionally recognized levels of medical care may either be bypassed or grouped in the same unit.

c. Evacuation. Transfer of casualties between a damaged unit and supporting medical/surgical facilities either afloat of ashore requires helicopter assets, since they are the fastest, most efficient and safest means of evacuation. Further, in a ship, the organic medical personnel stand a better chance of becoming casualties themselves and the timely transfer of additional medical personnel to the damaged ship can only be done by air. Afloat surgical facilities are ineffective without helicopter assets for the movement of casualties between the damaged ship and the facility.

d. Correlation of Medical Support with the Forces at Risk. An independent task force deploying beyond the evacuation range of the Advanced Logistics Support Site and Forward Logistics Site must be provided with a higher allotment of medical support relative to its size, since it cannot rely on medical assistance from adjoining or supporting forces and will have to hold more patients.

5.26 PLANNING PARAMETERS

1. Detailed maritime medical planning parameters can be used by national and NATO Commanders to develop generic medical support requirements for task forces for defense planning.

2. NATO maritime forces have always been multinational in nature. In crisis and war, the Commander needs to have operational control over the medical resources within his force. Detailed medical planning and appropriate peacetime medical representation on the staff at the relevant HQ's are prerequisites for the delegation of medical responsibilities to a NATO commander.

3. Mass casualty situations must be planned for and rehearsed at every level.

4. Medical units must be able to communicate with each other and their supporting logistic infrastructure.

5.27 DETAILED PLANNING PARAMETERS FOR MARITIME MEDICAL SUPPORT

1. The quantitative requirement for the provision of medical resources is expressed as the capability to evacuate and treat a proportion of the maritime force strength. This is expresses as DNBI in peace, crisis and war, and as battle casualties (KCMIA). In every evacuation, the casualty's condition will be continually assessed to determine whether a change in priority is warranted.

2. The categories of **personnel casualties** are battle casualties (KCMIA; WIA or battle stress cases) and non-battle casualties (DNBI).

3. **The maritime generic planning figure** for KCMIA +WIA is defined as light intensity sustained by a surface action group per combat day, with the level of combat sustained for two combat day and at least 10 non-combat days between actions. The KCMIA and WIA figure is 4.8% of the PAR afloat. This includes 2.9% KCMIA and 1.9% PAR as WIA. These figures apply to amphibious forces afloat.

4. The WIA can be divided into the 60% of WIA in Triage groups 1 and 2 (T1, T2) and the 40% of the WIA Triage group 3 who will be treated at level 1 or 2. T1/T2 patients will require early hospital treatment at level 3 or above – none will be returned to duty and all will require further evacuation. 20% of the T3 patients will be returned to duty and 80% will need delayed evacuation to level 3 or above.

5. Battle stress cases are an additional 11% of the WIA of whom 80% will be returned to duty and 20% will require evacuation.

6. The total battle casualties (TBC – 5% of PAR) are calculated as:

   a. KCMIA 2.9% of PAR per combat day.

   b. WIA 1.9% of PAR per combat day.

   c. BS 0.2% of PAR per combat day.

7. DNBI accounts for another 0.13 % of admissions (10% of total DNBI) and 10% of those admitted will require evacuation and admission to a higher level. This number is small enough to not adversely affect the treatment and holding of battle casualties.

8. **Evacuation requirements** depend on another set of figures:

   a. 60% of WIA will require immediate evac to level 3 or above (T1/T2) with a delayed evacuation of 32% of WIA (T3) on an opportune lift basis. This equates to 18/1000 per day.

   b. 20% of BS and 10% of admitted DNBI will require evacuation to level 3 or above on an opportune lift basis.

   c. 92% of WIA, 4% of BS and 2% of admitted DNBI will require strategic evacuation.

   d. 8% of admitted DNBI and 16% of BS will return to duty from level 3 or above at some point following any combat day, on an opportune transport basis.

9. Helicopter assets required to move patients is scenario dependent, based on the type of helicopter available and the distance (flight time).

10. **Surgical Requirements** for treating various types of injuries are suggested at one hour for T1 (very seriously injured) patients, two hours for T2 (seriously injured) patients and 35 minutes for T3 (minimally injured) patients. These are average figures and include anesthetic induction and recovery times.

11. Surgical teams will be on shift for 12 hours per day per surgeon. Additional medical staff are needed to manage post-operative care.

12. The case ratio (T1/T2/T3) is defined at 3:3:4 for every group of 10 patients. Surgical demand can then be estimated based on the above parameters (ie – for a group of 10 patients, 3 patients will be T1, requiring 1 hour of surgical time each for 3 hours total; 3 patients will be T2, requiring 2 hours of surgical time each for 6 hours; 4 patients will be T3, requiring 35 minutes of surgical time each for 4.33 hours: Total surgical time is 11.33 hours (demand).

13. Throughput can be increased by 20% with two surgical tables per surgeon.

14. The **In-theatre Bed Requirement** is determined by the rate casualties are received, the number of days of contiguous combat and by the post-operative retention of casualties (partially dependent on the Theater Patient Return Policy). The generic parameters provide for a casualty rate of 5% for two consecutive days and only minimal casualties on the subsequent 10 days, while the post-op retention for battle casualties is 7 days (on average). These parameters determine an in theater bed requirement of 18 beds per 1000 PAR on day one, and 35 beds per 1000 PAR on day two.

15. **Blood Requirements** at level 2 and 3 are 4 units RBC per admitted WIA. 100% should be Group “O”, Rh Positive or negative. With more females in front line positions, the emphasis should shift to “O negative.” At Level 4 and 5, 4 units per WIA admitted still holds, but distribution should be 50% type “O”, 40% type A and 10% type B (Rh positive OR negative for all). Level 4 and 5 also will need 0.8 units of FFP per WIA admitted and 0.04 units of platelets.

CHAPTER 6 MEDICAL EXERCISE PLANNING, EVALUATION, CERTIFICATION AND LESSONS LEARNED

SECTION 1 MEDICAL EXERCISE PLANNING

6.1 GENERAL

1. Exercises are carried out for training and evaluating an exercising force. Medical exercises aim to improve the medical support provided to a deployed force and seek to enhance medical cooperation and interoperability among the different services and nations that may be present. Evaluation and certification of medical capabilities prior to deployment will be conducted during such medical exercises and can be of immense value in identifying areas where additional training is required prior to deployment or areas where further monitoring is required once the force is deployed.

2. Medical support is complex as well as time critical and procedures differ considerably between nations. In order to maximize interoperability deployed forces must be familiar with the tactics, techniques and procedures that will be used during the mission. These must be practiced during pre-deployment exercises.

3. Bi-Strategic Commanders (Bi-SC) Directive 075-003 *Collective Training and Exercise Directive* provides direction pertaining to the NATO military collective training and exercise process. It describes the NATO Exercise Planning Process used to plan, execute and assess NATO collective training and military exercises. It is applicable whether medical is the primary focus of an exercise or, as is more commonly the case, is part of a larger exercise.

6.2 EXERCISE PLANNING PROCESS

1. Although differences between operation and exercise planning are apparent, exercise planning is to be conducted as close as possible to operational planning to engender familiarity with the process. Medical exercise planning needs to cater for both exercise casualty management play and real life medical coverage. Both of these elements must be carefully planned to ensure medical exercise aims and objectives are satisfied without prejudice or compromise to the safety of participants. To the extent possible, medical elements being exercised should not be the same elements that provide real-life support.

2. Following the principle of *Train as you intend to fight*, medical support should be an integral part of all exercises. Medical planners must be fully engaged with other exercise planners in order to ensure that medical training objectives are incorporated into the overall exercise objectives.

3. Medical scenarios on exercises must be designed to challenge more than the medical forces. They must exercise the interrelationships between medical elements and the supported force to include command, control, and communications, force protection, sustainment, etc.

4. The following resources may assist the exercise planners on specific topics:

   a. Individual and Collective Training. AMedP-8.3 *Training Requirements for Health Care Personnel in International Missions* (STANAG 2249)

   b. Peace Support Operations. ATrainP-1 *Training and Education for Peace Support Operations* (STANAG 6023).

   c. CBRN. AMedP-7.3 *Training of Medical Personnel for Chemical, Biological, Radiological, and Nuclear (CBRN) Defence* (STANAG 2954).

   d. Urban Operations. ATrainP-3 *Education and Training for Urban Operations* (STANAG 2593).

   e. Mass Casualty Situations. AMedP-1.10 *Medical Aspects in the Management of a Major Incident/Mass Casualty Situation* (STANAG 2879).

4. The Exercise Plan Medical Support Annex will be similar to the Medical Support Annex attached to an Operational Plan, but will include the Exercise Control Organisation.

6.3 MEDICAL EXERCISE CONTROL ORGANISATION

1. The main medical elements of the exercise control organisation will be:

   a. **Directing Staff (DISTAFF)**. The DISTAFF controls the exercise following the Main Events List and Main Incident List, which determine all exercise activities. Medical DISTAFF are linked to the Casualty Organisation (CASORG), through which Casualty Simulation (CASSIM) is facilitated.

   b. **CASORG**. Will have its own HQ responsible for coordinating the activities of the CASORG Cells. CASORG is made up of the following cells:

      i. Reception: To document and register role players.

      ii. CASSIM: To make up and brief role players.

      iii. Insertion: To escort role players from CASSIM to the incident location.

      iv. Transport: To provide the correct amount and types of vehicles required to transport role players to the incident location.

      v. Logistic support: To provide the day to day administrative requirements of the CASORG and role players (feeding, accommodation, etc).

      vi. Umpires: To observe, evaluate and report on the performance of the player medical units in dealing with the role players.

   c. **Medical Higher Control** is the theatre level medical organisation that simulates the Medical Coordination Cell and Patient Evacuation Coordination Cell.

   d. **Medical Lower Control** represents the lower level medical organisation (medical units) that are not physically taking part in the exercise.

SECTION 2 EVALUATION AND CERTIFICATION

6.4 GENERAL

1. Medical support to NATO forces must meet standards acceptable to all participating nations. International medical cooperation poses challenges due to differences between nations' medical standards and due to legal constraints.

6.5 THE MULTINATIONAL MEDICAL EVALUATION PROCEDURE

1. The responsibility for the health of the forces is shared between the NATO Commander and the nations. Due to financial, technical and medical specialist shortages across the NATO nations, multinational support options have become a reality. Many nations prefer to contribute modules or individuals to a multinational medical capability. In most cases the lead nation will integrate these modules into a multinational medical support system. The evaluation procedure must confirm the quality of care delivered by an integrated medical support system. It also will reveal shortfalls to provide the Commander with a risk assessment concerning medical support to the force. An evaluation prior to deployment is highly recommended and will be performed by a multinational medical evaluation team.

2. STANAG 2560 *Evaluation of NATO Medical Treatment Facilities* provides the structure for evaluation of multinational medical capabilities. This STANAG incorporates AMedP-1.6 *Medical Evaluation Manual*, the AMedP-1.7 *Capability Matrix* and the AMedP-1.8 *Skills Matrix.* It provides a reference for common standards, procedures and terminology.

6.6 CERTIFICATION

1. Each multinational medical unit must be certified prior to deployment. The aim of certification is the official recognition that a staff, unit or force component meets defined standards and criteria, and can perform the assigned mission. These standards and criteria must be clear to all the interested parties - lead nation, NATO Commander and contributing nations. In order to provide an objective picture, the NATO Commander will order an evaluation to make sure that the pre-set standards are met. After the process of certification, all the involved parties will be able to assess the medical effectiveness of the medical unit. Certification will be the responsibility of either the lead JFC or ACO. It is conducted by a Multinational Evaluation Team in accordance with STANAG 2560.

SECTION 3 LESSONS LEARNED

6.7 GENERAL

1. The purpose of a Lessons Learned process is to learn efficiently from experience and to provide validated justifications for amending the existing way of doing things. It also is used to improve quality and performance or share best practices during all phases of

exercises and operations.[45] For the Medical Support discipline, specific enhancements have been implemented throughout the medical observation collection process with the goal of increasing the capture, prioritizing, tasking and sharing of observations, both procedural and clinical. Importantly, these enhancements are structured to support and strengthen the NATO Lessons Learned process and are presented in the *NATO Medical Lessons Learned Field Manual*[46].

2. During operations or exercises, the Medical Advisor or Director is responsible for ensuring that medical elements capture and process observations. Those observations should be generated during all phases of the event, processed locally for action and forwarded to the NATO Centre of Excellence for Military Medicine as outlined in the Medical Lessons Learned Field Manual. In addition to observations generated during NATO events, NATO can and should learn from the experience of member nations. Nations are encourage to share their observations and best practices through the processes outlined within the Field Manual under “Multinational Sharing Group.”

3. Observations should be submitted using the NATO Observation, Discussion, Conclusion, Recommendation (ODCR) format. The NATO standard form or the simplified Medical ODCR form can be used for submissions. The following sub-paragraphs provide guidance on the information required when submitting observations:

a. **Observation**. Describe what you noticed. Give a short description of what happened and the results of dealing with it. This statement can be positive (i.e. something that worked well) or negative (i.e. something happened that should not have or something did not happen that should have). Try to limit each observation to a single problem or issue. Answer the question: WHAT HAPPENED?

b. **Discussion**. Explain why it happend. This answers the 'who, what, where, when, why and how' questions about the observation. Talk about the actions taken to work around a problem. If a problem could not be solved explain why. Answer the question: WHY DID IT HAPPEN?

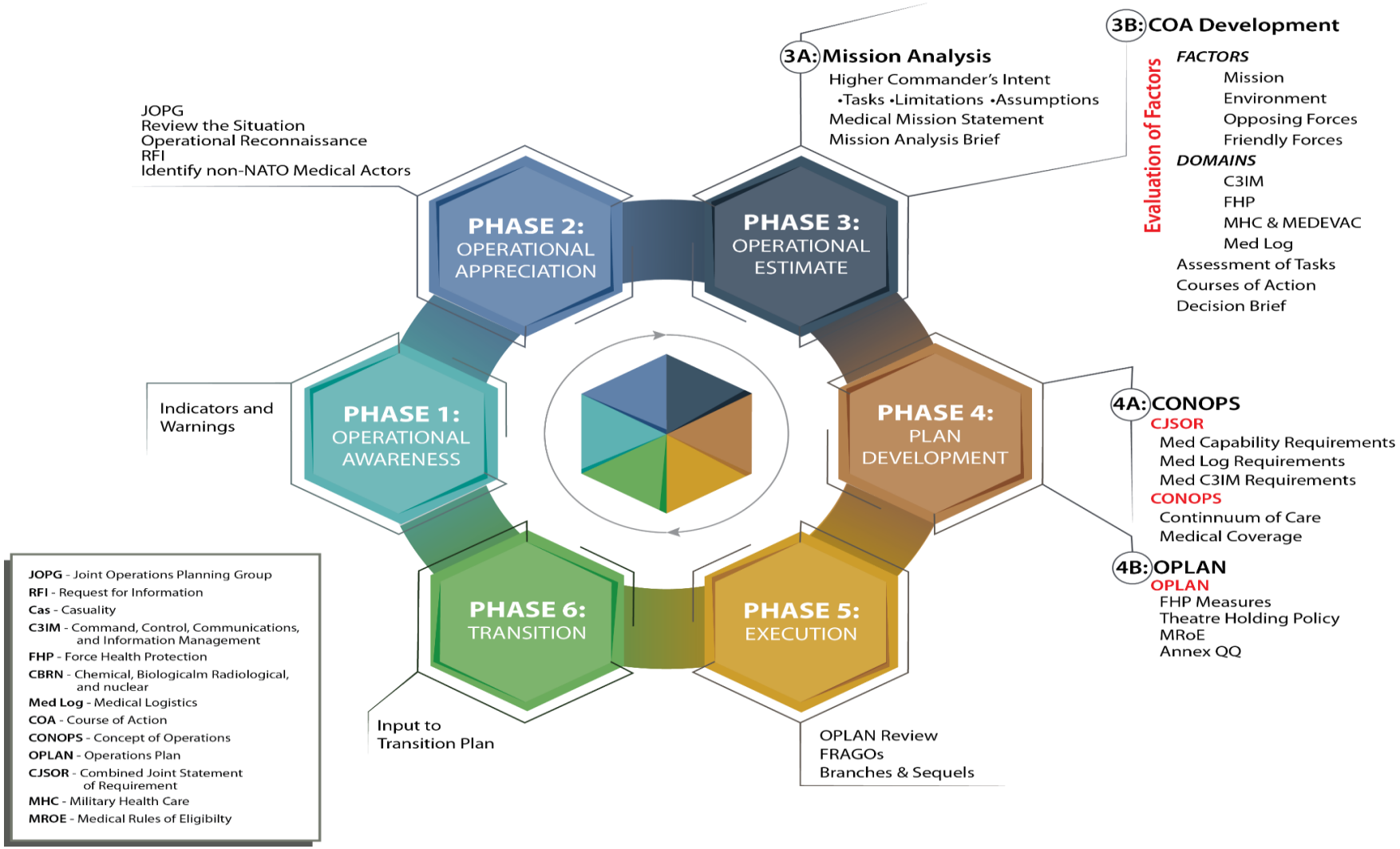
c. **Conclusion**. Provide a short summary. This is a statement that completes the observation and discussion and it should be a concise summary of the situation observed. Answer the question: WHY IT MATTERS?

d. **Recommendation**. Provide a recommendation to solve the problem or how to repeat the success. Talk about what and how; WHAT should be done and HOW to do it. Often includes new or modified publications, procedures, training or new equipment.

4. When planning for a new operation or exercise, medical staff should review the Lessons Learned Database for any relevant observations, lessons identified or lessons learned. The NATO Centre of Excellence for Military Medicine can assist.

[45] AJP-3 (B) *Allied Joint Doctrine for the Conduct of Operations*
[46] Available through the NATO Centre of Excellence for Military Medicine

ANNEX A – MEDICAL PLANNING CYCLE



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ANNEX B – MEDICAL ESTIMATE TEMPLATE

Copy Number ____ of _____
Title of Headquarters (HQ):
Location of HQ:

Date Time:

References:

STEP 1 – MISSION ANALYSIS (WHAT MUST I DO?)

1. Assumptions: Assumptions must be realistic and their validity confirmed by higher authority, either medical or operational. Assumptions are modified when specific planning guidance and factual data become available. Wherever possible, requests for information should be initiated to turn each assumption into a fact.

a.

b.

2. Superior Commander's Intent (Two levels up): (What is my role in the superior commander's plan?)

FACTOR	DEDUCTION	CONCLUSION
Intent:		

3. Higher Commander's Mission and Concept of Operations (CONOPS) (One level up):

FACTOR	DEDUCTION	CONCLUSION
Mission:		
Intent:		
Scheme of manoeuvre:		
Main effort:		
End state:		

4. Assigned tasks:

FACTOR	DEDUCTION	CONCLUSION

5. Implied tasks:

FACTOR	DEDUCTION	CONCLUSION

6. Limitations. (1) Constraints - Events that restrict freedom of action and are normally stated as a requirement to do something; (2) Restraints - Prohibitions on actions and normally stated as something you cannot do:

FACTOR	DEDUCTION	CONCLUSION
Constraints (must do)		
Restraints (cannot do)		

7. Changes to the situation. Has the situation evolved since you received your orders that may result in one of the following: (1) Mission confirmed and Plan still valid; (2) Mission confirmed but Plan requires modification; and (3) Mission no longer valid:

FACTOR	DEDUCTION	CONCLUSION

8. Mission Statement:

Medical Mission Statement
who – what – when – where – why

9. Points for clarification. List points discovered in your Mission Analysis that you want to clarify with Higher Commander or Staff (operational or medical):

a.

b.

STEP 2 - EVALUATION OF FACTORS (HOW DOES THE SITUATION AFFECT MY MISSION?) Some factors listed below are further developed in Chapters 3 and 5. Some items may be addressed under two or more factors.

10. Environment. The assessment of the environment should be conducted in collaboration with intelligence, MEDINT, and FHP staffs:

a. Terrain:

FACTOR	DEDUCTION	CONCLUSION
Topography (Land mass, coastline, mountains, jungle,		

desert, likelihood of natural disasters (earthquakes, volcanoes, etc.))		
Urbanization		
Infrastructure		
Roads/routes • suitability for evacuation • assigned routes • restricted routes		
Airports		
Seaports		
Rivers		

b. Meteorology (How will weather and light affect the plan?):

FACTOR	DEDUCTION	CONCLUSION
Climate		
Hot/cold		
Wet/dry		
Light conditions		
Wind		

c. Health risks (use CBRNE3T). MEDINT should provide a Health Hazard Assessment. In a mature theatre FHP should provide health surveillance data:

FACTOR	DEDUCTION	CONCLUSION
Chemical		
Biological		
Radiological		
Nuclear		
Explosive		
Environmental		
Endemic		
Traumatic		

Living and sanitary conditions		
Water supply		

d. Human terrain. This is especially important in humanitarian assistance and disaster relief operations:

FACTOR	DEDUCTION	CONCLUSION
Civilian population • Numbers • Locations • Religion • Cultural • Economic • Social • Gender • Age • Languages • Criminal organizations • Attitude to the mission		
Refugees/displaced persons		
Host nation resources • Medical • Labour • Translators • Real estate • Power • Water		
Host nation laws		
Other Stakeholders • IO/NGO		

11. Enemy/Threat:

FACTOR	DEDUCTION	CONCLUSION
Intention		
Organization and equipment		
Strength and disposition		
Tactics		
Weapons effects		
Cyber threat		
Health status		
Medical Services		
Compliance with Law of Armed Conflict		
CBRN		

12. Friendly Forces/Own Forces:

FACTOR	DEDUCTION	CONCLUSION
Organization and equipment		
Coalition Forces • Supported • Supporting • Flanking • Concept of operations • Phases • Type of operation • Disposition/locations/ boundaries		
Health/immunization status		
Special medical requirements • Flight Medicine • Dive medicine		
Status of training		

• Medical • Non-medical		
NATO civilians		
Other Government Departments and Agencies		
IOs/NGOs		

Coalition Medical (from nations or IO)
• Theatre medical plan
• Medical C2
• Medical Advisor/Medical Director
• MTF
  • Locations
  • Capability
  • Capacity
• MEDEVAC
• Multinational
• Liaison officers		

Civil-Military Medical Interface		
Other supported elements • Prisoners of War and detainees • Refugees and displaced persons		
Medical Rules of Eligibility		
Communications and information systems • Coalition		

• Interface between Alliance and national systems • Secure and non-secure • Voice and electronic • Capacity for telemedicine • Information exchange requirements		
Medical software programmes • National • Coalition		

13. Casualty estimates:

FACTOR	DEDUCTION	CONCLUSION
Population at Risk		
Casualty Rate Estimation • Battle casualties • Disease and non-battle injuries • Casualty rate • Casualty profile • Casualty flow		
CBRN casualties		

14. Time and Space. The location of, and distances between, friendly elements is a key determinant in locating MTFs and the type and quantity of MEDEVAC assets required. The geographic disposition of the friendly forces must be assessed for time and space in order to try and meet the optimal clinical timelines:

FACTOR	DEDUCTION	CONCLUSION
Deployment timelines		
Duration of mission		
Phases of the operation		

Location of, and distances between, friendly elements		
10-1-2(+2) treatment timeline		
Location of, and distances between, known MTFs: • Coalition • Host nation • Third nation		
Speed of ground ambulances		
Reaction time for Forward AE		
Flight radius for Forward AE platforms		
Tactical and Strategic AE response timelines		
Scheduled sustainment flights/convoys		

15. Medical Logistics:

FACTOR	DEDUCTION	CONCLUSION
Materiel • Equipment • Supplies • Property exchange		
Pharmaceuticals		
Blood and blood products		
Special handling requirements		
Legal/regulatory requirements		
Geneva Conventions (protection of materiel)		
Clinical waste		

Multinational medical supply sources		
Imposed days of supply		
Equipment repair		
General Logistics • Water • Food • Petroleum, oils, lubricants • General maintenance • General materiel storage and handling • General services • RSOM • Mortuary affairs • Movements • Transport • Infrastructure • Contracting support • General host nation support		

16. Engineering:

FACTOR	DEDUCTION	CONCLUSION
Infrastructure • Contracted • Multinational		
Site preparation		
Power		

17. Other factors:

FACTOR	DEDUCTION	CONCLUSION

18. Assessment of Tasks.

a. This is a summary of all the medical tasks required to support the mission. This will determine the medical resources required by phase of the operation. The tasks should be grouped by the functional areas of: Command and Control, Communications and Information Management; Force Health Protection; Treatment; Medical Evacuation; and Medical Logistics.

b. In addition to identifying tasks and resource requirements, the deduction column may also provide: coordinating instructions, such as phasing or sequencing; and planning guidance, including constraints or restraints, to subordinate commands. It may also identify the requirements for requests for information.

c. The deduction may identify risks and mitigation strategies. Major issues must be raised to the Commander.

TASK	RESOURCES REQUIRED	CONCLUSION

STEP 3 – COURSE OF ACTION DEVELOPMENT (WHAT ARE MY OPTIONS FOR A SOLUTION?)

19. At the operational or formation level options are developed on how to medically support each of the Commander's COAs. Each option/COA should address the Commander's intent and scheme of manoeuvre by phase to include:

a. Evacuation and treatment of patients from point of injury/illness to definitive care.

b. Resource requirements for MTFs and MEDEVAC.

c. Preventive medicine.

d. Medical logistics.

e. Medical C2.

f. Advantages and disadvantages.

g. Identification of risk with mitigation strategy.

20. It is not always necessary to develop multiple options to support each of the Commander's COAs. There may only be one way to medically support the COA.

STEP 4 - COMMANDER'S DECISION

21. The Commander will decide on which COA will be developed into a CONOPS. If more than one option for medical support was developed for the COA, the Commander, based on advice from the MEDAD will determine which option is to be developed.

STEP 5 - DEVELOP MEDICAL CONCEPT OF SUPPORT

22. Once the Commander selects a COA the relevant medical support option is developed into a concept of medical support as part of the Commander's concept of operations. This will subsequently be further refined into the medical support plan. See annex D.

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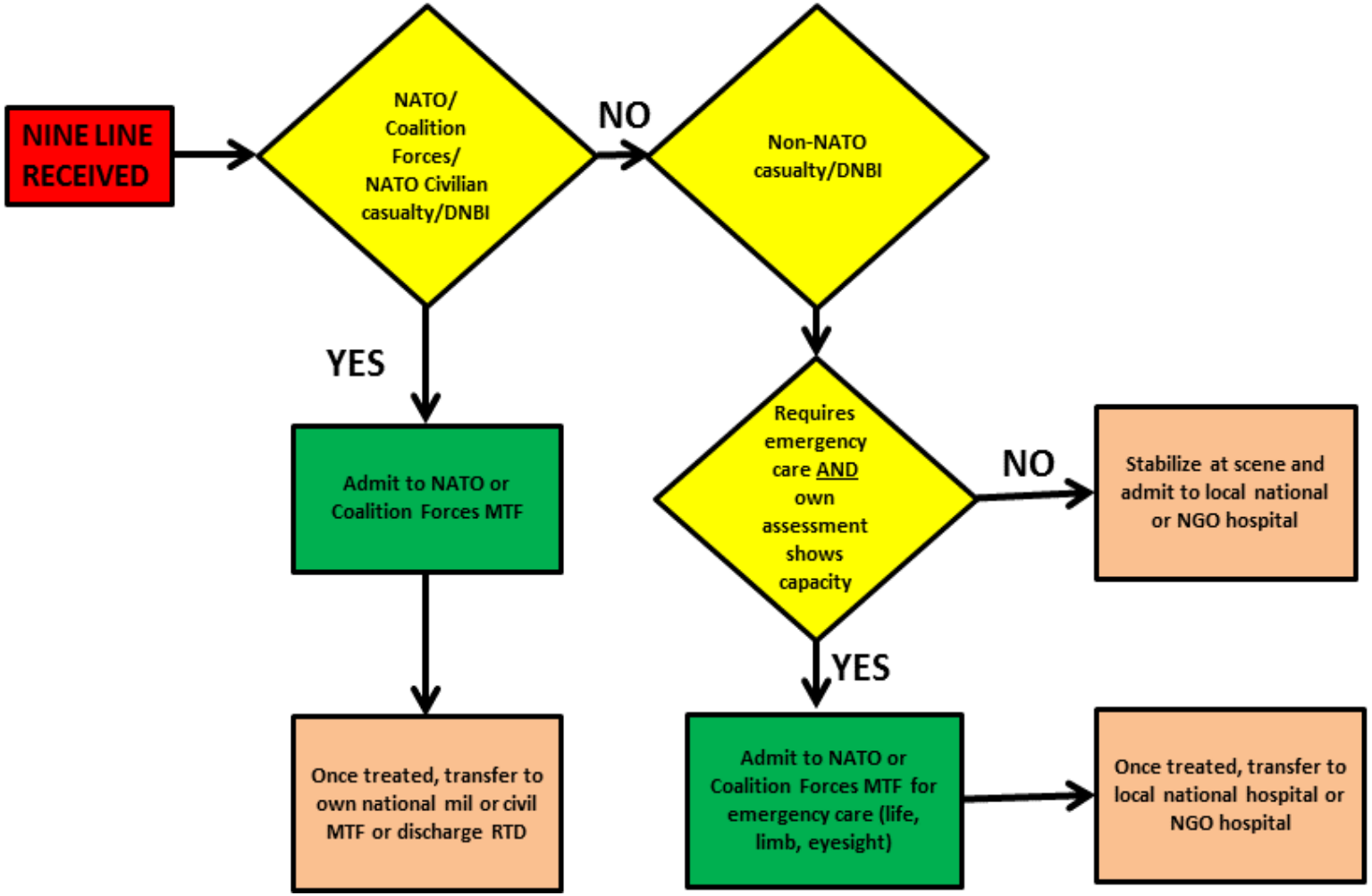
ANNEX C – SIMPLIFIED GUIDE TO SUPPORT THE DEVELOPMENT OF MEDICAL RULES OF ELIGIBILITY



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ANNEX D – MEDICAL SUPPORT PLAN TEMPLATE

This annex is illustrative of what may be included in a medical annex. It is adaptable for the various levels of command. Details will depend on the size and complexity of the mission. It should be modified as required to meet the requirements of the mission.

References. Only list documents essential to the understanding of the content of the annex.

1. SITUATION.

a. Strategic Background. Identify the medical specific information.

b. Health Hazard Assessment. Identify the impacts of: terrain; weather and climate; environmental health threats; flora and fauna; endemic diseases; and CBRN. Details may be included in a MEDINT appendix.

c. Opposing Forces Situation. Identify enemy forces and appraise their general capabilities. Describe the enemy's composition, disposition, location, strength, and probable courses of action. Identify adversaries and known or potential terrorist threats within the area of operations. Identify adversary's compliance with Geneva Convention, with attention to targeting protected facilities, vehicles, and personnel. List the enemy capabilities that could influence the medical mission.

d. Friendly Forces Situation. Describe the aspects that impact medical operations. Identify the supported and supporting commands and components (what friendly forces are covered by this medical plan); friendly force disposition (current or planned); friendly force medical capabilities; population at risk (include allies, coalition, NATO civilian and contract personnel). Describe any bi-national and multinational medical arrangements/agreements.

e. International organizations (IO) and non-governmental organizations (NGO). Identify the IOs and NGOs impacting medical operations within the AO. Examples include the United Nations, World Health Organization, International Committee of the Red Cross, and Médecins sans Frontier.

f. Summarise key events to date of a medical interest.

g. Civil-Military situation. Identify available host nation resources to include medical treatment facilities, interpreters, labour.

h. Civil Considerations. Describe the critical aspects of the civil situation that impact medical operations, such as: cultural or religious sensitivities and events (religious periods and traditional vacations); gender considerations; internally dislocated persons and refugees; political, economic, and environmental issues; and local attitudes towards NATO operations.

i. Attachments and Detachments. List medical units attached to, or detached from, the issuing headquarters. State when each attachment/detachment is effective, and for what duration.

j. List assumptions (if any). This should include the casualty estimate.

2. MISSION. A short description of the who, what (task), when, where, and why (purpose) that clearly indicates the action to be taken and the reason for doing so.

3. EXECUTION.

a. Intent. This may include separate medical lines of operation, e.g., support own forces, provide humanitarian assistance, training/mentoring

b. Concept of medical support. Describe how the medical plan supports the Commander's intent and concept of operations for each phase of the operation (the medical scheme of manoeuvre may be shown graphically (see annex E)):

   i. Identify national and multinational responsibilities/resources.

   ii. Medical support to the components.

   iii. Use of host nation military or civilian MTF.

   iv. Use of contracted medical support.

c. Describe the grouping and tasks, by phase, of the following:

   i. Medical Treatment Facilities:

      (a) Role 1.

      (b) Role 2 (Basic and Enhanced).

      (c) Role 3.

      (d) Role 4.

      (e) Maritime (ashore and afloat).

   ii. Medical evacuation:

      (a) Ground.

      (b) Maritime.

      (c) Aeromedical evacuation (forward, tactical, strategic).

      (d) Casualty support units.

      (e) Patient Evacuation Coordination Cell.

      (f)Medical regulating.

      (g) Patient tracking.

d. Force Health Protection:

   i. Health surveillance.

   ii. Preventive medicine.

   iii. Food and water safety.

   iv. Medical countermeasures.

e. Medical Intelligence.

f. Dental Services.

g. Veterinary Services.

h. Chemical, Biological, Radiological, and Nuclear.

i. Medical reserve.

j. Support to refugees, internally displaced personnel, affected population (particularly in humanitarian and disaster relief operations). The mechanism for the transfer of civilian patients to civil authorities.

k. Coordinating Instructions:

i. Timings, including opening and closing times of medical facilities, and deployment and RSOM timelines.

ii. Key locations and boundaries, including locations of supporting medical facilities.

iii. Theatre patient return policy.

iv. Theatre level patient tracking.

v. Reporting.

vi. Medical Rules of Eligibility.

vii. Protection, marking and notification of medical facilities, platforms, equipment and personnel.

viii. Managing medical care for persons deprived of their liberty.

ix. Lessons learned process.

4. Service Support

a. Medical logistics. Identify multinational solutions or if one nation is the lead nation for specific commodities.

i. Supply of medical, dental and veterinary materiel to include the means of communicating requests for resupply.

ii. Identify recommended supply levels, particularly for missions in an austere environment or extended distances from the full complement of logistics and sustainment resources.

iii. Blood management.

iv. Medical equipment repair.

v. Medical waste disposal.

vi. Property exchange.

b. General logistics. Identify from whom multinational medical units will receive general logistics support.

c. Medical administration:

i. Patient documentation to include how to transfer between nations.

ii. Health records, including electronic health records.

iii. Casualty reporting.

d. Finance:

i. Common funding.

ii. Reimbursement for service.

iii. Payment for use of host nation or contracted medical support.

5. Command and Signals

a. Medical command and control architecture:

i. Theatre, Region/Sector, Component.

ii. Locations of commander and key medical personnel.

iii. Medical Director.

iv. Medical Advisors.

v. Link between national and multinational responsibilities.

vi. Medical Coordination Centres.

viii. Patient Evacuation Coordination Cells.

b. Communications:

i. Voice and computer, secure and non-secure.

ii. Common use software programs, e.g. MEDICS, NATO Trauma Registry, EpiNATO.

iii. Meetings/briefings.

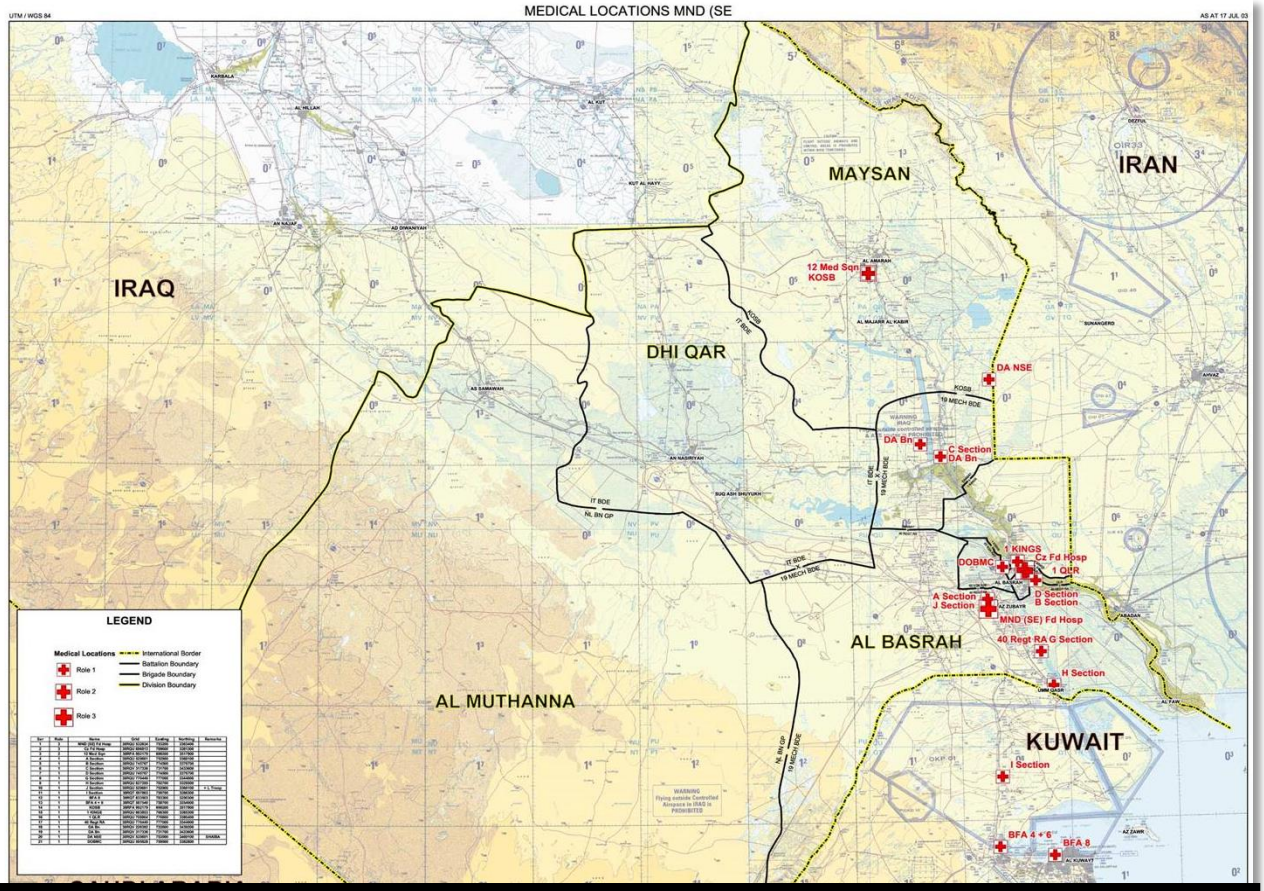
iv. Telemedicine.

c. Information Exchange Requirements.

Appendices (appendices are used to amplify details of a single topic within the medical annex, when required)

Medical Intelligence Report
Force Health Protection Recommendations
Medical C2 architecture to include communications plan
Medical Rules of Eligibility Matrix
Medical Report Formats
Medical Logistics Plan
List of binational and multinational agreements
Medical Component of Chemical, Biological, Radiological and Nuclear Plan
Mass Casualty Plan

ANNEX E : MEDICAL PLAN GRAPHICAL OVERLAY SAMPLES



Initial HSS Plan OP MEDUSA, Phase 2a/2b/3 25 Aug 2006

Concept of HSS to OP MEDUSA.

Chain of MEDEVAC:

1. Point of wounding to unit Cas Collection Point (CCP) via litter/stretcher teams or Armd Ambulance.
2. From CCP to HLZ (H1 / H2 / H3) via Armd Ambulance.
3. From HLZ to KAF R3 via RW MEDEVAC.

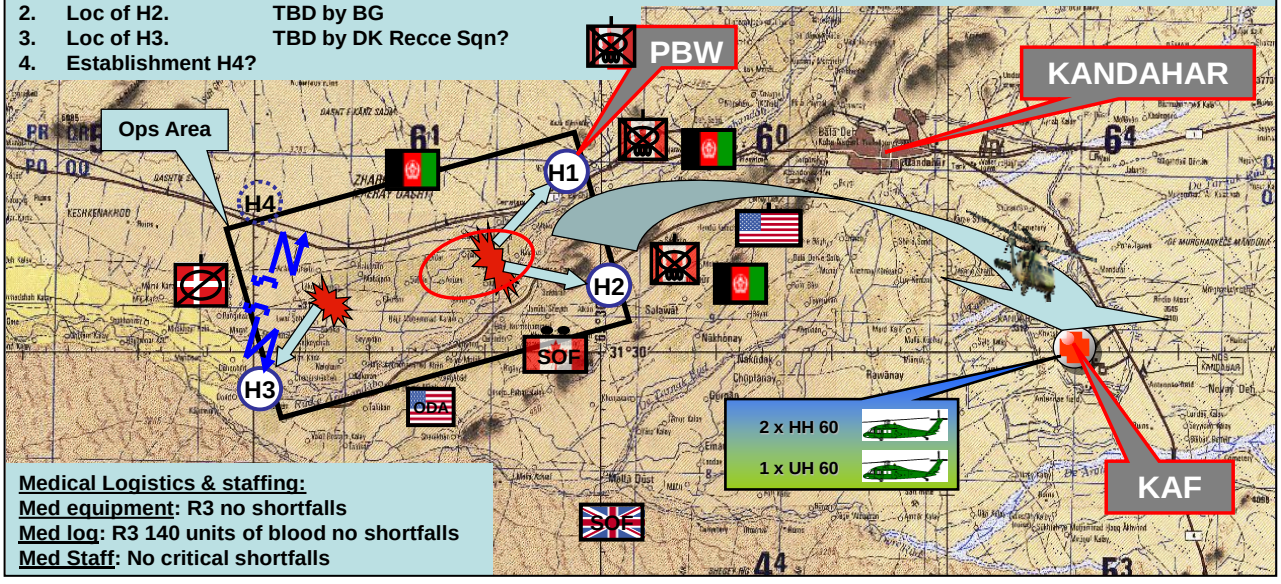
MEDEVAC time H1 or 2 to KAF 40 mins (H3 +5mins)
(15 mins W/U + 20 mins flight time round trip + 5mins transfer)

Critical coordination: HLZs are the lynch pins between the R1 and R2/3 medical care.

1. Loc of H1 (PBW?) TBD by BG
2. Loc of H2. TBD by BG
3. Loc of H3. TBD by DK Recce Sqn?
4. Establishment H4?

Medical Facilities & C2:

Role 1. Location: integral with units.
Tasking: trauma life support & ground medevac to HLZ
Role 3. Location: KAF.
Tasking: resuscitation, primary surgery, specialist diagnostic and clinical support, ICU & ICW care.
HQ JOC & PECC. Location KAF
Command & Control Avn & Patient flow.
Alternate Medical Treatment Facility (Alt MTF)
NLD Role 2E. Location: Tarin Kot.
Tasking: overflow if need be for R3, resus & primary surgery. Flight time HLZ – TK 35 mins.



Medical Logistics & staffing:
Med equipment: R3 no shortfalls
Med log: R3 140 units of blood no shortfalls
Med Staff: No critical shortfalls

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PART 1 – ACRONYMS AND ABBREVIATIONS

ACO	Allied Command Operations
ACT	Allied Command Transformation
AE	Aeromedical Evacuation
AJP	Allied Joint Publication
AJMedP	Allied Joint Medical Publication
AMedP	Allied Medical Publication
AO	Area of Operations
BC	Battle Casualty
Bi-SC	Bi-Strategic Commands
C2	Command and Control
CASORG	Casualty Organisation
CASSIM	Casualty Simulation
CBRN	Chemical, Biological, Radiological and Nuclear
CBRNE3T	Chemical, Biological, Radiological, Nuclear, Explosive, Environmental, Endemic, Traumatic
CCIR	Commander's Critical Information Requirements
CIMIC	Civil-Military Cooperation
CIS	Communication and Information System
CJMED	Combined Joint Medical Branch
CJSOR	Combined Joint Statement of Requirements
CM	Consequence Management
COA	Course of Action
CONOPS	Concept of Operations
CONPLAN	Contingency Plan
COPD	Comprehensive Operations Planning Directive
CRO	Crisis Response Operations
DCR	Damage Control Resuscitation
DCS	Damage Control Surgery
DISTAFF	Directing Staff
DNBI	Diseases and Non-Battle Injuries
FHP	Force Health Protection
FRAGO	Fragmentary Order
HA	Humanitarian Assistance
IO	International Organisation
JC	Joint Command
JFC	Joint Forces Command
JLSG	Joint Logistics Support Group
JOA	Joint Operations Area

JOPG	Joint Operational Planning Group
JTF	Joint Task Force
LOAC	Law of Armed Conflict
MASCAL	Mass Casualty
MC	Military Committee
MEDAD	Medical Advisor
MedCIS	Medical Communications and Information Systems
MEDDIR	Medical Director
MEDEVAC	Medical Evacuation
MEDICS	Medical Information and Communication System
MEDINT	Medical Intelligence
MHC	Military Health Care
MMU	Multinational Medical Unit
MMMSG	Multinational Medical Management Steering Group
MRO	Military Response Options
MRoE	Medical Rules of Eligibility
MTF	Medical Treatment Facility
NATO	North Atlantic Treaty Organisation
NEO	Non-Combatant Evacuation Operations
NGO	Non-Governmental Organisation
NSPA	NATO Support and Procurement Agency
ODCR	Observation, Discussion, Conclusion, Recommendation
OLRT	Operational Liaison and Reconnaissance Team
OPD	Operational Planning Directive
OPLAN	Operation Plan
OPP	Operations Planning Process
PAR	Population at Risk
PECC	Patient Evacuation Coordination Cell
PSO	Peace Support Operations
RFI	Request for Information
RSOM	Reception, Staging, and Onward Movement
RTD	Return to Duty
SACEUR	Supreme Allied Commander Europe
SHAPE	Supreme Headquarters Allied Powers Europe
SME	Subject Matter Expert
SOF	Special Operation Forces
SOR	Statement of Requirement
STANAG	Standardisation Agreement
TCSOR	Theatre Capability Statement of Requirement

PART 2 – TERMS AND DEFINITIONS

See:
AAP-6 *NATO Glossary of Terms and Definitions*

AAP-15 *NATO Glossary of Abbreviations Used in NATO Documents and Publications*

NATO*Term* NATO Terminology Management System

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REFERENCES

The First Geneva Convention - Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field

The Second Geneva Convention - Convention for the Amelioration of the Condition of the Wounded, Sick and Shipwrecked Members of Armed Forces at Sea

MC 133/3	NATO's Operational Planning System
MC 319/3	NATO Principles and Policies for Logistics
MC 326/3	NATO Medical Support Principles and Policies
MC 0593/1	Minimum Level of C2 Service Capabilities in Support of Combined Joint NATO Led Operations
Bi-SC 075-003	Collective Training and Exercise Directive
ACO Directive 83-1	Medical Support to Operations (Edition 2)
ACO Directive 83-2	ACO Guidance for Military Medical Services Involvement with Humanitarian Assistance and Support to Governance, Reconstruction and Development
ACO Comprehensive Operations Planning Directive (COPD) Interim Version 2.0	
AAMedP-1.1	Aeromedical Evacuation (STANAG 3204)
AJP-01(D)	Allied Joint Doctrine (STANAG 2437)
AJP-2.5	Captured Persons, Materiel and Documents (STANAG 2195)
AJP-3	Allied Joint Doctrine for the Conduct of Operations (STANAG 2490)
AJP-3.4	Allied Joint Doctrine for Non-Article 5 Crisis Response Operations (STANAG 2180)
AJP-3.4.1	Allied Joint Doctrine for the Military Contribution to Peace Support (STANAG 2181)
AJP-3.4.2	Allied Joint Doctrine for Non-Combatant Evacuation Operations (STANAG 2514)
AJP-3.4.3	Allied Joint Doctrine for the Military Contribution to Humanitarian Assistance (STANAG 2576)
AJP-3.4.5	Allied Joint Doctrine for the Military Contribution to Stabilization and Reconstruction (STANAG 2590)
AJP-3.5	Allied Joint Doctrine for Special Operations (STANAG 2523)
AJP-4	Allied Joint Logistic Doctrine (STANAG 2182)
AJP-4.5	Allied Joint Doctrine for Host Nation Support (STANAG 2234)
AJP-4.6	Allied Joint Doctrine for the Joint Logistic Support Group (STANAG 2230)
AJP-4.9	Allied Joint Doctrine for Modes of Multinational Logistic Support (STANAG 2512)
AJP 4.10	Allied Joint Medical Doctrine for Medical Support (STANAG 2228)
AJP-5	Allied Joint Doctrine for Operational-Level Planning (STANAG 2526)
AJP-6	Allied Joint Doctrine for Communication and Information Systems
AAP-6	NATO Glossary of Terms and Definitions (Edition 2013)
AAP-15	NATO Glossary of Abbreviations
ALP-4.1	Multinational Maritime Force Logistics (STANAG 1406)
ALP-4.2	Land Forces Logistic Doctrine (STANAG 2406)
ALP-4.3	Air Forces Logistic Doctrine and Procedures (STANAG 7166)
ATP-3.12.1.4	Deployed Force Infrastructure **(**STANAG 2632) (Study)

ATP-3.13.1	Reception, Staging and Onward Movement (RSOM) Procedures (STANAG 2580)
ATP-79	Orders for the Camouflage of Protective Medical Emblems on Land Tactical Operations (STANAG 2931)
AJMedP-2	Allied Joint Doctrine for Medical Evacuation (STANAG 2546)
AJMedP-3	Allied Joint Doctrine for Medical Intelligence (STANAG 2547)
AJMedP-4	Allied Joint Medical Force Health Protection Doctrine (STANAG 2561)
AJMedP-5	Allied Joint Doctrine for Medical Communications and Information Systems (MedCIS) (STANAG 2562)
AJMedP-6	Allied Joint Civil-Military Medical Interface Doctrine (STANAG 2563)
AJMedP-7	Allied Joint Doctrine for Support to Chemical, Biological, Radiological and Nuclear (CBRN Defensive Operations (STANAG 2596).
AJMedP-8	Allied Joint Medical Doctrine for Military Health Care (STANAG 2598) (DRAFT)
AJMedP-9	Multinational Medical Support (STANAG 6505)(DRAFT)
AMedP-8 (C)	NATO Planning Guide for the Estimation of CBRN Casualties (STANAG 2553)
AMedP-1.6	Medical Evaluation Manual (STANAG 2560)
AMedP-1.7	Capability Matrix (STANAG 2560)
AMedP-1.8	Skills Matrix (STANAG 2560)
AMedP-1.10	Medical Aspects in the Management of a Major Incident/Mass Casualty Situation (STANAG 2879)
AMedP-1.12	Medical and Dental Supply Procedures (STANAG 2128)
AMedP-1.17	Tasks and Skills for Appropriate Staffing of Dental Personnel for Operational Deployment (STANAG 2465)
AMedP-3.2	Medical Information Collection and Reporting (STANAG 2481)
AMedP-4.1	Deployment Health Surveillance (STANAG 2535)
AMedP-4.4	Dental Fitness Standards for Military Personnel and the NATO Dental Fitness Classification System (STANAG 2466)
AMedP-6.1	The Civil-Military Planning Process on Oral Health Care and Deployment of Dental Capabilities in all Operations with a Humanitarian Component. (STANAG 2584)
AMedP-7.3	Training of Medical Personnel for Chemical, Biological, Radiological, and Nuclear (CBRN) Defence (STANAG 2954)
AMedP-8.13	The Extent of Dental and Maxillofacial Treatment at Roles 1-3 Medical Support (STANAG 2453)
AMedP-8.3	Training Requirements for Health Care Personnel in International Missions (STANAG 2249)
AMedP-9.1	Modular Approach for Multinational Medical Treatment Facilities (STANAG 6506) (DRAFT)
AMedP-9.2	Guidelines for a Multinational Medical Unit (STANAG 2552) (previously numbered AMedP-1.3)
ATrainP-1	Training and Education for Peace Support Operations (STANAG 6023)
ATrainP-3	Education and Training for Urban Operations (STANAG 2593)
STANAG 2034	NATO Standard Procedures for Mutual Logistic Assistance

STANAG 2939 Minimum Requirements for Blood, Blood Donors and Associated Equipment
The NATO Lessons Learned Handbook Third Edition, February 2016
Field Manual for Medical Lessons Learned (November 2016)

AJMedP-1(A)(1)