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## UKRAINE – NATO. DEVELOPMENT OF THE INDUSTRY OF MILITARY MEDICAL SUPPLY OF NATO OPERATIONS

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## УКРАЇНА – НАТО. РОЗВИТОК ВІЙСЬКОВО-МЕДИЧНОГО ЗАБЕЗПЕЧЕННЯ ОПЕРАЦІЙ НАТО

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**Abstract.** The North Atlantic Treaty Organization (NATO), also known as the North Atlantic Alliance, is an international intergovernmental organization and a military-political alliance comprising countries from North America and Europe. It ensures the collective defense of its members through its core missions: deterrence and defense, crisis prevention and management, and security through cooperation.

A key component of Ukraine's integration into the global security space is its collaboration with international intergovernmental organizations. In this context, military cooperation with NATO member states plays a pivotal role in Ukraine's partnership with the Alliance.

Within NATO, medical support is primarily regarded as a national responsibility of member states. However, the growing complexity of NATO's operations—especially in disaster relief and humanitarian contexts—has underscored the need for improved coordination in the provision of medical aid. Operations conducted in extreme conditions have driven innovation and further development in medical support systems.

Contemporary NATO military medicine employs advanced practices to optimize care for the wounded. This is underpinned by foundational planning and training, which enable adaptability to the challenges posed by casualty volume and type, harsh environmental conditions, logistical constraints, and mission priorities that may supersede medical needs. These approaches are informed by real-world experience and lessons learned from ongoing military conflicts.

Ukraine's Strategy for the Development of the Medical Forces of the Armed Forces until 2035 outlines long-term objectives for building modern, efficient, and technologically advanced medical capabilities. It emphasizes the adoption of effective treatment, rehabilitation, and preventive care practices. Incorporating NATO members' best practices for medical support in emergency situations will align Ukraine's capacities with international standards, contributing to the formation of a unified national medical space and the development of a robust national emergency response model—key steps in Ukraine's Euro-Atlantic integration.

**Keywords:** North Atlantic Treaty Organization, NATO medical support, medical support of the Armed Forces of Ukraine.

**Резюме.** Організація Північноатлантичного договору (НАТО), також відома як Північноатлантичний альянс, є міжнародною міжурядовою організацією та військово-політичним союзом країн Північної Америки та Європи. Вона гарантує колективну оборону своїх членів на основі основних завдань: стримування та захист, запобігання кризам і управління ними, а також забезпечення безпеки через співробітництво.

Важливим елементом інтеграції України до глобального безпекового простору є співпраця з міжнародними міжурядовими організаціями. У цьому контексті військове співробітництво з державами – членами НАТО відіграє ключову роль у партнерстві України з Альянсом.

У межах НАТО питання медичного забезпечення здебільшого розглядаються як національна відповідальність країн-членів. Проте зростаюча складність операцій НАТО, особливо в умовах ліквідації наслідків стихійних лих і гуманітарних місій, підкреслює потребу в посиленні координації в наданні медичної допомоги. Проведення операцій в екстремальних умовах стимулює інновації та подальший розвиток систем медичного забезпечення.

Сучасна військова медицина НАТО використовує передові практики для оптимізації догляду за пораненими. Основу становлять належне планування та підготовка, що дає змогу адаптуватися до викликів, зумовлених кількісними та якісними характеристиками втрат, складними умовами середовища, логістичними обмеженнями,

а також реальністю, коли виконання бойового завдання може мати пріоритет над медичними потребами. Ці підходи ґрунтуються на реальному досвіді й уроках, отриманих під час сучасних збройних конфліктів.

Стратегія розвитку Медичних сил Збройних Сил України до 2035 року визначає довгострокові цілі, спрямовані на створення сучасних, ефективних і технологічно розвинених медичних спроможностей. У документі акцентується увага на впровадженні ефективних методів лікування, реабілітації та профілактики. Запозичення позитивного досвіду країн НАТО в організації медичного забезпечення в надзвичайних ситуаціях сприятиме узгодженості можливостей України з міжнародними стандартами, формуванню єдиного національного медичного простору та створенню власної моделі реагування на надзвичайні ситуації – важливих кроків на шляху євроатлантичної інтеграції України.

**Ключові слова:** Організація Північноатлантичного договору, медичне забезпечення НАТО, медичне забезпечення Збройних Сил України.

## Introduction

The North Atlantic Treaty Organization, also known as the North Atlantic Alliance or NATO is an international intergovernmental organization and a military-political alliance of 32 countries from North America and Europe that aim to achieve the objectives of the North Atlantic Treaty, signed in Washington on April 4, 1949. The Charter on a Distinctive Partnership from 1997 remains the foundational document governing Ukraine–NATO relations. Based on the 1997 Charter on a Distinctive Partnership between Ukraine and NATO, the NATO-Ukraine Commission (NUC) was established as the primary body for developing relations between Ukraine and NATO [1].

Medical support for the Armed Forces of Ukraine (AFU) and other components of defense forces is one of the effective mechanisms through which the state influences the quality of medical care provided to military personnel. It aims to achieve a high degree of order in the military healthcare system by developing and implementing standards, requirements, rules, technologies, works, and services that are applied within it. In Ukraine, military medical support has undergone radical changes since the onset of the Russian Federation's armed aggression against Ukraine in 2014. Initially, this occurred in the form of a hybrid war in Eastern Ukraine, during which a number of serious shortcomings in the combat readiness and operational capacity of the Armed Forces of Ukraine and other defense components were revealed. One of the ways to gain the necessary capabilities involves incorporating NATO standards into Ukraine's national legislation, which governs relations in the security and defense sector [2, 3].

## Materials and Methods

To achieve the goal and fulfill the tasks, a special comprehensive program was developed based on a systematic approach and analysis. This program also utilized Ukrainian legislation concerning national defense, healthcare for military personnel, and scientific articles on the medical support of the Armed Forces of Ukraine.

The following methods were employed in the research process: historical-informational, semantic evaluation of scientific documents, observation, and structural-logical analysis.

This approach clearly outlined the relationship between the object and the subject of the research, allowing for a comprehensive assessment of the state of the object. It also identified influencing factors, based on which directions were determined for creating a database and methods for processing the obtained information.

## Results

NATO's Strategic Concept of 2022 reaffirms that the Alliance's primary goal is to guarantee the collective defense of its members based on a "360-degree" approach. It also outlines NATO's core tasks: deterrence and defense, crisis prevention and resolution, and security through cooperation. In everyday life, security is key to our well-being, and NATO aims to guarantee the freedom and security of its members through political and military means.

**Political:** NATO promotes democratic values and enables member states to consult and cooperate on defense and security issues to address challenges, build trust, and ultimately prevent conflicts.

**Military:** NATO's primary obligation is the peaceful resolution of disputes. If diplomatic efforts fail, NATO has the military capacity to conduct crisis management operations. These operations are initiated in accordance with the collective defense clause of the founding treaty – Article 5 of the Washington Treaty – or under the mandate of the United Nations, either independently or in cooperation with other countries and international organizations [3].

- The **Washington Treaty**, or the North Atlantic Treaty, forms the foundation of the North Atlantic Treaty Organization (NATO). It was signed in Washington, D.C., on April 4, 1949, by twelve founding members of the Alliance. The Treaty derives its authority from Article 51 of the United Nations Charter, which affirms the inherent right of independent states to individual or collective defense. The Treaty is based on the principle of collective defense, enshrined in Article 5, which obligates Alliance members to protect one another and promotes solidarity within the Alliance. Despite changes in the security environment, the original Treaty has never been rewritten, and each member state can fulfill its obligations based on its own capabilities and circumstances. The Treaty is concise, consisting of only 14 articles, and inherently flexible in its scope. Its carefully crafted provisions were the result of months of discussions and negotiations preceding its signing. Once Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, the United Kingdom, and the United States resolved all issues, they finalized the document that established the North Atlantic Alliance.

- On April 4, 1949, twelve countries signed the North Atlantic Treaty in Washington, D.C., giving it the name "The Washington Treaty" in its honor. Under the Treaty, all NATO member states committed to sharing the risks, responsibilities, and benefits of collective defense, which is the core essence of the Alliance. In 1949, the primary goal

of signing the Treaty was to establish a mutual assistance pact to counter potential Soviet Union efforts to extend its influence from Eastern Europe to other parts of the continent. According to the Treaty, member states were required not to enter into any international agreements that would conflict with the Treaty. Additionally, the Treaty obligated them to uphold the purposes and principles of the UN Charter. Moreover, the Treaty emphasizes that NATO member states form a unique community of values, dedicated to the principles of individual liberty, democracy, human rights, and the rule of law.

- **Beyond collective defense and key values**, the Organization's spirit is defined by significant aspects such as the principle of consensus-based decision-making and the role of the consultation process. This is further supported by NATO's defensive character and flexibility.

- The signing of the Treaty led to the creation of the North Atlantic Alliance, though it evolved into a fully-fledged organization later on. In fact, the North Atlantic Treaty Organization (NATO) provides the structure for achieving the Alliance's goals. To this day, these goals have not undergone significant changes, and the Treaty itself has never been rewritten. The only "amendments" made over time were accession protocols that were added as new members joined NATO. This demonstrates the foresight of the Treaty's architects and their ability to combine international concerns and tasks with national interests.

#### **Political Circumstances Leading to the Treaty's Creation:**

1. After the end of World War II, the hostility that had characterized relations between the Soviet Union and Western countries since 1917 began to escalate again. The East-West confrontation was fueled by opposing interests and political ideologies. Tensions arose from peace agreements and reparations, and events such as the Berlin blockade in April 1948, the coup in Czechoslovakia in June 1948, and the immediate threat to the sovereignty of Norway, Greece, and Turkey further exacerbated the situation.

2. As Soviet dominance spread across several Eastern European countries, Western European nations feared that Moscow sought to impose its ideology and take control of all of Europe. Starting at the end of World War II in 1945, Western governments began reducing their defense structures and demobilizing. However, in January 1948, British Foreign Secretary Ernest Bevin emphasized the need for a "treaty of alliance and mutual assistance" – a defense alliance and regional grouping based on the UN Charter.

3. The United States agreed to provide military support to Europe only if Europe was unified. As a result, Belgium, France, Luxembourg, the Netherlands, and the United Kingdom signed the Brussels Treaty in March 1948, which established the Western Union. Aimed at strengthening ties between the participating countries while creating a system of collective defense, the Brussels Treaty later served as the foundation for the Washington Treaty.

4. Meanwhile, the United States Senate passed the Vandenberg Resolution – a document that was destined to change the course of U.S. foreign policy by creating a

constitutional procedure for U.S. participation in mutual defense mechanisms during peacetime.

5. The Basis for Transatlantic Treaty Negotiations the foundation for the start of negotiations on the transatlantic treaty was laid.

#### **Treaty Duration**

The negotiating parties did not have a unified position on the duration of the Treaty. Some preferred a long-term agreement, with the initial validity set at 20 years, while others feared that any period exceeding 10 years might appear as an unnecessary extension of wartime conditions. Ultimately, at the insistence of Portugal, the Treaty's duration was set at 10 years, after which it could be reviewed (Article 12). Only after the Treaty had been in effect for 20 years could a member state withdraw from the Organization (Article 13). To date, neither provision has been applied, meaning the Treaty has never been reviewed, and no member state has expressed a desire to withdraw from NATO [3, 4].

#### **Development of NATO Operations' Medical Support**

NATO operations in extreme conditions have driven the further development of the medical support field. Today, NATO military medicine is focused on utilizing advanced practices to optimize care for the wounded. The foundation is comprehensive training and planning.

The organization and planning of medical support for the population during medical protection measures must align with the provisions of Ukraine's new military doctrine, which considers the possibility of various types of modern warfare: global, regional, local, and armed conflicts. Contemporary armed conflicts are characterized by the unpredictability of combat operations and the distinctive armament used by opposing forces, including high-kinetic-energy projectiles and widespread use of explosive devices. These require new organizational solutions, significant medical knowledge, and efforts aimed at preserving the lives and capacity of the maximum number of injured individuals.

An essential component of Ukraine's integration into the global security space is cooperation with international intergovernmental organizations. The development of cross-border cooperation is based on the principles of planned integration with major global institutions, united by societal and universal values, reflecting Ukraine's national interests and harnessing additional potential. Currently, the key tasks for the relevant sector are the analysis and development of general approaches (action algorithms) for emergency situations in both peacetime and wartime, determining general mechanisms for organizing logistical support in the event of man-made disasters, natural catastrophes, and other extreme situations. Defining key indicators for the activities of international bodies and medical support systems should contribute to forming a unified national medical space as part of the national security system. The implementation of international experience in organizing medical assistance in emergencies into existing systems will help avoid or reduce the risks of duplication in the organization

of medical assistance, allowing the creation of a unified system of medical care modeled on treatment principles. This will enable resource determination and practices for providing medical aid to those affected. Ukraine's cooperation with NATO member countries in the military sphere is seen as an important element of partnership with the organization as a whole. The implementation of NATO standards and procedures through partnership in emergency response contributes to Ukraine's strategic goal of Euro-Atlantic integration. Interest in the experience of foreign military medical services, especially in NATO's medical support, has increased. In this regard, the analysis and evaluation of achievements in the field of military medicine are of significant importance.

The primary document regulating medical support in the United States is the military medical doctrine. There are several types of doctrines: the National Unified Doctrine of the U.S. Army, the Allied Doctrine of NATO Member Countries, and the Doctrine of Multinational Forces (NATO and other countries). Multinational doctrines ensure unification, standardization, and account for the specific features of national military healthcare systems. The provisions of allied or partner doctrines are formulated to ensure that the national priorities in the medical support of individual member countries do not hinder cooperation and collaboration.

Significant attention is given to NATO's medical support aspects, as reflected in the Alliance's Strategic Concept (April 29, 1999) and the MC Directive for Military Implementation of Alliance Strategy (June 14, 1996). The MC 319 directive ("NATO Principles and Policies for Logistics") emphasizes that general principles of logistics largely apply to the medical support of troops. However, specific medical factors must also be considered when organizing medical support.

In 1993, the NATO Military Committee developed the MC 326 directive ("Medical Support Precepts and Guidance for NATO"). Taking into account NATO's combat experience, the Committee of the Chiefs of Military Medical Services in NATO (COMEDS) developed a general medical support concept for the NATO Joint Armed Forces, known as the "NATO Medical Support Principles and Policies." This document aligns with the NATO Principles and Policies for Logistics and outlines operational principles of medical support while incorporating modern medical advancements. It establishes the principles and policies of NATO's medical support and presents a medical support concept to be used in developing national doctrines, concepts, plans, and procedures in member countries.

The principles and policies for decision-making apply to both peacetime and wartime, including peacekeeping, humanitarian operations, and peace-enforcement missions. The overall coordination of NATO medical support is entrusted to the COMEDS, which consists of the heads of the military medical services of NATO member states. COMEDS consolidates and coordinates military-medical development within the Alliance. Medical support matters in NATO are addressed exclusively within the framework of the national responsibility of member states. New NATO operations have drawn increased attention to the

need for coordination of medical assistance efforts during disaster relief and humanitarian operations. COMEDS' objectives include improving and expanding coordination, standardization, and interoperability in the medical field among member countries, as well as enhancing information exchange on organizational, operational, and procedural aspects of military medical services in NATO and partner countries.

COMEDS coordinates its activities with other NATO structures, including the NATO Standardization Office, the Joint Medical Committee, and the Medical Board of NATO's Supreme Commanders. Additionally, a Special Steering Group has been established to mitigate the consequences of the use of weapons of mass destruction, particularly in response to the threat posed by biological weapons [5].

To assist in fulfilling its tasks, COMEDS includes several working groups that address the following topics: military medical structures, operations and procedures, military preventive medicine, emergency medical care, military psychiatry, dental services, medical equipment, military pharmacy, food hygiene, food technology, veterinary medicine, medical training, and medical information management systems.

Currently, Ukraine's Law "On Amendments to Certain Laws of Ukraine Regarding Military Standards" aims to ensure maximum interoperability between the leadership of the Ukrainian Armed Forces (UAF) and other security sector formations, as well as with the armed forces of NATO member states. These changes fully extend to the medical support systems of the UAF and other military units [6].

The Strategic Defense Bulletin of Ukraine, approved by Presidential Decree on June 6, 2016, includes Operational Goal 4.2, which focuses on building a medical support system capable of providing proper medical care for all defense tasks. This involves implementing modern technologies for medical assistance and treatment of the wounded following medical care standards, clinical protocols, and other health sector standards. Ukraine's Military Medical Doctrine, approved by government resolution, identifies one of the key tasks of military medical support as developing and implementing unified approaches to preserving and promoting the health of service members, organizing and providing medical assistance in cases of injuries, damage, and diseases, and ensuring the swift recovery of combat readiness and work capacity. These goals align with NATO medical standards. The "Medical Forces of the Armed Forces of Ukraine" doctrine establishes that medical support is provided within a unified medical space in compliance with healthcare legislation and medical care standards. It also emphasizes integrating the civilian healthcare system to offer medical assistance to service members when necessary. The Medical Forces Development Strategy of the UAF through 2035 outlines long-term objectives for the gradual creation of future Medical Forces. The strategy prioritizes the development and implementation of modern, effective medical technologies for care, treatment, and rehabilitation, along with preventive medical measures [7–9].

## Discussion

Let's consider the general principles of NATO medical support [10].

### 1. Compliance with Humanitarian Conventions

Medical activities must be conducted in accordance with the provisions outlined in the Hague and Geneva Conventions. In situations where, for some reason, the provisions of these conventions cannot be fully adhered to in practice, a mandatory rule must be followed: all wounded and sick individuals must be treated without bias, taking into account their clinical needs and available medical resources.

### 2. Standards of Medical Support

The standards of medical support for NATO forces must be acceptable to all member countries. Regardless of the nature of the mission, the primary objective of the military healthcare system is to provide medical care standards as close as possible to those required in peacetime.

### 3. Health Maintenance and Disease Prevention

Medical support planning should include detailed measures to prevent diseases and other health threats as a key factor in maintaining the combat readiness of personnel.

### 4. Scope of Medical Assistance

Medical care is provided progressively, covering everything from preventive medicine, emergency (first) aid, resuscitation, and stabilization of vital functions to evacuation and specialized care.

### 5. Continuity of Medical Care

Patients moving through the medical system must receive continuous, substantial, and progressive medical care and treatment. Medical care and treatment must also be available throughout the evacuation process on the Declared Key Operational Principles

**Authority. Responsibility. Mandatory Medical Support, etc.**

#### 1. Authority

Medical resources provided by NATO member countries are an integral part of NATO forces. Under normal circumstances, countries must use their own forces to provide medical care and treatment. Medical service units and formations must be deployed with their medical structures in strict accordance with the anticipated operational requirements. For non-NATO countries, this may include pre-deployment checks with inspections of agreed medical resources (if necessary). Medical units may have their own configuration or be reinforced by other modular units. The standards of medical care should be as close as possible to peacetime standards. This may involve personnel and/or equipment from other units. When expanding medical units, sufficient time must be allocated to maintain professional training standards.

#### 2. Responsibility

NATO member countries retain ultimate responsibility for the medical support of their units and sub-units within NATO Forces.

#### 3. Planning

Medical support planning is an integral part of combat operations planning. Such planning is carried out by experienced medical personnel who must be provided with data from operational medical intelligence.

### 4. Mandatory Medical Support

Medical resources required at the start of any operation must be sufficient for the collection, evacuation, treatment, and hospitalization of patients arriving daily. Factors such as the military situation, geography, climate, and medical resource readiness must be considered in the concept of medical support development and during planning.

### 5. Preservation of National Structures

National health and evacuation systems should be preserved to the greatest extent possible.

### 6. Transition to Crisis (Conflict) Situations

Medical support in emergencies should be based on the peacetime military healthcare system. Medical readiness and suitability must be at a level that ensures a smooth transition from peacetime to a conflict or crisis scenario.

### 7. Medical Standardization

National contingents should strive to achieve the highest possible level of standardization (compatibility, interoperability, interchangeability).

### 8. Medical Communication

An effective communication system must be established between national contingents, medical facilities, evacuation control points, and NATO medical personnel.

### 9. Medical Information Management

Effective management of medical information, particularly regarding patients, is a vital element of medical support planning. Multinational contingents should align medical principles, policies, and support concepts in their doctrines, concepts, directives, and procedures in agreement with other nations. Effective medical support within NATO's structure is regarded as a key to mission success. Currently, preparatory measures are underway to adapt Ukraine's defense system to NATO standards. In accordance with the Strategic Defense Bulletin of Ukraine, enacted by Presidential Decree No. 240 of June 6, 2016, the Ministry of Defense of Ukraine is modernizing its defense planning systems by introducing capability-based planning processes focused on threats. This type of planning is used by NATO member states.

Among the key requirements for this capability (functional group) is the ability to systematically adapt to quickly assess the status of local, regional, and national vital services according to the requests of the host (or attacked) country or an international organization to support operations (or emergencies), including the assessment of the current state of the medical service and the availability of medical services. Autonomous capability includes providing Level 2 (3) medical care, which involves receiving, stabilizing, and holding injured personnel until they can return to duty, as well as aeromedical evacuation to a deep logistics base or national medical systems.

Overview of Key Characteristics of the BiSC Capability Codes and Capability Statements Catalog (the BiSC Capability Codes and Capability Statements Catalog), distributed to EU countries and participants of the Mediterranean Dialogue and the Istanbul Cooperation Initiative (such as Afghanistan, Australia, Iraq, Japan, South Korea, Mongolia, New Zealand, Pakistan), is also proposed for use in Ukraine. The Catalog establishes a common understanding of capabilities in defense and operational planning, including minimum capability

requirements, target packages, capability reviews, risk assessments, and shared requirements. Capability codes represent a unique alphanumeric functional identifier, while the statements define the core requirements for units, taking into account all areas of development—such as refining guidance documents, organizational structure, training, equipment, technical support, command systems, personnel, logistics, and achieving interoperability. These codes and requirements are widely used across NATO structures, providing a common conceptual framework for describing capabilities and facilitating long-term and operational planning. The U.S. system for organizing medical support during emergencies is largely conceptual and doctrinal. It is important to note that the new U.S. defense strategy involves the global redistribution of forces, meaning that NATO's command and control systems are adapted through a common conceptual framework and principles for assessing required forces and assets.

To organize joint medical support and counter threats, NATO uses several key doctrines, including:

- **Allied Joint Doctrine for Medical Support:** This doctrine sets guidelines for medical support during NATO operations.
- **Allied Joint Civil-Military Medical Interface Doctrine:** This addresses the interaction between military and civilian medical systems.
- **Allied Joint Doctrine for Chemical, Biological, Radiological, and Nuclear Defence (CBRN):** This outlines medical support in environments affected by chemical, biological, radiological, and nuclear threats.
- **Concept of Operations of Medical Support in CBRN Environments:** This concept covers medical operations in such hazardous environments.
- **Evolution of NATO Military Medicine**

NATO's military medicine has evolved, particularly due to operations in extreme conditions, focusing on optimizing care for the wounded. One of the core elements of this evolution is **comprehensive planning**, which allows for adapting to challenges posed by the quantity and quality of casualties, extreme environmental conditions, logistical limitations, and the reality that mission completion may take precedence over medical needs. The concept of military medicine is based on real-world experiences and lessons learned from ongoing military conflicts. One of the most significant advancements is the development and implementation of the **Joint Trauma System (JTS)**. This system ensures that every soldier injured in battle has the best chance of survival and the highest potential for recovery. The motto of the system is "The right patient, at the right time, at the right place, with the right care." The JTS is a coordinated effort aimed at providing comprehensive care to all injured patients and is integrated into local healthcare systems. Its main value lies in its ability to ensure the proper level of care for wounded patients using available resources for the best treatment outcomes.

The mission of the "**Joint Trauma System**" (JTS) is to coordinate trauma care through continuous improvement and evidence-based medical approaches. The value of the trauma care system is reflected in the development of over 36 clinical guidelines relevant to military physicians, grounded in scientific evidence, which have successfully

reduced morbidity and mortality from combat injuries. At each stage of care, the top priority is addressing the greatest potential threats within the scope of the mission. This concept, proven effective on the battlefield, has significantly lowered mortality rates.

The **trauma care system** represents organized and coordinated efforts across a defined geographical area, aimed at providing a full spectrum of care to all injured patients, integrated into the local healthcare system. Its core value lies in its ability to deliver appropriate care to wounded patients using available resources to achieve optimal treatment outcomes.

The current model of military trauma care is the **Joint Theater Trauma System (JTTS)**, which provides a systematic and comprehensive approach to coordinating battlefield care, minimizing morbidity and mortality, and optimizing essential care for casualties.

#### **Objectives of the Joint Trauma System:**

- **Organize and maintain a trauma registry** to store data and monitor care delivery and outcomes.
- **Ensure full access to registry data** for healthcare providers.
- **Provide a database** for generating reports for authorized government agencies.
- **Offer access to the database for approved researchers** through a bioethics committee.
- **Facilitate electronic collection and dissemination of patient data** to support continuous care and maintain long-term medical records.
- **Create and manage an outcome database** to analyze clinical decisions and assess treatment outcomes to improve care methods.
- **Provide timely and relevant information** on care and outcomes to the Ministry of Defense and other stakeholders.
- **Develop a research strategy** focused on reducing morbidity and mortality.
- **Standardize treatment approaches throughout the care process** and implement evidence-based clinical guidelines.
- **Enhance communication across all levels of care** to improve treatment coordination for injured patients [10–13].

A systematic **approach to casualty care** has demonstrably reduced morbidity and mortality during NATO military operations.

On **March 1, 2024**, President of Ukraine Volodymyr Zelenskyy signed **Law No. 10343** on the organization of appropriate medical support for the **Armed Forces of Ukraine (UAF)**. According to the bill's explanatory note, the law empowers the Ministry of Defense to approve **protocols and standards for pre-hospital and medical care** for the Security and Defense Forces based on **NATO standards**, as well as to oversee their compliance [14].

The Ministry of Defense is also authorized to approve the **list, quality standards, and minimum requirements for specialized medical products** used by the Security and Defense Forces during combat operations. The adoption of this law will ultimately help meet the needs of the Armed Forces by providing **modern, unified, and standardized medical equipment and sanitary facilities** to military units.

## Conclusions

1. The analysis shows that currently there are no international or national recommendations regarding the existing systems of medical support organization for NATO units in emergency situations.

2. Positive experiences of NATO's medical support systems in emergency situations should be considered and integrated.

3. The adaptation of NATO's management and control systems experience should be carried out using a common conceptual framework and assessment principles of required forces and resources, aimed at mission accomplishment.

4. Organizing interaction between coordination and management bodies within the functional and territorial subordination framework during emergencies, both in peacetime and wartime, is one of the key conditions for the efficiency and effectiveness of medical support actions.

5. Implementing NATO's positive experience in organizing medical support during emergencies in Ukraine will help align the country's capabilities with international basic requirements.

6. Euro-Atlantic integration of Ukraine will contribute to the creation of a unified medical space within the state and the development of a national response model for emergency situations.

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## Bibliography

1. North Atlantic Treaty Organization BiSC Capability Codes and Capability Statements. NATO Unclassified. Virginia, United States of America, January 2016. 399 p.
2. Шекера О. Г. Підвищення оперативної сумісності медичного забезпечення Збройних Сил України та НАТО. *Здоров'я суспільства*. 2016. № 3–4. С. 56–63.
3. The strategic concept of NATO – 2022 was adopted by the heads of states and governments at the Madrid NATO summit on June 29, 2022.
4. Badyuk M.I., Mykyta O.O., Hubar A.M. Substantiation of the model for standardizing medical support of the Armed Forces of Ukraine and assessing its effectiveness. *Wschodnioeuropejskie Czasopismo Naukowe* (East European Scientific Journal). 2016. Scientific 7. P. 37–46.
5. NATO "COMEDS", 2010. URL: <https://www.nato.int/cps/ru/natohq/topics 49168.htm>.
6. Implementation of NATO standards and their application in the activities of the Armed Forces of Ukraine: textbook. Kyiv: National Defense University of Ukraine named after Ivan Cherniakhovskyi, 2018. 112 p.
7. Доктрина медичного забезпечення сил оборони. ВКП 4-00(35)01.01. Затверджено Головнокомандувачем Збройних Сил України 11 листопада 2021 року (zareestrovano za № 3007/HBFC від 11 листопада 2021 року). Київ. 2021. 64 с.
8. Шекера О. Г., Стеблюк В. В., Киржнер Г. Д. Система медичного забезпечення Об'єднаних збройних сил НАТО. *Здоров'я суспільства*. 2016. № 3(1/2). С. 105–108.
9. Resolution of the Cabinet of Ministers of Ukraine dated October 31, 2018, No. 910 "On approval of the Military Medical Doctrine of Ukraine."
10. The president signed the law on medical support of the Armed Forces according to NATO standards. URL: <https://armyinform.com.ua/2024/03/01/prezydent-pidpysav-zakon-pro-medychne-zabezpechennya-zsu-za-standartamy-nato/>.

*zakon-pro-medychne-zabezpechennya-zsu-za-standartamy-nato/*.

11. NATO medical support principles and policy NATO Euro-Atlantic Partnership Council. URL: <https://usaisr.amedd.army.mil/cpgs.html>. [http://milmed.org.ua/Publications/3\\_INATO.doc](http://milmed.org.ua/Publications/3_INATO.doc).

12. Order of the Ministry of Defense of Ukraine dated December 26, 2019, No. 670 "On ensuring the functioning of the military standardization system."

13. Лівінський В. Г., Жаховський В. О., Швець А. В. Стандартизація медичного забезпечення у Збройних Силах України: стан та перспективи розвитку / В. Г. Лівінський, В. О. Жаховський, А. В. Швець, О. М. Іванько, Д. В. Ковида. *Український військово-медичний журнал*. 2023. № 1. Т. 4.

14. Decree of the President of Ukraine dated March 25, 2021, No. 121 "On the Strategy of Military Security of Ukraine."

## References

1. North Atlantic Treaty Organization BiSC Capability Codes and Capability Statements. NATO Unclassified. Virginia, United States of America, January 2016; 399 p.
2. Shekera O.H. Improving interoperability between medical support of the Armed Forces of Ukraine and NATO. *Health of Society*; 2016; 3–4:56–63 (In Ukrainian).
3. The strategic concept of NATO – 2022 was adopted by the heads of states and governments at the Madrid NATO summit on June 29, 2022.
4. Badyuk M.I., Mykyta O.O., Hubar A.M. Scientific substantiation of the model for standardizing medical support of the Armed Forces of Ukraine and assessing its effectiveness. *Wschodnioeuropejskie Czasopismo Naukowe* (East European Scientific Journal); 2016; 7:37–46.
5. NATO (2010), "COMEDS". Available from: <https://www.nato.int/cps/ru/natohq/topics 49168.htm>.
6. Implementation of NATO standards and their application in the activities of the Armed Forces of Ukraine: textbook. Kyiv: National Defense University of Ukraine named after Ivan Cherniakhovskyi, 2018; 112 p.
7. Doctrine on medical support of defense forces. WCP 4-00(35)01.01. Approved by the Commander-in-Chief of the Armed Forces of Ukraine on November 11, 2021 (registered under No. 3007/NVGS from November 11, 2021). Kyiv, 2021; 64 p. (In Ukrainian).
8. Shekera O.H., Stebliuk V.V., Kyrzhner H.D. Medical support system of NATO Joint Armed Forces. *Health of Society* 2016; 3(1/2):105–108 (In Ukrainian).
9. Resolution of the Cabinet of Ministers of Ukraine dated October 31, 2018, No. 910 "On approval of the Military Medical Doctrine of Ukraine."
10. The president signed the law on medical support of the Armed Forces according to NATO standards. Available from: <https://armyinform.com.ua/2024/03/01/prezydent-pidpysav-zakon-pro-medychne-zabezpechennya-zsu-za-standartamy-nato/>.
11. NATO medical support principles and policy. NATO. Euro-Atlantic Partnership Council. Available from: <https://usaisr.amedd.army.mil/cpgs.html>. [http://milmed.org.ua/Publications/3\\_INATO.doc](http://milmed.org.ua/Publications/3_INATO.doc).
12. Order of the Ministry of Defense of Ukraine dated December 26, 2019, No. 670 "On ensuring the functioning of the military standardization system."
13. Livinskiy V.G., Zhahovskiy V.O., Shvets A.V., Ivanko O.M., Kovyda D.V. Standardization of medical support in the armed forces of Ukraine: status and prospects of development. *Ukrainian journal of military medicine*; 2023; 1; 4 (In Ukrainian).
14. Decree of the President of Ukraine dated March 25, 2021, No. 121 "On the Strategy of Military Security of Ukraine."



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