

HEALTHCARE TACTICS AND OPERATIONAL MEDICINE OF THE ROMANIAN ARMY IN THE PAST AND PRESENT

Colonel (ret.) medic professor Viorel ORDEANU, Ph.D*

Colonel (ret.) professor Benoni ANDRONIC, Ph.D**

**(Academy of Romanian Scientists, 3 Ilfov, 050044, Bucharest, Romania,
email: secretariat@aosr.ro)**

Abstract: *In the authors' opinion, the organization of medical support for military forces in areas of operations, in the context of military actions in future armed conflicts, involves a complex system structured on several levels, in accordance with NATO standards and national regulations. Since the operational medical assistance system aims to ensure the health, protection, and rescue of military personnel during military operations or operational exercises, both in peacetime and in situations of crisis, siege, or war, the authors analyze how it was conceptualized, how it currently stands, and, in their opinion, how it will need to respond to the requirements of future military operations.*

Medical support for military units in areas of operation is a well-structured system, provided for in military regulations and described in the specialist literature, organised pyramidally by levels of assistance, with an emphasis on triage, first aid, rapid evacuation and specialised treatment. The medical directorate of the Ministry of National Defense, military hospitals, and logistics centers play an essential role in organizing and supporting this activity, and training in accordance with NATO standards ensures efficiency, despite existing limitations in terms of forces, resources, and funding.

Keywords: *medical tactics, areas of operations, armed conflict, combatants, medical support, organization of medical services, operational medicine, NATO standards.*

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Introduction

War is a permanence of human history, and perhaps of its prehistory as well, so we know that it will happen, but we do not know where, when and how. The biological selection of combatants, maintaining the capacity to fight and work, caring for the wounded and sick, psychosomatic support of fighters, restoring the aptitude for fighting, work or life, are essential elements in the support and logistical support of the living force, on which victory depends. In this field, the military medical service has an essential contribution, through its specific forces and means.

*„Titu Maiorescu” University, Bucharest, email: ordeanu_viorel@yahoo.com.

**„Carol I” National Defence University, coresponding member of the Academy of Romanian Scientists, email: benoneandronic@yahoo.com.

Considering that in Romanian the broader scope of the term "sanitary" (traditionally used under the influence of the French language), which regards the state of health in a multilateral manner compared to the term "medical", which includes only the diagnosis, treatment and prophylaxis of diseases, we prefer it over current translations from English. The translation must respect the spirit of the text and not just the form, which could be misleading.

1. Premises for organizing the military medical service

The Romanian Army, like other modern armies, inherited from the Roman army the principles of organization and tactics adapted to current conditions, as well as the dictum *Si vis pacem, parabellum*.

Military medicine has continuously progressed, depending on the development of medicine, having adequate forces and means and organization corresponding to the era. Thus, in the **old ternary organization** (with 3 basic units plus special, auxiliary and non-combatant ones) so the group, platoon, company, battalion, regiment, brigade, division, army corps, army, army group, and later the front and front group, there were also formations, subunits, units and large logistical support units, including subunits and medical formations of role treatment (FMT Rol) corresponding to the tactical, operational and strategic echelon.

During the campaign, **wounded assembly points** (PAR) were established at subunits for pre-medical first aid (self-help, mutual aid, unskilled aid), at units, **unit infirmaries** for qualified medical aid, led by a generalist military doctor (chief physician and deputy commander), at large tactical units, **field hospitals** with surgeons for specialized medical aid, at large operational units, **hospital bases** with hospital departments and field hospitals with various specialties, and at the strategic level, **hospitals in the interior area**¹ for highly specialized medical treatment and medical recovery. One can observe the perfect correspondence with the organization of operational medicine, but also a structural mismatch, because medical support was part of the logistical support of the force structure, although the chief physician was directly subordinate to the commander.

When Romania had a mass army, with quasi-compulsory recruitment, the military strength was very large (hundreds of thousands of men and hundreds of thousands of horses), which were progressively reduced over time. These were organized into 4 armies which upon mobilization became Fronts (North-East, North-West, South-West, South),

¹ REGULATION of April 17, 2008, logistics of joint operations, Issued by the Ministry of Defense, Published: Monitorul Oficial no. 353 of May 7, 2008, available at <http://www.monitoruljuridic.ro/act/regulamentul-din-17-aprilie-2008-logisticii-operatiilor-intrunitate-emitent-ministerul-apararii-publicat-n-monitorul-oficial-nr-353-din-7-92448.html>, accessed on 03.10. 2025.

plus a South-Eastern, Transdanubian Operations Zone, according to the traditional doctrine of circular defense of the country by the entire people. The Medical Directorate (DM) of the Ministry of National Defense (MApN) had 12 military hospitals and many other medical, clinical and non-clinical formations, including a Center for Medical-Military Scientific Research for Medical Protection against CBRN Weapons. Each Front/Operations Zone formed a Medical Directorate (from the Medical Section of the large operational unit), with a Hospitalization Base with two Hospitalization Sections, which totaled dozens of field hospitals each, an Anti-Epidemic Health Center (from the Anti-Epidemic Laboratory of the large unit), transfusion center, medical warehouse, etc. At all levels, the Chief Physicians were subordinated to the Commander in line of command, (as His Deputy), and on the medical line to the Chief Physician of the higher echelon, indicating the importance of military medicine for the armed forces.

2. The current organization and functioning of the Military Medical Service

In peacetime, there are Medical Directorates of ministries and non-governmental organizations of militarized force institutions (MApN, MAI, SRI, etc.) and specialized NGO (Romanian Red Cross), all of which are coordinated by the Government of Romania, the Ministry of Health and the Supreme Council of National Defense (CSAT). The organization of medical support for military units on the front, in the context of military operations, involves a complex system, structured on several levels, according to NATO standards and national regulations². This system is called **operational medical assistance**³ and aims to ensure the health, protection and life-saving of military personnel during missions, operations or exercises, both in peacetime and in situations of crisis, state of siege or war⁴.

² Law no. 95/2006 on the health reform was published in the Monitorul Oficial of Romania, Part I, no. 372 of April 28, 2006, rectified in the Monitorul Oficial of Romania, Part I, Republished on the health reform, Issuer: Parliament of Romania, published in: Monitorul Oficial no. 652, of August 28, 2015.

³ Vladimir Ionescu, „Guvernul definește și reglementează medicina de război-asistența medicală operațională”, available at <https://cursdeguvernare.ro/guvern-reglementeaza-medicina-razboi.html>, accessed on 06.10. 2025.

⁴ Nicolai Zaharov, paper "Tactica și Strategia aplicate în războaiele medice", Military Academy of the Armed Forces "Alexandru Cel Bun", Chisinau, 2023, available at <https://ro.scribd.com/document/702634131/Tactica-%C8%99i-strategia-aplicat%C4%83-in-r%C4%83-razboaiele-medice>, accessed on 08.10. 2025.

2.1 The structure and levels of medical support on the national territory today

Today, as in the past, the levels of medical support are still organized ternarily (with 3 basic units plus special, auxiliary and non-combatant ones) so the group, platoon, company, battalion, regiment, brigade, division, army corps, army, army group, and later the front and front group, there were also corresponding medical formations.

Operational medical support is organized on levels, depending on the role and echelon, each theoretically having specific capabilities. The military medical formations existing on the front are organized hierarchically and pyramidally, as are the military units they support and are subordinate to, but being integrated into the operational medicine system of the Ministry of National Defense⁵.

Thus, the frontline military medical formations, in the Romanian context, are specialized structures of the MApN that provide medical assistance in combat conditions or in Theaters of Operations (TO), adapted to NATO standards, having a double subordination, professionally to the Medical Directorate and militarily to the unit to which it is organic or has been assigned.

In the campaign there are: at subunits, **Wounded Assembly Points (PAR)**, for pre-medical first aid (self-help, mutual aid, unqualified aid and where the wounded and sick are prepared for evacuation to **the First Aid Station**⁶); at units, **the Medical Platoon or FMT ROL 1***, for qualified medical aid, led by a generalist military doctor (chief doctor subordinate to the commander); at large tactical units, **Field Hospitals or FMT ROL 2 Base or FMT ROL 2 Extended****, with surgeons for specialized medical

⁵ Ce înseamnă „asistența medicală operațională, în legea privind reforma în domeniul sănătății, available at <https://jurnalulnational.ro/ce-inseamna-asistenta-medicala-operationala-in-legea-privind-reforma-in-domeniul-sanatatii/>, accessed on 11.10. 2025.

⁶ F. T./I-3 Manualul pentru luptă al Companiei de infanterie, Bucharest, 2012, cap. XII, art. 1239.

* Role 1, are formations that provide qualified primary care and rapid evacuation and whose activity consists of providing qualified first medical aid and initial evacuation (including triage, providing qualified first aid, stabilizing vital functions, stopping bleeding, etc.), minor surgery and rapid evacuation of the wounded. It is carried out in the immediate vicinity of the injury site, therefore near the front, in combat conditions, using medical kits and appropriate means of transport. The staffing is with medical officers (generalists or general surgery) and the respective teams.

** Role 2 Basic, are formations with limited surgical capabilities, capable of performing emergency surgical interventions and ensuring the resuscitation and stabilization of the wounded, the activity consisting of specialized medical support being provided by general surgery teams, offering emergency treatment, resuscitation and life-saving surgical interventions. Includes mobile field hospitals (on road vehicles, railway trains, hospital ships, in containers or in tents or in requisitioned buildings, or mixed, as the case may be) and advanced medical units (surgical antennas), with specialized medical personnel

aid; at large operational units, **Hospitalization Bases or FMT ROL 3*****, with hospitalization wards and field hospitals with different specialties, and at the strategic level, the "**Carol Davila**" **Military Emergency Hospital in Bucharest, which coordinates FMT ROL 4******, for super-specialized medical treatment and medical recovery. The perfect correspondence of the organization of operational medicine can be observed.

In addition to these, various other auxiliary formations operate.

Medical evacuation teams (MEDEVAC) are specialized formations that transport the wounded from the front to medical units, with land ambulances (armored or unarmored) or medical aircraft, in a "to itself" and "from itself" system.

Preventive Medicine Units are Preventive Medicine Centers/Laboratories (CMP) subordinate to the DM, which ensure sanitary surveillance, prevention of infectious and contagious (transmissible) diseases and sanitary-veterinary control under campaign conditions, to maintain the health of the livestock.

The Blood Transfusion Center (CTS) of the M.Ap.N provides the necessary blood and blood components for treatments in TO, being essential for serious cases.

Voluntary Red Cross medical formations, for providing first aid and medical support on the front, organized according to the law by the National Red Cross Society, can be mobilized for providing first aid and medical support on the front, in collaboration with the Ministry of Defense.

All these structures are coordinated by the DM, together with the 11 territorial emergency military hospitals, being integrated into the National Health System. It can be seen that the organization is somewhat similar to the traditional one, but with different names and updated equipment. In the current context, the war in Ukraine has accelerated the adaptation of these

(doctors, nurses, etc.) and equipment for minor or routine surgical interventions and ensuring the stabilization of the wounded for evacuation to higher levels, if necessary. Role 2 Extended are field surgical hospitals adapted and/or transformed as needed into hospitals for various specialties: internal diseases, infectious diseases, particularly dangerous infectious diseases, toxicology, irradiated, burned, ophthalmology, etc.

*** Role 3, are formations with more complex equipment and staffing, with operating rooms, imaging, laboratories and facilities for hospitalization, capable of managing complex cases, like any fixed hospital. They provide multi-specialized medical support, provided by military field hospitals or fixed or mobile territorial hospitals or at the TO level, including complex surgery, intensive care and advanced diagnostics, and the staff includes surgeons with different specialties, anesthesiologists and other specialists, equipped with high-performance equipment.

**** Role 4, are fixed formations that provide super-specialized medical support, with super-specialized sections, capable of complete treatment, rehabilitation and long-term recovery and are carried out outside the area of operations (conflict), in modern, well-equipped and staffed medical facilities, military hospitals (equivalent to Interior Area Hospitals), existing on Romanian territory.

formations, and operational medicine in general, to NATO standards, in order to respond to the increased risks in the region⁷.

2.2. Components of organizing medical support activities

Triage is essential for prioritizing cases according to severity: critically injured, stable, dying and deceased, and medical evacuation is carried out as appropriate by land (ambulances, armored ambulances or other vehicles), air (helicopters, airplanes or MEDEVAC drones) or naval means. For multinational evacuation, cooperation with allies (NATO, EU, etc.) or neutrals (UN, Red Cross, etc.) is important. There is also a color coding of emergencies, depending on severity and vital risk.

The training of military medical personnel (doctors, nurses, etc.) is carried out unitarily, according to NATO standards for operational medicine, and the training programs include skills for triage, resuscitation, management of polytrauma and operations in difficult conditions.

Medical logistic support includes the specific activities of logistic support related to the supply and resupply of medicines, sanitary-pharmaceutical materials and medical devices, specific equipment (surgical kits, cardio-respiratory resuscitation devices and their maintenance, etc.), oxygen, blood and derivatives from Blood Transfusion Centers (CTS), individual equipment and barracks for patients, water and food, as well as others, as appropriate. Materials are requested from **the Medical Logistics Center** (CLM) and the **Medical Depots**, which store and distribute specific logistical resources.

Multinational cooperation in operations under NATO or UN command maintains national responsibility, but is integrated into allied systems, and if necessary, Romania collaborates with other states for the exchange or acquisition of medical resources and for evacuation.

2.3. Regulations and structures involved

Emergency Ordinance no. 95/2006 defines operational medical assistance as part of medical support, including force protection (preventive medicine), assessment (diagnosis), treatment (pharmacological and non-pharmacological) and medical evacuation.

The Medical Directorate (MD) of the MApN coordinates medical assistance in the Romanian Army, including on the front, oversees military hospitals (fixed and mobile), Preventive Medicine Centers and military medical formations.

⁷ Ionuș Isaia Jeican, Florin Ovidiu Botiș, Constantin Ciuce, „Activitatea chirurgicală medico-militară în timpul celui De-al Doilea Război Mondial, oglindită în revistele medicale românești ale vremii”, available at <https://www.jurnaluldechirurgie.ro/jurnal/docs>, accessed on 14.10.2025.

The Preventive Medicine Center (CMP) ensures public health, the prevention of communicable diseases and the surveillance of environmental factors in theaters of operations (TO).

The National Institute for Medical-Military Research and Development “Cantacuzino” (INCDMM) also ensures medical protection against CBRN weapons and medical-military scientific research in campaign conditions.

The Military Medical Institute trains military doctors, dentists, pharmacists and mid-level health personnel (medical non-commissioned officers and military assistants) for medical support on the front.

2.4. Examples of practical activities

External missions: military hospitals or their sections in the Persian Gulf wars (Saudi Arabia 1991, Iraq 2003), Africa (Somalia 1992, Angola 1993), Europe (Bosnia and Herzegovina EUFOR Althea, 2001), Asia (Afghanistan ISAF 2014), etc.

Internal missions: Rol 2 Otopeni hospital in the Covid-19 pandemic, in 2020-2023, etc.

Multinational military exercises: Sea Breeze (annual), CWIX25 (2025), Vigorous Warrior 2015, BIOEX (2009), etc.

Humanitarian actions: military medical teams, for Covid-19, in Italy (in 2020), collaboration with the Alabama State National Guard, USA, for free consultations (in 2025), medical assistance for the wounded in international conflicts, etc. which demonstrates the flexibility of the military medical system.

2.5. Challenges and limitations

Incomplete regulations created vulnerabilities in the regulation of operational healthcare, but the legal framework was clarified through the adoption of a GEO in 2024⁸.

Limited resources due to chronic underfunding and the reduced availability of mobile hospitals, and therefore hospital beds, will constitute constraints in large-scale operations, both in peace and war.

Working conditions in difficult situations, such as catastrophes or front-line situations, require conceptual adaptation and training for the lack of efficient infrastructure and security risks.

In conclusion, the medical support of the force at the level of military units on the front is a well-structured system, provided for in military regulations and described in specialized literature, organized in a

⁸ Ordonanța de urgență pentru completarea Legii nr. 95/2006 privind reforma în domeniul sănătății (in english: Emergency Ordinance supplementing Law No. 95/2006 on the healthcare reform), Romanian Government, available at <https://emea.search.yahoo.com/search?>, accessed on 17.10. 2025.

pyramidal manner by levels of assistance, with an emphasis on triage, first aid, rapid evacuation and specialized treatment. The medical directorate of the Ministry of National Defence, military hospitals and logistics centers have an essential role in organizing and supporting this activity, and training according to NATO standards ensures efficiency, despite some existing limitations.

3. Structure and levels of medical support outside the national territory

The Front Medical Directorate or TO is the military structure responsible for the health status and operational medical support on the front line. It organizes, coordinates and provides medical assistance to military personnel, in peacetime or wartime, during operations, exercises and missions according to NATO standards. If Romanian units are subordinated to a foreign command, and **operational medicine** is organized accordingly, under a single command.

The term **Front Medical Directorate** (FMD)/TO refers to the management of medical support responsible for ensuring the health and medical support of Romanian forces and allies in the respective area. It includes the organization, coordination and provision of medical assistance to medical personnel during operations, exercises or missions, both in peacetime and wartime, according to NATO standards⁹. In fact, only the term is new, because in military medicine there has always been field medicine, that is, medical care for troops in specific conditions of war, catastrophe or military applications. There are manuals on field surgery, hygiene and epidemiology, NBC/CBRN medical protection, etc.

The role of the Medical Directorate of the MAPN (Medical Directorate) is to supervise medical support in TO, to ensure the health and operational capacity of military personnel, through preventive, curative and rehabilitation care. The DM is also responsible for health logistics, operational medicine and military health infrastructures in TO. It coordinates the medical care of Romanian forces in operations, including NATO missions, peacekeeping operations and military applications in the country (domestic exercises). It manages the mobile medical units (field hospitals) Role 1, Role 2 and Role 3, which provide different medical care, respectively at basic, intermediate and advanced levels. For example, during the Covid-19 pandemic, a Role 2 hospital adapted for infectious diseases (actually Role 3) operated in Bucharest and another in Constanța, these being the largest and most important Romanian military garrisons. DM

⁹ Simona Carlușea, „La 20 de ani de la aderare, medicina militară românească se adaptează standardelor NATO”, Europa Liberă România, 23 febr. 2024, available at <https://romania.europalibera.org/a/medicina-militara-se-adapteaza-standardelor-nato/32830794.html>, accessed on 20.10. 2025.

ensures compliance with NATO standards for operational medicine, including the modernization of operating rooms and imaging equipment.

3.1. Specialized facilities of the DM for operational medicine

The Multidisciplinary Medical Assistance Center for Wounded Soldiers in TO (CAMMMRTO) at the Central Military Emergency University Hospital "Dr. Carol Davila", which provides specialized treatment for wounded soldiers, in Pavilion Z, with two wards with one bed each, bathroom, TV, air conditioning, medical gas consoles, vital signs monitors, nurse alarm systems, telephone lines for direct contact with medical management, etc., and a similar section in Pavilion V.

Training and education at the Military Medical Institute, in Bucharest and Târgu Mureș, for the preparation of students in medicine, dentistry, pharmacy and military medical assistance, for the army and other national security entities. The institute provides training according to TO requirements, including trauma care and emergency response.

Preventive medicine through the Center for Preventive Medicine (CMP), with public health and veterinary inspections, disease surveillance, vaccination, sanitary control of the environment (water, air, soil, food, objects) to maintain the health of troops.

3.2 Alignment with NATO standards

After Romania joined NATO, the MD adopted its operational medicine requirements, including: investments in modern medical equipment, training of operational medicine teams, participation in joint NATO exercises, such as the Steadfast Defender 2024 exercise (which tested the medical support capability for 90,000 soldiers) and the development of mobile medical units to support joint operations with NATO allies, given Romania's strategic position on the eastern flank and the war in Ukraine.

The challenges consist of the lack of specialized personnel, underfunding, low salaries and the lack of attractiveness for the military and medical profession, and the geopolitical context requires Romania to have robust medical support for potential crises and the increasing demand for well-trained medical teams, given its role in NATO, in the vicinity of Ukraine.

In 2024, the Ministry of Health proposed regulations that include operational medicine, required in support of NATO exercises and preparation for potential future conflicts, with the standardization of medical services for high-risk military activities, including war. The Ministry of Health has modernized its 11 territorial Military Hospitals, starting with 2018, strengthening the imaging capacity and surgical facilities according to operational requirements.

So the Ministry of Health has an important role in ensuring the support of Romanian military operations, with specialized and mobile facilities, preparation of geopolitical scenarios, hospital capabilities, exercises, training programs, etc.

3.3. Mobility of military medical facilities

Given that in most cases the success of treatment also depends on the urgency of application (in injuries there is a "golden interval" of a maximum of 2 hours from injury to primary treatment), medical facilities must move behind the troops and be where they are needed. Some are deployable, meaning they can be moved (tents or containers) others are mobile (on wheels, railway, naval or air). Some equipment is portable (meaning they can be moved where they are needed), and others are portable (meaning they can also function while moving).

Although the care of the wounded was much better, infectious diseases (cholera, typhus, typhoid fever, Spanish flu and others) wreaked havoc among soldiers and civilians, and Professor Cantacuzino was personally involved in combating the epidemics. As a result, King Ferdinand decided, after the war, to establish the "Dr. Cantacuzino" Institute of Serums and Vaccines.

Ambulances, specific vehicles for transporting the wounded and sick, were at first animal-drawn (adapted carts), then motorized vehicles. If in World War I it was said, as a bitter joke, that the Ambulance is a vehicle in which you get a wounded soldier and get a dead soldier off, they have progressed in terms of design, construction, equipment and use, becoming true medical shelters for the battalion. For example, the German army ambulance, Mercedes Unimog, is an off-road van, which can transport 1-2 wounded lying down, 3-4 wounded sitting up, can be used as a surgical operating room with anesthesia and intensive care, and if the patient dies, it has a bulldozer blade to bury him and returns to take care of other wounded. But, unfortunately, the model made available to the Romanian Army by the Bundeswehr in 1977 was scrapped in 2010, without being manufactured in the country (although special vehicles and surgical equipment and necessary sanitary-pharmaceutical materials were also produced) because it cost too much, and they were not imported.

Romania never had specialized **hospital ships** in active service, according to the Geneva Conventions, but it temporarily operated various military and civilian river ships for treatment and evacuation, in the world wars. In World War I, Romanian liners were transformed by the Russian ally into auxiliary cruisers with artillery, and the liner Romania functioned as a seaplane carrier in the Russian fleet, all of which had a doctor and an infirmary.

The medical trains used in the world wars were operated by the Romanian Railways (CFR) starting with 1889, with two-axle wagons (length 9.75 m) from Franco-Belge Raismes, with carriages for the wounded, a surgical block, a pharmacy, a kitchen, a dining room, warehouses, etc.

In World War II, the improved medical service had dozens of field hospitals in tents transported by wagons, trains or trucks to the front area, hospitals in the Interior Zone (in the country) including requisitioned sanatoriums for the recovery of the wounded, and sea ships used temporarily for the care and evacuation of the wounded and sick. The modernization of field medicine according to the German model led to better efficiency, an increase in the recovery of the wounded for combat, and the absence of epidemics.

The army had a historical tradition of using medical trains, especially in World War II. They were equipped with medical facilities, surgical wards with operating theatre, pharmacy, kitchen etc. and accommodation for the wounded, sick and medical personnel. There were specialized wagons: WTSR/WTSMR for the transport of wounded soldiers, lying or sitting, WTSS for the surgical hospital wards, WTSO for operating theatres, WTSZ for water tanks, WTSP for staff accommodation, WSMRF for microradiographic diagnosis¹⁰. These were manufactured in the country, in Arad, in 1933, 1935, 1970, 1983, but were later scrapped¹¹.

After the war, the army and the medical service were reorganized according to the Soviet model, as for mass armies on the offensive. Front Hospitalization Bases were established in reserve (stock), with Hospitalization Sections, with several surgical field hospitals, but versatile if needed, with Anti-Epidemic Health Center, radiology, medical laboratories, pharmacy, pharmaceutical warehouse, etc. transported by trucks, and ambulance subunits (off-road vehicles, vans and buses). Each tactical MU (brigade, division) had in stock a surgical field hospital and laboratory, (equivalent to Role 2 of the current operational medicine), and operational MU (army corps, armies) had several such field hospitals, as a reserve.

Vehicles were intended for medical trains and hospital ships, and aircraft for medical evacuation, if needed, from the army's equipment or requisitioned for the war. In 1996, the "Mobile Medical Unit" was equipped with 18 train cars, like a complete hospital on rails, including surgery, resuscitation, pharmacy, radiology, laboratory, etc.

¹⁰ Mihăiță Enache, „Istoria trenurilor sanitare CFR. De ce au dispărut”, available at <https://evenimentulistoric.ro/istoria-trenurilor-sanitare-ale-cfr-de-ce-au-disparut.html>, accessed on 24.10.2025.

¹¹ Available at <https://emea.search.yahoo.com/search?ei=UTF-8&p=forum+lokomotiv.ro>, accessed on 26.10.2025.

These were gradually taken out of use until the end of the last century and transformed into freight cars. During the Covid-19 pandemic, it was proposed to re-establish them in 2020 (by transforming some passenger cars, 1980s sleeper cars and restaurant cars) and equip them accordingly, but there was no longer any need, since serious cases were 1-2%, and the mortality rate in the general population was well below 1 per thousand. As the saying goes: "Rather than working in vain, it is better to sit in vain".

The decline of medical trains in Romania was the result of the modernization of medical evacuation methods (ambulances, aircraft, etc.). In contrast, Tunisia used medical trains during the pandemic, and France adapted high-speed trains (TGV) as medical trains when needed. But in case of war there was the vulnerability of being attacked and bombed, although they are marked with the Red Cross sign, or perhaps precisely because of that, as seen in current wars. In any case, medical trains were a vital component of Romanian field medicine in the world wars¹². It seems that armored trains (tactical, logistical and medical) are being used again, partially replacing the automobile columns on the current front in Ukraine which are vulnerable to aerial drone attack¹³.

Regarding hospital ships, which do not exist as such in Romania, destroyers had medical personnel, an infirmary with an operating room and a ward for the sick, as did frigates, corvettes and support ships (rescue ships or for divers), but since these were not designated exclusively for medical support, they were not protected in combat according to the Geneva Convention¹⁴.

For example, the US and China have dedicated hospital ships, with thousands of beds and advanced medical facilities, and tourist cruise ships can be quickly converted into hospital ships. Romania, no longer having the last liners (Bessarabia and Transylvania) that could be used as maritime hospital ships if necessary, had at its disposal river passenger ships, which could take on this role on the river and in the coastal area of the Black Sea¹⁵.

Field Hospital No. 100 (from Ploiești) which operated in the Gulf War (1991) as Romanian Field Hospital No. 50, was mixed, meaning that the triage and patient wards were in classic tents, and the surgeries,

¹² Discussion on sanitary train revival attempts during COVID-19, available at <https://clubferoviar.ro/>, accessed on 29.10. 2025.

¹³ Ionel Copcea, „Militarii ruși folosesc mijloace arhaice în războiul din Ucraina. Un tren blindat a fost semnalat în apropierea gării din Melitopol”, available at <https://remnmilitaryblog.com/2022/03/08/militarii-rusi-folosesc-mijloace-arhaice-in-razboiul-din-ucraina-un-tren-blindat-a-fost-semnalat-in-apropierea-garii-din-melitopol/>, accessed on 02.11.2025.

¹⁴ Protocol I/1977 on hospital ship protections, available at <https://emea.search.yahoo.com/search?ei=UTF8&p=lege5.ro+Protocol+I+1977+on+hospital+shipnavy.ro> Romanian Navy vessel details, accessed on 07.10. 2025.

¹⁵ Idem.

radiology, laboratory, pharmacy and others were on special vehicles. The medical and non-medical staff lived in camps with camping cabins or sleeping containers provided by the host country (Saudi Arabia). This, as well as the medical/hospital trains or hospital ships, functioned as the equivalent of the current Role 2 medical formations in the organization of operational medicine, although the equipment and staffing were as for Role 3. For comparison with other field hospitals in the Gulf War, the US Navy Hospital was entirely in containers (shipborne), the British and Norwegian Hospitals were in modern tents with CBRN protection, and the French Hospital was on vehicles, everything brought by ships and planes and positioned by vehicles. It can be seen that the alignment with NATO standards (provided for in the STANAG Med series) does not mean standardization, but creative adaptation and optimization, for a common purpose.

Sanitary tactics and operational medicine must be reviewed, conceptually and practically, to adapt forces, means and procedures, considering the statements of the most important American, British, French, German and Polish political leaders of the moment, regarding the war in Ukraine, regarding the sending of troops, weapons and even the bombing of Moscow (Lindsey Graham, US senator), and of the most important military commander in Europe, General Christopher Donahue, Commander of the United States Army Europe and Africa (USAREUR-AF) of a lightning attack on the **Line of Deterrence on NATO's eastern flank** and the conquest of the Russian enclave of Kaliningrad, so the risk of regional war is real, and it can expand into a world war, possibly nuclear¹⁶.

Since 1877, when the first military field hospital of the Romanian Army was established and operated under the command of Prof. Dr. Carol Davila, until today, field/operational medicine has made important progress, and continues to try to modernize itself to align with NATO standards, to be effective in the conditions of the modern battlefield, in the future war in which it will participate. *Si vis pacem, parabellum!*

Conclusions

Operational medicine¹⁷ is essential for the support of the operational force in the campaign, being the very essence of military medicine. It integrates tactics and health organization with emergency and disaster

¹⁶ Drago Bosnici, "Ignorance and Military Fantasy: General Donahue's Proposed US-NATO blitzkrieg Assault on Russia's Kaliningrade Enclave. A Miscalculation Could Lead to a Thermonuclear Catastrophe, Mondialisation.ca, 22.07.2025, available at <https://emea.search.yahoo.com/search>, accessed on 14.11. 2025.

¹⁷ Olga Borșcevschi, „Ce este medicina operațională”, *Gândul*, 22.02.2024, available at <https://www.gandul.ro/diverse/o-vulnerabilitate-majora-guvernul-reglementeaza-medicinaderazboi20154667#:~:text=Domeniul%20asisten%C8%9Bei medicale>, accessed on 18.11. 2025.

medicine, and is useful to the National Health System, both in peacetime and wartime.

Within the Alliances, it is necessary to comply with common standards, namely NATO (STANAG Med) for interoperability and efficiency, investing and adapting the organization, equipment and terminology.

The organizational principles are and have remained the same, but the equipment, staffing and functioning of medical forces optimize operational medicine, favoring the maintenance of combat capacity, the recovery of victims and the decrease in mortality, thus contributing to achieving victory on the battlefield.

Medical tactics are continuously evolving, depending on needs and possibilities, in line with continuous military reorganization and medical progress, and the previous experience of the Romanian Army's military service must be capitalized on, for the present and future, in adapting modernizations and interoperability with our allies, in order to prevent recurrence and save the lives of combatants in battle; thus, historical references would no longer be simple history but the basis of lessons learned from past experience for the military field medical service.



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