Preface. In July 2025, U.S. Army Europe and Africa (USAREUR-AF) and the U.S. Army Center for Lessons Learned (CALL) published *How Russia Fights: a Compendium of Troika Observations on Russia's Special Military Operation (SMO), First Edition.* That compendium summarized and categorized Russian military performance in the SMO by U.S Army Warfighting Functions, drawing from over 200 observation reports from 24 February 2022 through 30 June 2024. The Troika Team is busy working on *Troika Compendium Volume II*, which covers 1 July 2024 – 31 December 2025. *Volume II* will be released in spring 2026. However, we do not want warfighters to have to wait for the final volume, so we are releasing individual chapters as they are completed.

As always with Troika Observations, the information that follows was gathered from Russian and Ukrainian open sources of information. The Troika Team makes no implied guarantee regarding the accuracy or reliability of the sources.

Troika Compendium II
Chapter 5: Sustainment – Medical

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1.1 Introduction/What's new in Compendium II. The Russian Armed Forces (RF AF) began their Special Military Operation (SMO) in Ukraine in 2022 expecting a short, easy

campaign with few casualties. They did not prioritize medical support. As a result, the RF AF were woefully unprepared for the high casualties they suffered. If they were lucky, RF AF wounded were able to receive treatment at a Ukrainian civilian hospital on occupied territory. Most were not so lucky. The RF AF did not talk in detail about medical support in the early months and years of the SMO, so the Troika did not either. In the sustainment chapter of the Troika Compendium, first edition, the Troika discussed a few Russian military medical logistic-related adaptations, including improvements in Russian soldiers' Individual First Aid Kit (IFAKs) and short discussions on Russian medical trains and field ambulances operating in the SMO zone.

However, as the Troika has frequently noted, the RF AF is a thinking, learning, and adaptive organization. This sustainment chapter update will take a closer look at Russian adaptations to individual and unit medical care on the battlefield in Ukraine against changes in the operational environment, including the increasing proliferation of UAV attacks on the battlefield. These include adaptations in medical equipping, training, and tactics, techniques and procedures (TTPs) based on 3+ years of experience in Ukraine. It will also examine the role of Russian military medical commissions used to evaluate and document wounds and injuries Russian soldiers sustain in the SMO and the compensation (or lack thereof) provided by the Russian government.

The Russian military medical academic community has conducted numerous studies of soldiers wounded in action (WIA) in the SMO and provided recommendations to the Russian Ministry of Defense (MOD) and Armed Forces based on their findings. Information from some of these reports are included to illustrate the medical challenges in the current battlefield environment and the adaptations that have resulted from these challenges. The Kirov Military Medical Academy in Saint Petersburg, Russia is the primary training hub and lessons learned organization for Russian military medical personnel. We have also included anecdotal accounts from RF AF medics in the field.

The time period covered in this update is from July 2024 to December 2025, however a few relevant Troika observations and insights from earlier in 2024 were also included for context. All monetary amounts in rubles listed were converted to U.S. dollars at September 2025 conversion rates.

1.2 Russian cultural perspectives on Russian Military Personnel – just another class of supply.

A discussion of Russian medical adaptations in the SMO cannot be conducted without a perspective on how Russian soldiers are typically viewed by their leadership. For much of its history, Russia has had a larger population than its opponents. Consequently, Russian political and military leaders have viewed its military personnel as an expendable class of supply. Just as ammunition, fuel, and spare parts are expended in combat and need replenishing, so it is with personnel. Russian soldiers will be expended in combat and will need replacing. As Russia has more people than Ukraine, this is a competitive advantage. While Russian families mourn their loved ones killed in action (KIA) and WIA on an individual level, at the national level, high casualties are normal and not a cause for concern. Countless casualty-producing Russian "meat

wave" assaults in the SMO are a further testament to the notion of a Russian soldier being merely a class of supply.

Military medical slang. A Russian soldier KIA is called a cargo "200" (*груз-200*) while a WIA is called a cargo "300" (*груз-300*). Early in the SMO, some RF AF commanders told their soldiers that there were only three ways to return to Russia: "200", "300" or "10 to 15." The third way refers to the prison sentence for soldiers who refuse to fight, also known as "500" or "*refuseniki*" (отказники)

To that end, the Troika has seen multiple instances in the SMO where Russian soldiers suffering from shrapnel wounds, contusions, shellshock or other injuries (i.e. – 300s") are evacuated from the battlefield only to promptly be sent back forward to fight without medical evaluation or treatment. In Russian military jargon, these soldiers are often called *Uralniki.* This term refers to WIA soldiers rounded up and hauled back to the fight in a *Ural* cargo truck (a common model of military cargo truck used by the RF AF, similar to an old U.S. Army 5-ton). The Troika has also seen numerous videos of RF AF WIA that had been sent back further to rear areas based on medical evaluations also rounded up again and taken back to the fight.

The extreme version – Russian soldiers fighting on crutches and canes. There is great pressure on RF AF WIA to return to fighting in the SMO well before they are fully rehabilitated. The Troika has seen numerous videos and stories of Russian WIA on crutches brought back to forward positions and even forced into attacks. Ukrainian Armed Forces (UAF) soldiers also reported incidents of RF GF soldiers on crutches in the assault.

In mid-January 2025, RF MOD Military Police personnel were caught on video beating and tazing two RF GF WIA at their home station in the Tuva Republic (south of Siberia) to force them to return to their brigade in Ukraine immediately. One of the RF GF WIAs was using a cane to walk.[1]

This pressure continued throughout the winter and spring of 2025. In some cases, the soldiers on crutches were also amputees. In one February 2025 video from a snowy fighting position, a RF GF amputee who was missing his right leg below the knee had returned from the hospital and was manning his position on crutches. The RF amputee explained the difficulty of moving around between his snow-covered, ground-level position and his squad's underground living space but did not complain. Several UAF tactical Unmanned Aerial Vehicle (UAV) videos similarly showed RF soldiers with crutches by their side who were either KIA or WIA again in combat. Some of these WIA on crutches appeared to have been in the assault because they were far away from any visible Russian positions.

In one UAF video, two captured Russian Federation Ground Forces (RF GF) soldiers from the RF GF 132nd Guards Motorized Rifle Brigade / 51st Combined Arms Army (CAA), talked about the transfer of RF GF 103rd Motorized Rifle Regiment (MRR) and 163rd Tank Regiment (TR) / 150th Motorized Rifle Division (MRD) / 8th Guards CAA to reinforce their brigade after the 132nd Guards lost most of its personnel during their assault on Toretsk. One Russian soldier remarked, "to assemble a group of walkers is already a problem, out of six personnel, it's good if at least two can move normally. The rest are dragged along."[2] A late May 2025 video showed three RF GF soldiers on

crutches who were refusing impressment into an upcoming assault. All three were at the frontlines and were armed with AK-12s and wearing helmets and body armor, but all three were on crutches.[3]

The Russian system of documenting all these WIA. Russian military medical commissions, described later in this chapter, are used to determine the number and extent of Russian soldiers' wounds and injuries sustained in combat. Like many other aspects of the Russian military, the system is rife with corruption. This includes payouts and other compensation to commanders and military medical commission personnel to receive the desired result. This can determine whether a Russian WIA makes it to the rear for a medical evaluation and/or treatment and even receives compensation for wounds received or gets a quick trip back to the fight in a cargo truck.

1.3 The impact of UAV attacks.

The numbers tell the story. It is impossible to describe Russian medical adaptations on the battlefield in Ukraine without looking at the effects that UAV attacks have had on casualty numbers, types of wounds and challenges of CASEVAC and medical care. The numbers from the following two 2025 studies (one Russian and one Ukrainian) clearly show the impact UAVs have had on medical care for both sides and how the Russians (and Ukrainians) have been adapting medical equipping, training, evacuation and treatment to this new reality.

A March 2025 Russian military medical journal study. This study discussed the impact of UAV attacks in combat operations in Ukraine. The study concluded that because the UAF is using UAVs as their main means of fires, the type of wounds that Russian soldiers are receiving now has changed significantly from earlier in the SMO. The study also concluded that UAV attacks on CASEVAC teams have created a monumental challenge in transporting the wounded to receive urgent medical care.

Wound type and severity. The study looked at the incoming flow of wounded and injured Russian soldiers through the Russian Forward Medical Groups (*Передовая медицинская группа*) of several RF AF separate medical battalions. The study was conducted during the winter season and the predominant means of UAF fires during the study period were small attack FPV UAVs. Overall, compared to previous Russian military medical studies conducted during the SMO, there was a decrease in the proportion of severe and extremely severe injuries by 15 percent and an increase in the frequency of light injuries by 50 percent. Shrapnel wounds dominated the study at 67 percent while bullet wounds came in last at two percent. Injuries to limbs comprised 77 percent, with severe limb injuries (characterized by extensive soft tissue damage, ruptures, and destruction of segments, and (or) fractures of long tubular bones) dropped to 10 percent from 60 percent. The frequency of penetrating chest wounds was 18 percent, down from 75 percent. Most chest wounds were not severe (bruises or closed rib fractures without lung damage). Damage to the brain occurred in 21 percent of head wounds, with most head wounds primarily damaging the face. Surgical interventions

and manipulations of varying complexity were required to be performed on 94.9 percent of the wounded, with the bulk of the surgical operations (65 percent) conducted at much later stages of the evacuation.

Wear your helmet and body armor. Besides the more shrapnel dominating wounds caused by UAV attacks, the study partly associated the significant reduction in penetrating chest wounds and severe head wounds with the likelihood that Russian soldiers would be more inclined to wear helmets and body armor in the winter. The Troika has also noticed how the quality and availability of helmets and body armor for Russian soldiers improved significantly over the course of the SMO and Russian soldiers are also now seen equipped with additional body armor accessories to cover the groin and neck areas.[4]

RF AF UAVs as a percentage of UAF WIA ("300s") – a 2025 snapshot. A one-month rollup of UAF wounded and injured soldiers recorded by a UAF medical point near Pokrovsk, Ukraine in spring 2025 showed that UAVs produced **60.5 percent** of WIA. Of that percentage, 48.9 percent were caused by kamikaze FPV UAVs. The remaining 11.6 percent were from UAVs dropping munitions.

Locations and causes. Of the 48.9 percent of kamikaze FPV UAV attacks, those occurring along roads 3 to 20 km from the frontlines contributed to 65 percent of the WIA with the remaining 35 percent coming from attacks against UAF fighting positions. This is consistent with previous Troika reporting on RF AF units focusing on disrupting critical UAF MSRs and lines of communication and attack videos regularly posted by the RF MOD's *Rubicon Center for Advanced Unmanned Technologies*, which provides UAV support to RF groups of forces.

The remaining 39.5 percent of UAF WIA recorded by the medical point were caused by artillery - 13.6 percent, shooting – 11.5 percent, mines – 6.2 percent, UMPK strikes – 3.7 percent, Lancets – 3.3 percent, and accidents – 1.2 percent.

In addition to being the most common, attacks by RF AF FPV UAVs occurred fairly evenly throughout the 24-hour period over the course of the month, disrupting UAF units' ability to resupply, reorganize or relocate. WIA (by percentage) by time of day and reason over the one-month period are depicted below.[5]

	0700 - 2000	2000 - 2300	2300 - 0400	0400 - 0700
FPV UAV	11.5	11.9	11.1	14.4
Artillery	9.1	1.2	0.4	2.9
Shooting	11.5			
Mines	2.1	2.5	0.8	0.8
UAV drops	5.8	2.5	2.5	0.8
UMPK strikes	1.2			2.5
Lancets	3.3			
Accidents			1.2	

UAVs terrorize CASEVAC operations. In addition to being the primary cause of WIA in Ukraine, both sides continue to use UAVs to specifically target CASEVAC teams.

The March 2025 Russian military medical study validated the CASEVAC challenges, concluding that the overall average time to deliver wounded or injured Russian soldiers to Qualified Surgical Help (*Квалифицированная хирургическая помощь*) was 14.5 hours, an increase of 10 hours from a Russian medical study conducted previously in the SMO. Those soldiers with severe or extremely severe wounds were evacuated quicker, however only 11 percent of those soldiers were delivered to qualified medical care within the recommended time (up to 2 hours from the moment of receiving the wound). This was down from 35 percent from a study conducted previously in the SMO.[6] Because of the UAV threat, in many cases, the WIA was simply left on the battlefield and died of the wounds, the death of the WIA was expedited by UAV dropped munitions or evacuation was attempted at night to avoid being targeted.

1.4 Individual Medical Equipping Adaptations.

Newer and better RF AF IFAKs. IFAKs have improved significantly over the 3+ years of the SMO with an 8th variant released in 2024. The RF MOD requires that RF AF soldiers carry at least the 5th variant or equivalent of the IFAK, which was the first to include a minimum of two tourniquets, including one similar in type to the U.S. combat application tourniquet (CAT).
NOTE: The Russians use the word tourniquet (турникет) typically to refer to a CAT type tourniquet. The second (and sometimes third) tourniquet in a Russian IFAK is usually a band type of tourniquet made of rubber or silicone and is referred to as a zhgyt. (жгут)
From an initial IFAK in 2022 containing only three items (tourniquet, bandage and syringe), IFAK contents have now expanded to include at a minimum the following items, according to a RF MOD 2024 first aid manual:
1. 2 x tourniquets (one CAT type)
2. Hemostatic and pressure bandages
3. Oral and Nasopharyngeal airway tubes
4. Occlusive dressing
5. Decompression needle
6. Rescue blanket (hypothermia)
7. Syringe (for pain killers)
8. Special bandage for eye wounds
9. Burn dressing
10. Soft splint
11. Tactical (Medical) scissors
12. Elastic (“Ace” type bandage) and regular bandages

The Troika has seen evidence in RF AF soldier videos and photos from the SMO that the newer IFAKs are making their way to units, however Russian soldiers are also buying their own commercially produced IFAKs online, and volunteer groups in Russia are providing improved IFAKs to Russian soldiers in Ukraine that closely resemble the MOD versions and in some cases contain better quality items. Official MOD-procured

IFAKs are also seen for sale online, with options to buy specific components or the entire IFAK.[7]

More tourniquets. The number of tourniquets recommended for Russian soldiers in the SMO has gone from one in 2022 to four in 2025, providing one tourniquet for each limb. With the overwhelming dominance of shrapnel wounds occurring in the SMO zone, especially from UAVs, tourniquets, like bandages, are being used up in large quantities. The Troika has seen numerous videos of RF AF soldiers with more than one tourniquet applied, including a video of a Russian WIA in Ukraine with three applied tourniquets, one on each leg and an additional one applied to one arm. Most of the additional tourniquets used on Russian soldiers are the rubber or silicone *zhgyt* type. The four-tourniquet recommendation is also based on the understanding that because of constant UAV observation and attacks, evacuation of WIA on the battlefield may be in minutes or several days, and Russian soldiers are told that they should plan on self-evacuating whenever possible. Medical experts also advise Russian soldiers deploying to the SMO to use part of their contract bonus pay to buy additional tourniquets to augment any issued and not to skimp on these purchases.[8]

Tourniquet failure - premature wear on tourniquets in combat that have been used in training. With the increasing use of tourniquets and associated training with them, Russian tourniquet failure has become an issue. According to data from the RF MOD Main Military Medical Directorate in 2023, there was a 9 percent failure rate in effective bleeding control in the SMO zone caused by using tourniquets previously used for training. Tests by the Russian Scientific Center of Military Medicine showed that after 40 to 50 training applications, Velcro lost up to 50 percent of its adhesive properties, and the straps were deformed, reducing compression pressure by 30 percent. According to statistics collected among RF AF units, 65 percent of tourniquets used for both training and combat purposes failed after 30 cycles of use, while new certified and unused tourniquets demonstrated reliability in 97 percent of cases. Wear factors included not only material degradation from use, but also the impact of external factors. In battlefield conditions in the SMO, tourniquets stored in RF AF IFAKs or attached to body armor after being used in training were exposed to environmental effects from sand, dirt, moisture and temperature changes, which accelerated their wear. A study by the Russian Kirov Military Medical Academy in 2023 found that a combination of mechanical stress and the aggressive SMO environment reduced the strength of tourniquet straps by 40 percent after just 20 cycles of use.

RF MOD requirements for separating tourniquets into “training” and “combat." A RF MOD medical regulation published in 2024 now requires separation of tourniquets into "training" and "combat", even if they are initially identical. The regulation also recommends marking training tourniquets with indelible paint and replacing them after 25 cycles of use. The introduction of such a system in the RF AF in 2023 reportedly reduced the number of tourniquet failures by 22 percent. In units that introduced the

separation of tourniquets, mortality from blood loss decreased by 15 percent compared to units that did not separate tourniquets.

Needless to say, based on variety of Russian military culture factors and RF MOD supply and corruption issues, the Troika is more than a bit skeptical that the RF MOD's 2024 requirements on tourniquet separation are being fully implemented in RF AF units across the battlespace in Ukraine.[9]

1.5 Individual tactical medical training adaptations and improvements.

***"The situation was not good"* -- a 2024 RF CASEVAC situation in Zaporizhzhia direction paraphrased from a RF AF medic's comments.** About 80 percent of the evacuated RF WIA suffered shrapnel wounds from UAV, artillery and mortar fire, anti-personnel mines and tripwires. 80 percent of those evacuated, at best, had two Esmarch tourniquets (specialized rolled bandage made of rubber) which is why they were still bleeding and deteriorated to become serious WIA. Most evacuees will likely end up with limb amputations. Sometimes individual tourniquets are attached to body armor or even to a weapon in "a million knots." Ninety percent of Russian soldiers do not know how to use first aid kits, apply a bandage, or pack wounds. This medic observed only two cases when a soldier provided himself with high-quality first aid.

According to this RF medic, tactical medicine classes are regularly held in various training locations. Instructors also visit units. He added that, "To everyone that complains that bad first aid kits are issued or who use other such excuses, there is no excuse for lack of preparation. Don't repeat the mistakes of your comrades. Take care of yourself, and don't endanger the lives of others because of your indifference and stupidity." [10]

Overall tactical medicine training is improving. Russian soldiers are increasingly receiving more and better-quality tactical medicine training, often via mobile training teams that travel to unit locations in the SMO zone to conduct the training. Much of the Russian soldier first aid training that the Troika has seen more recently in videos posted online centers on two skills, **tourniquets** and **evacuation**. Soldiers are trained on fast and correct tourniquet self-application and application on another soldier, often while simulating various battlefield conditions such as low visibility, muddy or wet conditions and loud sounds. Various casualty evacuation methods are also taught.

Lessons learned and recommendations on various tactical medicine topics are also posted on pro-Russian Telegram channels to assist soldiers and are often accompanied by graphic videos or photos showing various types of wounds and injuries sustained by Russian and Ukrainian soldiers in Ukraine along with best (and worst) practices for dealing with them. Examples at the soldier level in addition to tourniquet application are dealing with trench foot and other ailments associated with extended exposure to weather conditions.

Russian soldier proficiency with tourniquets is increasing through training. A study by the RF MOD Main Military Medical Directorate in 2023 showed that untrained RF AF personnel in the SMO zone spent an average of 4 to 6 minutes realizing the need to apply a tourniquet, while 40 percent did not make any attempts at all due to

panic or disorientation. In such conditions, the mortality rate from arterial bleeding reached 70 percent in the first 10 minutes after injury.

According to a report by the Russian Scientific Center of Military Medicine in 2024, the average time for a RF AF soldier applying a tourniquet who completed a 16-hour tourniquet training program was reduced to between 45 and 60 seconds and the accuracy of execution increased to 85 percent. The report cited the use of muscle memory and practiced skills by RF AF soldiers in stressful situations rather than rational thinking as the key to the improvement. Another study concluded that it required 8 to 12 hours of intensive tourniquet training, including in extreme scenarios (night or other limited visibility situations, rain, loud sounds, etc.) to develop a stable skill in application. This training needed to focus not only the mechanics of tourniquet application, but also on assessing the type of bleeding and choosing the correct position of the tourniquet. This was also supported by a study by the Russian Kirov Military Medical Academy in 2023 that concluded that after 10 hours of training, the accuracy of applying a tourniquet to the thigh in conditions of limited visibility increased from 35 percent to 90 percent. However, without additional monthly 2-hour sessions to maintain the skillset, the efficiency of tourniquet application decreased by 20 percent every three months.

Care under fire – Only apply the tourniquet. According to one medical-focused Telegram channel that advises Russian military units on tactical medicine, soldier medical care under fire should be limited to properly applying a tourniquet as high as possible on the limb and evacuating. Russian soldiers should not try to apply pressure bandages or attempt to tamponade wounds. These efforts require time, which turns the wounded soldier and soldier providing the assistance into easy targets for UAVs. Every extra minute under fire spent attempting to apply a complex dressing or an ineffective tamponade instead of a quick tourniquet reduces the chances of survival. The principle of “stop the bleeding, open the airway only if critical, and move immediately to cover or extrication point” is fundamental in the red zone (under fire). Pressure dressings and tamponade are to be first used when the casualty and responder are in the “yellow zone” (under cover, out of direct line of sight and direct enemy fire) where these techniques can be used to control bleeding that has not been controlled by a tourniquet, or for managing venous/capillary bleeding. The red, yellow and green zones of Russian tactical medicine care are described later in this chapter.[11]

Other advice to Russian soldiers – Start self-applying tourniquets immediately. As mentioned previously, Russian soldiers are advised that evacuation can come in minutes or as long as several days depending on the situation. Soldiers should not waste time and start self-care immediately. The soldier also needs to know how to correctly apply tourniquets based on the wound type and location. Russian medical experts compiled the following list of recommended self-care actions.

1) The main cause of death is blood loss so grab a tourniquet. If the wound is arterial, you have 30 - 40 seconds, then you will start to weaken, lose consciousness, and "shut down."

2) Wounds to the thigh – do not press the wound with your palm. Try to immediately get a tourniquet on the wound. If you press the femoral artery, do it only with a weapon magazine – between the legs or lean sideways on the rifle.

3) When the brachial artery on the inner side of the shoulder is damaged, press the wound with your own weight or put a canteen, weapon magazine, or just a fist under your armpit. With your healthy hand, get a tourniquet.

4) When the neck is wounded, press the wound with a piece of cloth, scarf, or *shemagh* (longer scarf like a keffiyeh), then apply a pressure bandage.

5) When a shoulder or thigh is wounded, apply the tourniquet to the upper third.

6) When an arm is wounded, place one end of the tourniquet in your teeth and wind the tourniquet with your healthy hand.

7) When a leg is wounded, pull the knee up by grabbing your pants.

8) If you have stopped the bleeding and can move, head to cover. The shortest path is not always the best. If there are smoke grenades available and/or terrain folds, use them.

9) To survive, try to attract as little attention to yourself as possible. You can shoot only in extreme cases. But in this case, know that the enemy will notice you and shoot back. And if you are wounded, it will be very difficult to get out of the line-of-fire.

10) And in all cases, keep your weapon ready for immediate use.[12]

An example of the delayed-evacuation environment: Russian soldier wound self-management. In a September 2025 Telegram post from medical experts who advise the RF military, a RF AF WIA with multiple bullet and fragmentation wounds to his torso and limbs was unable to be evacuated from the battlefield for five days because of the situation on the ground. In the end, the soldier evacuated himself, walking or crawling over the five days to a Russian medical position in a dugout. In the meantime, RF AF medics dropped medical kits and specific instructions to the soldier by UAVs to help him treat his own wounds. This included injecting himself with antibiotics (Ceftriaxone), cleaning wounds with hydrogen peroxide, treating the wounds with antibacterial agents (Chlorhexidine and Betadine), changing dressings, and taking painkillers. When the Russian WIA finally arrived at the medical dugout, the medics were surprised to see how well the soldier followed the treatment instructions. They continued treating him and successfully evacuated the WIA by motorcycle. The Telegram post included photos of the WIA and his various wounds along with photos of the medical kit components and instructions sent to him by UAV.

Recommendations from the medical experts based on this case included: 1) Russian soldier tactical medicine training should include some understanding and skills in wound self-management: and 2) Medical units should possess UAV operation skills to ensure delivery of medicines to the wounded, conduct medical reconnaissance, and search for wounded on the battlefield and its surroundings.[13]

1.6 Improvements in tactical medical care provided by Russian military medical personnel.

Overall. There have been many openly shared RF AF medical lessons learned especially over the past two years of the SMO. The first year of the SMO was a medical disaster for the RF AF. In 2022 and 2023, uncaring, understaffed, and poorly equipped and unsanitary RF AF triage and medical care areas were regularly shown in Russian soldier videos which served as social media testaments to just how bad the medical

care was for RF AF soldiers. In 2024 and 2025, more recent raw RF AF medical videos showed grave injuries from the SMO as well as how continuously busy these hospitals were, but they also showed that the RF AF forward hospitals are far more professionally run and staffed, much more sanitary, and much better equipped than they were earlier. In 2023 – 2024, Ukrainians liked to repost RF AF videos of field hospitals probably because they show how busy Russian hospitals were and how terrible Russian soldiers' wounds were. The Troika, however, was usually impressed by the improvements to Russian military medical care. These videos, which were normally posted with no commentary, helped tell what was happening immediately behind Russian front lines.[14]

One of the bases for changes – implementing the "stoplight" system of first aid. With the overwhelming use of UAVs on the battlefield in Ukraine and the targeting of casualty evacuation teams and wounded soldiers by both sides, time to render first aid under fire has been significantly reduced.

The RF MOD 2024 first aid manual established three zones of tactical medicine care and the medical actions that should be taken in each zone. Various online lessons also use these zones as a reference when providing lessons and tips to Russian soldiers and unit medical personnel.

1. Red zone - Under fire in active offensive or defensive operations
2. Yellow zone - In a shelter (while still subject to enemy fires, artillery etc.)
3. Green zone – Safety (at a safe location away from the front)

The manual also emphasizes that the zones can change quickly, especially from yellow to red.

Zones and associated medical tasks.

1. **Red zone** – Suppress enemy fire and maintain security. Conduct self-aid and help fellow soldiers if they are unable to conduct self-aid. Medical actions should be limited to stopping the effect of critical damage = applying a tourniquet. Tourniquet should be applied high and tight over the clothes and completed in 60 seconds or less. If one tourniquet is not enough, apply a second one higher and tighter. Do not record time on the tourniquet. Get wounded to shelter and report to the commander. Do not approach wounded while under fire and do not allow the group medic to be wounded. Note location of wounded that were not able to be evacuated.
2. **Yellow zone** – Make a general examination of the wounded and sort by criticality. The four categories are: 1. Urgent, direct threat to life, 2. Urgent, serious injuries, but no threat to life, 3. Non-urgent, ambulatory and 4. Too far gone/hopeless (*Безнадежные*) Category 1 = massive bleeding, airway obstructions, penetrating chest wounds. Conversely, category 4 = no pulse or breathing, penetrating head wound, open pelvic wound with massive bleeding. The wounded are to be evacuated according to the same criticality categories. Provide medical assistance according to the treatment algorithm with the acronym КУЛАК-БАРИН (KULAK BARIN). Annotate medical actions taken. *NOTE: This is essentially the Russian version of the MARCH-PAWS mnemonic of prioritizing treatment. KULAK represents prime life threats (bleeding, suffocation, lungs, arteries and veins, and hypothermia) and BARIN represents non-prime life threats (pain, antibiotics, wounds, immobilization and stretchers)*

3. **Green zone** – Conduct detailed examination of the wounded and ensure medical documentation is completed. Look for previously undetected injuries and correct improper medical treatment, prepare for further evacuation.[15]

More and better medical training for Russian medical personnel. As with tactical medicine training for Russian soldiers, there are more mobile training teams conducting training at unit locations for medical personnel. Lessons learned and recommendations on various tactical medicine topics are also posted on pro-Russian Telegram channels to assist unit medics and even military doctors operating in the SMO. For unit medics, there are lessons such as the proper application of pressure bandages, finding veins at night while maintaining light discipline, the use of various antibiotics and pain killers and dealing with various shrapnel wounds (primarily from FPV UAVs). There are also discussions and tips on dealing surgically with more severe situations such as penetrating head wounds, open chest wounds and limb amputations. One Telegram channel that posts these types of discussions, lessons, best practices and tips online, also conducts mobile medical training courses, and continues to assemble and ship fully equipped medical rucksacks to Russian unit medics in Ukraine paid for by donations from Russian citizens.[16]

An example – night training impact of RF AF medical personnel performance in the SMO. Because of the persistent presence of UAVs on the battlefield around the clock, much of the basic lifesaving and evacuation procedures are done at night to have a better chance of success against hunting drones.

In 2025, medical experts who advise the RF AF posted findings and recommendations for RF AF medical personnel to improve their performance in combat conditions at night based on combat experiences in the SMO. According to these experts, medical personnel accustomed to working under artificial light lose up to 40 percent of the speed of performing manipulations in the field at night. Night training is crucial as it forms proprioceptive memory - the ability to perform complex actions (such as applying a tourniquet to the thigh or installing an airway) without visual control. In conditions where every minute of delay in assistance increases mortality by 7 to 10 percent, this training is critical.

Cognitive load at night. According to Russian medical experts, this is a key factor for efficiency at night as circadian rhythms reduce reaction speed by 20 to 30 percent and stress factors (cold, fatigue) greatly increase disorientation. They cited data from the SMO zone showing that up to 60 percent of incorrectly applied tourniquets in the dark were associated with unpracticed searching for a wound by touch. After the introduction of mandatory night training modules, this number dropped to 12 percent.

Overcoming psychological barriers. The medical experts cited this as a main advantage of night training so that medical personnel can practice procedures in conditions close to extreme fatigue to form stress-resistant neural connections. They cited the time between 0300 hours and 0500 hours as the peak of circadian decline. Field observations from the Kherson operational area in 2023 showed that RF AF

combat medics with night training experience made 70 percent fewer mistakes when working under artillery fire and their actions remained algorithmic (effective) even with a pulse of 140 - 160 bpm (beats per minute).

Other results from medical training at night. After three months of regular night training, the time to evacuate a WIA from a shelling zone in the dark was reduced from 14 to 6 minutes. Recognition of asphyxia by the sound of breathing in a noisy environment reached 89 percent accuracy in "night" groups versus 54 percent in the rest. This data came from a study by the Kirov Military Medical Academy.

The key to effectiveness: Night training methodology. According to the experts, chaotic night exercises without a gradual increase in the complication of tasks produced the opposite effect by reinforcing incorrect patterns. Instead, the night training should build on a model of increasing complication which includes:

(1) The initial night training stage conducted in the moonlight (to practice orientation).

(2) Working with IR devices and tactile lights (limited visibility conditions).

(3) Working in complete darkness with interference factors (smoke, rain, sound disorientation).

(4) Conducting intense physical training before practicing manipulations.[17]

Recruiting for medical specialists in RF AF formations remains strong. Russian medical recruiting continues to recruit heavily, seeking a wide range of medical specialties from paramedics to surgeons with a maximum recruiting age of 50 to 60 years old. There is a heavy emphasis on recruiting traumatologists, orthopedists, neurosurgeons, cardiovascular surgeons, and maxillofacial surgeons.

The 442nd Military Clinical Hospital in Saint Petersburg serves as a medical volunteer detachment headquarters for processing new volunteer medical personnel. From there, medical personnel undergo training at the Kirov Military Medical Academy in Saint Petersburg for military field surgery and therapy, tactical medicine, and general military disciplines. The contract period is six months. Starting pay at the time of this writing for mid-level medical personnel (paramedics, nurses, etc.) was from 50 K rubles (~$600) per month while in Saint Petersburg to 220k rubles (~$2,800) per month in the SMO zone. Those salaries increased to 60 K rubles (~$720) per month and 240 K rubles (~$2,882) per month respectively for doctors.[18]

A specific 2025 medical unit example – recruitment efforts of the RF GF 42nd Separate Medical Battalion / 127th MRD / 5th GCAA / Eastern Military District. One of the more popular Russian medical milbloggers highlighted the 2025 recruitment efforts of the RF GF 42nd Separate Medical Battalion. The milblogger vouched for the unit, claiming he knew the members personally and could recommend the unit for Russian men who wanted to sign a contract with the MOD in the medical field. The unit is from Ussuriysk (98 km north of Vladivostock) in the Eastern Military District and was featured in a March 2025 *"Russia 24"* documentary called "Hospital on the Edge of War."

Personnel needed. At the time of the recruiting announcement, the unit was recruiting men only up to age 55 for the following positions with work experience desired *but not mandatory*:

(1) General practitioners (Therapists)
(2) Anesthesiologists-resuscitators
(3) Dermatologist
(4) Traumatologist
(5) Psychiatrist
(6) Nurses – Anesthetists/ward/post-op nurses
(7) Paramedics
(8) Sanitary instructor/sanitary worker

Benefits for signing a contract. The salary was from 210,000 rubles (~$2,525) per month in the SMO zone with additional bonuses for length of service and other categories. While in a rear deployment area or back in Ussuriysk, the salary dropped to 50,000 to 90,000 rubles (~$601 to $1,082) per month depending on the soldier's position. Doctors had the opportunity to receive the lowest officer rank (junior lieutenant). All medical personnel were able to gain combat veteran status with credible service in the SMO. There were also further education possibilities at the Kirov Military Medical Academy in Saint Petersburg. Military housing was provided in Ussuriysk for up to 25,000 rubles ($300) of rent and there was a possibility for a military mortgage on preferential terms. Medical *kontraktniki* had the possibility to receive a pension after 13 calendar-years of service, calculated at 1.5 years for every 1 year of service while serving in Ussuriysk, and 3 years for every 1 year of service while serving in the SMO zone.[19]

1.7 The challenges of CASEVAC – adapting TTPs. As mentioned at the beginning of this chapter, both sides target medical personnel and in particular CASEVAC teams primarily using UAVs to disrupt CASEVAC operations**.** Military grade ambulances are now practically non-existent in Ukraine and red crosses on equipment are nowhere to be found on the battlefield. Russian CASEVAC teams have resorted to using any type of transport means available, from pickup trucks, vans and other civilian vehicles to ATVs, motorcycles, hand carts, and dragging the soldiers along the ground all while attempting to fend off UAV attacks. Litters with retractable wheels are popular as they allow the CASEVAC teams to move faster along roads and paths and still carry the WIA through wooded and other difficult terrain. Evacuating the WIA by hand using typical soft stretchers would be the most ideal for the health of the WIA, however this method requires multiple personnel to carry one WIA and creates a bigger target profile for attack UAVs

In some cases, the RF AF has been using a type of stretcher called the "*Volokusha*" (*волокуша*), which can be translated as "cart" or "sled" and is designed to facilitate a single soldier or two soldiers dragging a WIA along a substantial distance and then transferring the soldier to an evacuation group. The stretcher is made of reinforced flexible plastic than can be rolled up like a yoga mat and resembles a kind of inexpensive snow sled that was popular years ago in the US. The stretcher comes with

multiple stability straps to secure the WIA to the stretcher and a tow strap at one end. While it has its limitations based on the terrain, RF AF units have had success with this stretcher, in particular in the winter over frozen ground and snow. Despite the obvious downfalls for the WIA being dragged, this lightweight stretcher provides a field expedient option that relieves the soldier or soldiers evacuating the WIA of the additional weight of carrying the WIA.[20]

Russians have also used various unmanned ground vehicles (UGVs) to carry WIAs. While these UGVs eliminate the drone threat to CASEVAC team personnel, the vehicles are typically slow and visible to drone operators. Their operational range is also limited. UGVs tend to be used closer to the green zone to offset these vulnerabilities and often also double as resupply vehicles when not transporting wounded personnel.

The importance of properly formed Russian CASEVAC Groups. Russian medical experts advising the RF AF post lessons learned on the importance of properly manned, trained and equipped medical evacuation groups in the SMO. The lessons and examples were summed up with the following quote from one report. *"If you want to live, learn to evacuate others. If you want to ensure that you will be carried out, make sure someone knows how to do it."*

One RF AF medical company commander who has been operating in the SMO since late 2022 commented in 2025 that as more UAVs appeared on the battlefield, medical evacuations that they were previously able to execute during the day needed to shift to the night. Even then the night sky has been filled with so many UAF *Baba Yaga* heavy hexacopter type UAVs that even nighttime medical evacuations were extremely challenging. This made properly trained and prepared medical evacuation groups even more important.

Cited example of a Russian evacuation failure. A RF AF unit in eastern Ukraine was hit by a UAF mortar on the way to their position. One "300" (WIA) was missing a leg and bleeding severely. The unit tried to evacuate the soldier. The medic got stuck in the mud, one cover shooter was hit by a piece of shrapnel in his arm. The driver could not get the vehicle started because of a broken wire. The evacuation group lost 15 minutes in the process. The wounded soldier was eventually dragged out but died in a vehicle from shock and blood loss. The evacuation team was not properly trained or prepared for the mission.

Proper RF AF Medical Evacuation Group structure. According to one Russian medical report, a RF AF medical evacuation group should consist of the following personnel:

1. Group commander. Leads. Decides whether to evacuate or not. Determines the route and scheme of maneuver. He needs to have radio comms with him at all times.
2. Medic. Stabilizes the wounded long enough to buy time for further evacuation.
3. Cover Shooters (2 - 4 soldiers). Fifty percent of a successful medical evacuation relies on these soldiers providing effective covering fire, smoke, and other distractions.
4. Carriers/Evacuators. They carry, haul or drag the wounded often under fire. This requires strength and skill.

5. Driver/Mechanic. Ensures the evac vehicle is always operational and must be ready to fix it, under fire if necessary.[21]

Another view - CASEVAC TTPs through the eyes of Russian evacuation teams. In this case, the recommended TTPs for medical evacuation teams were based on Russian medics' experiences operating in a UAV saturated environment in the SMO.

Terrain assessment - UAVs hunt for medics. When planning routes for evacuations, the evacuation teams need to understand that drones are more of a threat to them than the enemy's reconnaissance or infantry forces. To that end, the team should seek an abundance of "greenery" whenever possible for the evacuation route to mask them as much as possible. There are plenty of "wandering" FPVs that fly along the roads in "free hunting" mode seeking out targets to destroy.

Route Planning and Orientation. The main evacuation route should have a couple of backup branches in the most dangerous areas and all routes, both primary and backups, should be planned using maps or other programs and driven whenever possible. (Russians prefer the *Alpine* GPS navigation system.) It is not always possible to drive the routes, but it is worth attempting if possible. The evacuation vehicle driver not only needs to know the route but must be able to quickly navigate at high speeds during the evacuation. Paying attention to landmarks along the routes during planning which will help later with navigation at high speeds during actual evacuations.

Particular attention should be paid to camouflage at the beginning and end of the evacuation route, so as not to reveal the location of the medical stabilization point and other medical positions such as the "nest of the wounded." (Both of these will be discussed in detail later in this chapter.) If discovered, the UAF will hit them with both drones and artillery.

Equipment and physical fitness. A stretcher of some type with wheels is preferred whenever possible. No matter how fit the medic is, it is unrealistic to carry the wounded 12 kilometers. Add to this the rough terrain and the result is that the evacuation group is tired already at the first kilometer. At some places, the wheels cannot be used, so it is better to have a stretcher that has retractable wheels that can be quickly folded and unfolded. When approaching dangerous areas, the team should rest so that they can overcome these areas as quickly as possible.

Time calculations. With all the difficulties and dangers of the evacuation group's work, time is a critical component in getting the wounded to the evacuation point. Delivery time depends on several factors including the length of the route, the physical endurance of the evacuation team and the activity of enemy drones in this area. These three factors in particular must be considered when planning the evacuation timeline.

Other considerations. The evacuation team should have the minimum medical supplies necessary to provide aid to the wounded in case his condition deteriorates during the evacuation process. If it is not possible to have a medic or medics on the evacuation team, soldiers selected for the team must be more competent in combat

medical care than the average Russian soldier in order to effectively stabilize the wounded as needed during the transfer.[22]

Other factors to improve CASEVAC success – anti-thermal equipment and proper Infrared (IR) remission. With the overwhelming use of IR detectors and thermal imaging devices in the SMO, there is an increasing demand for tactical anti-thermal and IR materials such as ponchos, blankets, and extra uniforms. This is especially true among medics. Units also want covers for equipment and liners for the insides of vehicles, especially those used as ambulances. These covers and liners reduce light and heat signatures.[23]

Buying evacuation time - improving the odds for evacuation success with proper infrared (IR) remission. Another recent report from Russian medical experts described the importance of IR remission overall and specifically to medical evacuation missions.

There is a special coating on body armor, helmets, uniforms, ponchos, rucksacks, and other equipment that disperses IR radiation and distorts the contour seen through IR detectors and thermal imagers on UAVs and sniper scopes. Russian data analysis from the SMO (2023 - 2024) showed that in RF AF units with IR remission on 70 percent of the equipment, the mortality rate during the evacuation of wounded fell by 34 percent, detection of medical evacuation groups by thermal imaging UAVs decreased from 83 percent to 41 percent, and the number of accurate mortar/artillery hits during the evacuation decreased by almost three times. According to the medical experts, proper IR remission buys additional time to apply lifesaving first aid measures, keeps evacuation teams from “glowing” like a Christmas tree in a thermal imager and makes it more difficult for snipers to get a clear outline of the target.

Cited IR remission examples from the Kherson direction. A RF AF reconnaissance group was ambushed. A sergeant was wounded. Two soldiers began to drag him to cover.

1. Without IR protection (2022): Thermal silhouettes were clearly visible on the enemy UAV screen. One shot from an SPG 73-mm caliber recoilless gun – the two soldiers and the WIA were killed.
2. With IR coverage (2024): The enemy UAV operator saw a "blurred spot" near a crater and mistook it for burning wreckage or other. The evacuation group moved behind a hill and evacuated the WIA.

Effectiveness factors based on experience in the SMO.

1. Dirt, dust, and clay reduce the effect by 60 percent. The IR remission coating should be wiped down with a damp cloth once a day.
2. Invisibility ≠ invulnerability: If the enemy can see you with their eyes, IR remission will not save you. It only works against IR-related equipment.
3. Russian soldiers need to wear a full set of treated equipment (helmet, body armor, etc.). For example - wearing only coated body armor will still leave a “thermal halo” from the head and other parts of the body.[24]

1.8 Russian medical points in the evacuation process.

Crucial to the evacuation process. The RF AF uses medical points established along the evacuation route to stabilize WIA between the Line of Combat Contact (LCC) and the field hospital. These medical points range from rudimentary trenches and dugouts points close to the LCC to more sophisticated medical battalion level points. Medical personnel stand out in particular as key drone targets because of their activity on the battlefield. According to medical experts who advise the Russian military, the main survival principle for Russian medics is strict adherence to camouflage and dispersion and those factors have to be accounted for in establishing medical points, especially closer to the LCC.

Location and dispersion of medical points. Medical points should be located in shelters that have no direct visual contact with the sky - under tree canopies, in ruined buildings with intact ceilings, in specially equipped dugouts etc. Along with the locations, the medical points should be dispersed. This involves dividing medical functions among several of these small, mobile, and inconspicuous medical points located approximately 200 to 300 meters apart. This excludes the possibility of simultaneously disabling the entire medical care infrastructure with one drone strike.

Treating and moving WIAs. When moving across open terrain, it is necessary to use natural terrain folds, avoid prolonged presence in open spaces, and regularly change movement routes. Under active enemy drone activity, the time for providing medical assistance in open terrain is limited to 3 - 5 minutes, after which the group must change position. Evacuation of WIAs should be carried out according to the "chessboard" principle, using short dashes between shelters combined with mandatory route changes. All medical personnel must be trained to recognize the sounds of UAVs and the rules of conduct upon their detection – immediate cessation of action, remaining motionless under shelter, use of thermal masking covers etc.

Light and thermal camouflage. At night, the use of open light sources is strictly prohibited - flashlights are used only with red filters and at minimal brightness. Thermal radiation from medical equipment and human bodies must be masked using special thermal-dissipating coatings or improvised means – dense fabric canopies, layers of foam, plastic, or cardboard. All medical transport vehicles must be equipped with thermal camouflage covers, and their movement coordinated with Russian units operating in the area. When working with WIAs in the field, medics must use camouflage nets with heat-absorbing inserts, which are thrown over the group while medical assistance is rendered.[25]

Another medical point variant – "Nest of the wounded" – RF AF WIA collection and stabilization point. The "nest of the wounded" (*Гнездо раненых*) was first instituted by PMC Wagner and is another example of a collection and stabilization point between the red zone and yellow zone where RF AF WIAs are brought for further basic medical treatment and evacuation by transport.

If the RF AF combat unit has a full-time medic (or paramedic), this is the location where he will operate from, and he will typically be assigned 2 to 4 soldiers to carry the

WIAs from the LCC to the nest and then from the nest to the evacuation area. Ninety percent of the WIAs the medic receives will only have received a tourniquet or tourniquets prior to arriving at his location. The medic will provide additional basic medical evaluation and assistance (packing the wounds, additional bandaging, splints, etc.) and then further evacuate the WIA further to the rear.

Equipment at the nest typically consists of a pair of stretchers, a wheeled cart or other wheeled device to facilitate stretcher movement, a UAV detector of some type, and at least two medical backpacks. Because of its location very close to the LCC and the UAV threat, special attention must be paid to choice of location, speed of set-up, and camouflage. In one video showing an example of a nest, the RF AF medic was operating out of essentially a large muddy fighting position reinforced with sandbags and with overhead camouflage.[26]

RF AF medical battalion stabilization point in Ukraine. From the forward medical points, Russian WIAs are evacuated to a more well-equipped medical battalion stabilization point. These stabilization points vary based on available personnel, equipment and the level of training of the medical personnel. This is typically the last stop for a Russian WIA before evacuation to a field hospital or other medical facility further to the rear. The following describes a "well-prepared" RF AF medical battalion stabilization point likely located in a rear area of Ukraine.
NOTE: RF AF medical battalions are subordinate to divisions.

Most important – place it underground. As mentioned in the Troika Compendium, Russian field hospitals have gone underground in Ukraine and so have many of the medical battalion level stabilization points. Russian medical advisors emphasize that this needs to be taken into consideration when determining the size and location of the treatment room and other rooms in the stabilization point.

An example of an underground stabilization point was featured in a video posted on Telegram in August 2025. In the video, there was a 10-step staircase leading from the underground stabilization point to the surface. The stabilization room was small and designed for two medics to take care of one WIA at a time. The explanation of the limited personnel at the stabilization point was a lack of enough medics overall in the medical battalions to support all of the medical requirements in the SMO. Additionally, more than half of the medical platoon worked at evacuation stages from the LCC to the stabilization point and from the stabilization point to the MOSN (field hospital). (*МОСН - Медицинский Отряд Специального Назначения*). As a rule, the best-trained medics were placed at the stabilization point. In addition to the treatment room, opposite the stabilization point entrance (exit) there was another doorway closed with a curtain explained by the moderator as likely an additional room or rooms for stabilization point personnel and/or to accommodate additional WIAs.

Medical Supplies and equipment. Shelves in this particular stabilization point appeared to be amply supplied with medications, dressings, IV solutions, and other equipment and supplies. The moderator commented that in some stabilization points, medics place tags on the shelves below the medications, indicating the names of the medications. This is to assist the medics during critical moments to avoid confusion and

quickly find the correct medications by looking at the tags, rather than trying to search through the medications themselves to find the needed one.

There also appeared to be ample power supply for lights and equipment, with what appeared to be a dehumidifier operating in the corner of the room. The moderator commented that types and quantities of medical equipment varied from stabilization point to stabilization point. Some even included defibrillators and ultrasounds, while others had no equipment and were basically limited to basic antiseptics and bandages. Ultimately, according to the moderator, the stabilization point should be equipped to the level of medical expertise of the medics operating it.

Maintaining Hygiene. Proper cleaning and hygiene are absolutely critical in the stabilization point. Per the moderator, WIAs would prefer not to have someone with dirty hands digging around in their wounds or be laid on a dirty couch. In reality, the Troika has seen videos of some Russian military medical points and even field hospitals with Russian WIAs lying on all kinds of dirty beds, couches, chairs, and any other available furniture. The moderator commented that the medics themselves were responsible for cleaning the stabilization point, however there was no mention by the moderator of sterilizing the stabilization point. According to the moderator, it was also important for the medics to have clean, regularly changed towels, and always have a washbasin, soap and clean water available.[27]

1.9 Field Hospitals.

RF AF front line hospitals remain very busy. Besides the challenges associated with often having to be underground, Russian field hospitals as expected are constantly full of WIA. A video was posted in mid-June 2025 in which an unseen female RF AF medical worker working at a field hospital showed more than sixty field stretchers that she and her coworkers had just scrubbed of blood from recently arrived Russian WIA and KIA. Some of the stretchers were successfully cleaned however most showed signs of terrible bloody wounds and re-use which could not be removed even after multiple attempts.

During various interviews with young Russian military doctors and surgeons working at field hospitals, one doctor remarked that they worked on so many patients, that later when some patients that they saved sought them out to thank them, the surgeons didn't recognize or remember even working on them. Another young Russian military surgeon remarked that they conducted medical procedures around-the-clock, and the atmosphere was an addicting combination of teamwork and adrenaline that he did not have at his civilian practice.[28]

Observations from an underground Russian field hospital. A Russian military doctor with the call sign "Arduan" recently described the work in an underground Russian field hospital. According to Arduan, the biggest challenge was not the underground working conditions. There was plenty of lighting, the equipment was good, and they had ample supplies of medications and consumables. The biggest challenge was the unpredictability of the types of wounds that the medical staff would see. Sometimes

there was just a small entry wound, a half of millimeter, but the fragment hit the shoulder or ended up in some cavity and created damage, sometimes to the lungs, diaphragm, or intestines accompanied by massive blood loss. Decisions on medical treatment at the hospital had to be made very quickly; there was no time for lab tests, as in a civilian hospital, for example. It was normal to go straight from triage to the operating room. Arduan added that they did their best to meet medical care standards with the patient conditions they experienced. The hospital had even operated on a wound to the heart.

One example. There was a case where a large fragment completely "blew out" a soldier's knee joint and the shin was hanging on by a thread. The traumatologists detected a pulse and felt sensation in the foot. The ensuing operation lasted over four hours and required multiple blood transfusions. There were anesthesia and other complications as well during the surgery. In the end, the surgeons applied a fixation apparatus (*аппарат фиксации*) for stabilization, reassembled the leg, and saved the shin. Arduan added that the soldier would receive an endoprosthesis at a later date.

Evacuation challenges. According to Arduan, even after they have stabilized the patients, replaced blood loss and prepared the patients for further evacuation to the next stage in the rear, they often have to wait extended periods of time before they can evacuate the patients because of the threat of drones flying overhead. These delays further hampered patient recovery efforts at the next stage of care.[29]

Training a reserve of doctors for duty in front line hospitals. The RF MOD has taken medical lessons learned from the SMO and incorporated them in preparing civilian doctors for potential service in military field hospitals and other military hospitals. In April 2025, the MOD sponsored a workshop for civilian doctors in Ufa, Russia. Deputy Minister of Defense Anna Tsivileva opened the workshop via video message, emphasizing the importance of adopting advanced medical methods and technologies tested in real combat conditions and employing them as effectively as possible under any circumstances. During the workshop, civilian surgeons, traumatologists, anesthesiologists-resuscitators, and specialists in reconstructive and plastic surgery underwent training in military field surgery. The project was designed to ensure continuity at all stages of military medical care and improve the treatment of personnel wounded and injured in the SMO. It also served to create a personnel reserve of civilian healthcare specialists.[30]

1.10 Classifying wounds received by RF AF soldiers – the process and role of the medical commission. The Russian MOD uses medical commissions to conduct medical examinations of wounded RF AF soldiers. The findings of these commissions also determine disability ratings and monetary compensation for wounds received. The commissions typically operate out of military hospitals in Russia and are staffed with senior medical specialists, surgeons, therapists, neurologists and nurses in order to conduct the initial medical evaluations and identify those soldiers in need of subsequent treatment and rehabilitation. There are typically long lines of wounded RF AF soldiers at military medical institutions waiting to undergo medical commissions. The current

Russian military medical commission system is riddled with corruption – a desired diagnosis may be obtained for a price.

Medical Documentation. The base medical document used when a RF AF soldier is injured or wounded severe enough to be evacuated is called the primary medical card (*Первичная медицинская карточка*) or more commonly called "*Form 100*." This document is supposed to be issued based on the medical triage results at the first point of evacuation where the soldier receives medical assistance, and it is supposed to follow the wounded soldier throughout the various stages of RF AF medical evacuation to ensure continuity of medical information. It is only started for soldiers deemed to require evacuation and needs to be signed by a medical doctor. It then becomes a legal document in the soldier's records and is used during military medical commission proceedings. It also serves as part of the documentation used to substantiate payments for wounds suffered on the battlefield.

RF AF soldiers often complain about the lack of payments for injuries and difficulties in obtaining necessary documentation to substantiate their claims. In many cases, there is no injury classification determination done at all because the Russian soldier never gets back far enough to have the injury or injuries medically evaluated or no paperwork is done to substantiate the injuries or wounds even when they get to some kind of medical facility.[31]

Russian MOD mobile medical commissions. The Russian MOD announced in 2025 that it will create mobile medical commissions to conduct medical examinations of wounded RF AF soldiers at the units. Officially, the move is designed to reduce the workload of military medical commissions operating out of military hospitals, reduce the time frame for medical examinations and make the examinations more accessible to soldiers. Unofficially (and cynically), part of the intent could be to keep walking wounded from being evacuated to military hospitals in the Russian Federation, i.e. – to keep them in the fight. This move also will simply move the corruption process closer to the front lines. This could go in both directions. Medical personnel could be induced to forge official medical documentation to substantiate the number and severity of wounds in return for cash or other payments. Conversely, unit commanders could compel medical personnel to evaluate wounded soldiers and proclaim them as "return to duty."[32]

Keeping war costs down – The crazy economics of compensating (or not compensating) wounded Russian military personnel. Payments for wounds suffered in the SMO is a complicated and confusing process that is also rife with corruption. On 5 March 2022, Vladimir Putin issued presidential decree number 98 authorizing a one-time payment of 3,000,000 rubles (~$36,000) for <u>any</u> injury (wound, trauma, contusion) suffered by Russian armed forces personnel and *Rosgvardia* personnel while serving in the SMO or serving in Syria.

On 13 November 2024, Vladimir Putin directed the Russian government to issue a resolution modifying the earlier 5 March 2022 decree. A couple of hours later, the Russian government issued resolution number 1534, which essentially divided payments for injuries into three classifications. The 3,000,000 ruble payment was retained for only serious injuries with 1,000,000 ruble (~$12,026) and 100,000 ruble (~$1,202) payments added for lesser injuries. The definitions for the various

classifications of injuries were not listed in the resolution. In a weird twist, the next day, on 14 November 2024, Vladimir Putin issued another governmental decree, number 968, increasing the previous one-time payment of 3,000,000 rubles to 4,000,000 rubles (~$49,000) for any injury (wound, trauma, contusion) that resulted in the onset of a disability (н*аступление инвалидности*). There is no wording about disabilities in the 5 March 2022 decree or the 13 November 2024 government resolution. Additionally, Putin backdated the new 4,000,000-ruble payment to qualifying disabling injuries received since 24 February 2024, taking into consideration previous payments made for the injury. The decree also stated that the additional payments would be made from the "Defenders of the Fatherland Fund" a special state fund established by presidential decree in April 2023 for supporting SMO participants.

How are the various injuries classified? It is all in how the Russian military doctors see it and the associated documentation. According to Dmitry Trishkin, head of the Main Military Medical Directorate of the Russian Ministry of Defense, 98% of the wounded return to duty and less than 2 percent of Russian military personnel become disabled after being wounded. He made these remarks at a May 2024 military medical conference "Combat Trauma - 2024" in Moscow. According to another study done by the Russian journalists of *Verstka,* Russian military doctors typically classify burns, frostbite, bruises, fractures, contusions, bullet wounds and shrapnel stuck in soft tissues as minor injuries. In fall 2023, the deputy minister of the Russian Ministry of Social and Labor Protection stated that 50 percent of the SMO participants recognized as disabled had their legs or arms amputated. The end result of the new classifications means a significant decrease in one-time payments for injuries and would save the Russian government billions of rubles per year based on data from the Russian Ministry of Defense.

1.11 Conclusion.

The medical topics described above illustrate the challenges for Russian military medical operations over the last 3+ years of the SMO. "Kyiv in three days" and the historical Russian approach to using up soldiers were reflected in the poor medical equipping and training preparation that preceded the 2022 full-scale invasion of Ukraine. As Russian WIA stacked up quickly, many of them were simply left on the battlefield to die of their wounds, or by follow-on strikes from Ukrainian UAVs, snipers or artillery. Other Russian WIA were pressed back into the fight, without consideration or proper treatment of their wounds. The situation with WIA was further complicated over time with a saturation of UAVs across the battlespace in Ukraine. As with all parts of the Russian military, the medical system is also rife with corruption and that is reflected in how Russian WIA either manage to get proper documentation, treatment and possible compensation for their wounds back in Russia or be pushed back into the next assault.

Despite all of these aspects of the Russian military medical system, the RF AF has learned and adapted in its own Russian way in military medicine from the SMO experience, including improving individual soldier IFAKs and tactical medicine training. Russian soldiers have learned to use tourniquets and evacuate themselves and fellow soldiers. Medic equipping and training, CASEVAC operations and stabilization point,

and field hospital operations have also significantly improved. The Russians are building a large cadre of battlefield experienced medical personnel, including nurses and surgeons and passing on that information to create a civilian reserve of doctors for future conflicts.

One final aspect to consider. Russian soldiers, medics, nurses and doctors in Ukraine have a tremendous support line back to sponsors in Russia. This well-established volunteer network, working through various social media platforms, provides medical equipment, supplies and innovations in tactical field medicine that augments (and sometimes exceeds) what the Russian MOD can provide.

The Russians will continue to draw medical lessons from the SMO and adapt with medical approaches, some of which we have not even considered. The Russians are different. They will learn and improve in the field of military medicine in their own Russian way just as they have done in other areas in preparation for the next fight.

1.12 Endnotes.

[1] Troika Observations: 27 January 2025, Key Observations, Medvedev enlistment claims.
[2] Troika Observations: 26 Feb 2025, Troika Insights, Recent Russian frontline soldier videos
[3] Troika Observations: 6 June 2025, Troika Insight, Further indicators of Russian recruitment struggles
[4] Troika Observations: 2 April 2025, Troika Insights, UAV attacks and WIAs – a Russian military medical study
[5] Troika Observations: 2 July 2025, Troika Insights, RF AF UAVs as a percentage of UAF WIAs ("300") – a snapshot
[6] Troika Observations: 2 April 2025, Troika Insights, UAV attacks and WIAs – a Russian military medical study
[7] Troika Observations: 11 June 2025, Troika Insights, Russian Adaptations in Tactical Medicine Part One
[8] Troika Observations: 27 August 2025, Troika Insights, Russian soldiers should carry four tourniquets and know self-application techniques
[9] Troika Observations: 13 June 2025, Troika Insights, Russian Adaptations in Tactical Medicine Part Two
[10] Troika Observations: 3 July 2024, Troika Insights, RF CASEVAC situation in Zaporizhzhia direction paraphrased from a RF AF medic's comments
[11] Troika Observations: 13 June 2025, Troika Insights, Russian Adaptations in Tactical Medicine Part Two
[12] Troika Observations: 27 August 2025, Troika Insights, Russian soldiers should carry four tourniquets and know self-application techniques
[13] Troika Observations: 26 September 2025, Troika Insights, UAVs and Self-Wound Care: Supporting Russian Soldiers in Delayed Evacuation Environments
[14] Troika Observations: 30 June 2025, Troika Insights, RF AF medical improvements and insight
[15] Troika Observations: 11 June 2025, Troika Insights, Russian Adaptations in Tactical Medicine Part One
[16] Troika Observations: 11 June 2025, Troika Insights, Ibid
[17] Troika Observations: 21 July 2025, Troika Insights, Night training impact of RF AF medical personnel performance in the SMO
[18] Troika Observations: 30 June 2025, Troika Insights, Recruiting for medical specialist in RF AF formations remains strong
[19] Troika Observations: 13 August 2025, Troika Insights, Recruitment efforts of the RF GF 42nd Separate Medical Battalion / 127th MRD / 5th GCAA / RF Eastern Military District
[20] Troika Observations: 23 Feb 2024 Troika Insight, Russian WIA evacuation adaptation
[21] Troika Observations: 20 June 2025, Troika Insights, Russian Medical Evacuation Groups
[22] Troika Observations: 8 August 2025, Troika Insights, Medical evacuation through the eyes of Russian evacuation teams
[23] Troika Observations: 3 July 2024, Troika Insights, RF CASEVAC situation in Zaporizhzhia direction paraphrased from a RF AF medic's comments
[24] Troika Observations: 20 June 2025, Troika Insights, Buying evacuation time – improving the odds for evacuation success with proper infrared (IR) remission
[25] Troika Observations: 22 August 2025, Troika Insights, Ongoing challenges for Russian medics on a drone saturated battlefield
[26] Troika Observations: 2 July 2025, Key Observations, "Nest of the wounded" – RF AF WIA collection and stabilization point
[27] Troika Observations: 20 August 2025, Troika Insights, A look inside a Russian medical battalion's stabilization point in Ukraine
[28] Troika Observations: 30 June 2025, Troika Insights, RF AF front line hospitals remain very busy
[29] Troika Observations: 8 October 2025, Troika Insights, Observations from an underground Russian field hospital
[30] Troika Observations: 30 April 2025, General Observations
[31] Troika Observations: 18 November 2024, Troika Insights, Keeping war costs down – the crazy economics of compensating (or not compensating) wounded Russian military personnel
[32] Troika Observations: 11 April 2025, Troika Insights, Russian MOD mobile medical commissions