30th Multinational Military Medical Engagement Selected Briefs – Summary

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Keywords 30th MMME, military medicine, US-HUN military medical cooperation, medical research and science, scientific session, enabling the development of interoperability among medical services of NATO and partner nations, force health protection, medical aspects of the war in Ukraine, experience and dilemmas in the training of first care providers

Abstract *The Medical Service of the Hungarian Defence Forces and the United States Army Medical Readiness Command Europe hosted the 30th Multinational Military Medical Engagement (MMME) in Budapest, Hungary, from 26 to 28 September 2023. The theme for the 30th MMME was "Culture and Change: Evolution of Civilian-Military Partnerships". The conference offered a three-day multinational dynamic program consisting of plenary sessions, panel discussions, exhibitions, and cultural events focusing on enhancing military medicine, interoperability, familiarization, and partnership-building through civil-military relationships. Selected conference topics are summarized and published by the author in this article.*

PART I
"TRAVEL THROUGH SCIENCE, CULTURE AND FRIENDSHIP, 1993-2023"[1]

The 30th MMME takes its roots in the first Gulf War. A 37-member strong Hungarian military medical contingent joined the coalition to free Kuwait after Iraq invaded it in 1990. The commander of the Hungarian military medical contingent was Colonel László Svéd, MD. The Hungarians served in cooperation with Polish, Philippine, Saudi, and American specialists in Saudi Arabia, at the Dhahran Air Base.

The last Scud missile landed in Dhahran, and the Patriot missiles failed to destroy it: the Scud slammed into the sleeping quarters of the barracks of the 14th Quartermaster Detachment (home station in Greensburg, PA) of the Pennsylvania National Guard – a unit which

1 Svéd L. et al.: *Thirty years of US-Hungarian military medical cooperation and joint conferences from the First Gulf War to today.*

had deployed to the theatre three days earlier with the mission of making preparations for the troop withdrawal – where the whole personnel were already staying and relaxing. The missile, whose task was destruction and delivery of various agents of mass destruction instead of precision strikes, now hit the exact center of the barrack building. The immediate outcome was 28 soldiers killed and more than 100 injured. After a swiftly set up triage on the spot, the wounded were distributed among regional hospitals. We received 20 casualties until midnight, of whom eight were practically already dead on arrival.[2]

The professional work and dedicated efforts of Hungarian colleagues in saving the lives of the casualties were recognized and highly appreciated by the US command officials, as well as the US medical personnel in the theatre of operation, and beyond. As a result, cooperation between the US and Hungarian Military Medical Services started after the war in the form of the American-Hungarian Military Medical Conference, first held in Balatonkenese, Hungary, on 19–23 September 1993 (see Figure 1), which became open to other states as of 2012. The conference was titled MMME in 2013, which is still in use today.

The most powerful engine, helper, and patron of the birth of the conference was Maj. Gen. Michael J. Scotti Jr., commander of the 7th US Army Medical Service. He was a highly respected medical general with significant war experience, tremendous intelligence, and knowledge. Another key figure of the conferences was General Scotti's Vietnam war helicopter pilot, George Jászai, the predecessor of one of the most important

Figure 1: Logo of the first conference, 1993

organizers of our conferences for more than two decades, Mr. Mike Sandoval. The first conference was attended by 160 American/7th MEDCOM physicians and their spouses headed by Maj. Gen. Scotti, and 60 Hungarian medical officers headed by Col. Svéd.

In preparation for the third conference, it was seriously raised that the conference should be expanded on a broader basis and possibly to include the medical services of the armed forces of several countries that were already on the verge of joining NATO. The possibility of expansion was examined by several people, and an agreement was reached that the Czech, Slovak, and Polish military medical services would also be invited to the third conference in 1995. This obviously involved careful preparations.

Two issues made this third conference remarkable – in addition to the fact that other Eastern European countries also participated in the event for the first time, General Scotti took part in the conference for the last time, and the entire staff of the congress laid a wreath at the monument of American heroes of World War II in Budapest (see Figure 2).

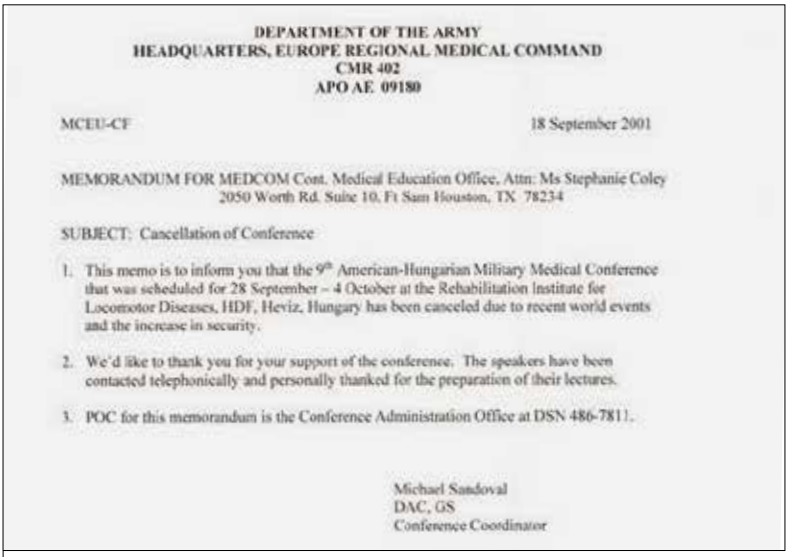
2 Svéd L.: *Hungarian Military Medicine in the First Gulf War.*

Figure 2: At the memorial, General Scotti pays his respects

The relevance of cooperation between US and Hungarian military medical personnel was well summarized in one sentence by Phil Gunby in an article published after the 6th conference held in Chiemsee, Germany, 13–17 September 1998. He wrote: "Military medical cooperation between the two nations is cited by US command officials in Europe as one of the leading success stories in the preparations for Hungary's entry into NATO next spring."[3]

A tradition was established to cover the same or similar topics in the agenda from two perspectives, both by a Hungarian and an American briefer. Accordingly, the topic of "Medical Lessons Learned in Bosnia-Herzegovina" was briefed by Maj. Gen. Svéd and Lt. Col. Jahns. Another topic, "Viral Hepatitis" was briefed by Dr. Makara from Hungary, which was followed by a brief about "Scrub Typhus" by Maj. McDonnell (USA) during the 7th conference in Balatonfüred, Hungary, 12–16 September 1999.

The "8th Annual American-Hungarian Military Conference" took place in Passau, Germany, 10–14 September 2000. The opening presentation by Brig. Gen. Ursone and Maj. Gen. Peake on September 11 turned out to be a prophetic one. The two US generals covered the issue of "U.S. Army Medical Doctrine: The Mass



DEPARTMENT OF THE ARMY
HEADQUARTERS, EUROPE REGIONAL MEDICAL COMMAND
CMR 402
APO AE 09180

MCEU-CF 18 September 2001

MEMORANDUM FOR MEDCOM Cont. Medical Education Office, Attn: Ms Stephanie Coley
2050 Worth Rd. Suite 10, Ft Sam Houston, TX 78234

SUBJECT: Cancellation of Conference

1. This memo is to inform you that the 9th American-Hungarian Military Medical Conference that was scheduled for 28 September – 4 October at the Rehabilitation Institute for Locomotor Diseases, HDF, Heviz, Hungary has been canceled due to recent world events and the increase in security.

2. We'd like to thank you for your support of the conference. The speakers have been contacted telephonically and personally thanked for the preparation of their lectures.

3. POC for this memorandum is the Conference Administration Office at DSN 486-7811.

Michael Sandoval
DAC, GS
Conference Coordinator

Figure 3: Memorandum for MEDCOM Continuing Medical Education Office, 2001

3 Gunby P.: *Physician Rapprochement Presaged NATO Entry.*

Casualty (MASCAL) response" in a 60-minute keynote presentation. A year later this topic became a harsh and tragic reality for the US and NATO (after the activation of Article 5 of the NATO foundational treaty by the USA).

After the attacks of 9/11, the US Conference Coordinator, Mr. Michael Sandoval issued a memorandum about the cancellation of "the 9th American-Hungarian Military Medical Conference" scheduled to take place at the Rehabilitation Institute for Locomotor Diseases of the Hungarian Defence Forces (HDF) in Hévíz, Hungary, 28 September – 4 October 2001 (see Figure 3).

The fact that the Hungarian colleagues were treated as equal partners by the USA was demonstrated every year through sharing US medical lessons from very recent incidents and current operations.

Col. Dr. Geiling delivered a 60-minute opening presentation about the "Pentagon Disaster" during the 10th Annual American-Hungarian Military Medical Conference in Grassau, Germany, 9–12 September 2002. During the next conference (7–12 September 2003) in Budapest, Hungary, Col. Moore of the 30th Medical Brigade briefed the audience on "Operation Iraqi Freedom (OIF) Medical Overview", while Col. Erickson and Lt. Col. Vetter from the U.S. Army Center for Health Promotion and Preventive Medicine presented "Epidemiologic Lessons Learned in OIF & Afghanistan".

Maj. Gen. Svéd, the Hungarian Surgeon General demonstrated his attentiveness during the 12th American-Hungarian Military Medical Conference in Budapest, Hungary (29 August–2 September 2004), when Col. (Promotable) Carla Hawley-Bowland, Commander of the United States Army Europe Regional Medical Command (ERMC), was notified about her promotion to Brigadier General (see Figure 4).

Figure 4: The cake presented to the ERMC Commander on the occasion of her promotion, 2004

The knowledge, experience, respect, encouragement, confidence, and connections gained by Hungarian colleagues during the years enabled the Medical Services of the HDF to establish a Centre of Excellence for Military Medicine (MILMED COE) and to run a NATO medical exercise.

This COE became a NATO-accredited education and training facility within a year after its establishment, a record-short period among the COEs around the Alliance. Col. Dr. István Kopcsó, the director, has briefed the "17th US-Hungarian Military Medical Conference" in Budapest, Hungary (8–11 September 2009) about "Recent Development and Current Challenges of MILMED COE". Col. Dr. Attila Lengyel (HDF) presented the topic "Vigorous Warrior 2011 – Multinational Medical Display: Experience and Results" during the 19th American-Hungarian Military Medical Conference in Budapest, Hungary (12–14 September 2011).

The annual American-Hungarian military medical conferences started to

become truly multinational in 2012 (see Figure 5).

Figure 5: Poster of the 20th conference, 2012

In 2013, the conference was named MMME. Health and medical aspects of refugee management were covered first during the 21st MMME in Rose Barracks, Vilseck, Germany (15–17 September 2013). Lt. Col. Khaled Baltagi, Tunisia Ministry of National Defense, presented "Tunisian Military Health Service Response to the Refugees during the 2011–2012 Libyan Crisis".

The annual American-Hungarian military medical conferences served as educational platforms for the new generations of Hungarian medical officers, who dedicated their service to the management of the Medical Service of the HDF. Several of them were trusted to serve in command medical positions in the NATO Command Structure, as well as in the United Nations and the European Union. Brig. Gen. Dr. István Kopcsó, Medical Advisor and Assistant Chief of Staff/Head of Joint Medical Division, Allied Command Operations (ACO) briefed the 22nd MMME at the Supreme Headquarters Allied Powers Europe (SHAPE), 7–9 September 2014 about "ACO/SHAPE Medical Organization & Activities".

During the 23rd MMME (Budapest, Hungary, 13–16 September 2015) Maj. Zsolt Pető (HDF) presented the Hungarian view on an evolving issue among the allies, "Mission Impossible: Sustainable Rotation of Medical Personnel for Operations".

All of the participating nations benefited from the professional, scientific, and cultural potential of the MMMEs. Three more examples. The Slovak Armed Forces Surgeon General, Brig. Gen. Vladimír Lengvarský attended the 23rd MMME as well. In six years, he began to serve as the Minister of Health in the cabinet of Prime Minister Eduard Heger (between April 2021 and March 2023).[4] Maj. Gen. László Svéd (HDF) was elected to be the 3rd Chairman of the Committee of the Chiefs of Military Medical Services in NATO (COMEDS), which position he fulfilled from 2005 to 2006.[5] Brig. Gen. Zoltán Bubeník, the former Czech Surgeon General became the chief medical adviser to the North Atlantic Alliance as the 8th Chairman of COMEDS, the committee of Surgeons General of NATO and partner nations.[6]

The reader should be convinced already that MMMEs reflected vigorously

4 Vladimir Lengvarsky.
5 Committee of Chiefs of Military Medical Services in NATO.
6 Zoltán Bubeník.

the changes in the NATO security environment. Accordingly, the 24th MMME was dedicated to the "Rehabilitation of the Wounded Warrior: Care for the Visible and Invisible Wounds of War" (Armed Forces Recreation Center Garmisch, Garmisch, Germany, 11–14 September 2016). Col. Vsevolod Stebliuk (UKR) presented the topic "Challenges and Solutions in the Rehabilitation of Ukrainian War Casualties". Lt. Col. Andri Svets (UKR) briefed the audience about the "Ability to work under information overload of military personnel in 24-hour shifts". Capt. Éva Zsíros (HDF) presented "The Hungarian Border Barrier's position in Hungary".

The evolving security crisis in Ukraine required that the 25th MMME (Kyiv, Ukraine, 26–28 September 2017) had discussions on lessons of rehabilitation. Lt. Col. Mecketen (USA) presented the topic "Rules of War". Several speakers from the USA, HDF, UKR, and POL addressed the topic of care for and rehabilitation of wounded warriors. Lt. Konstiantyn Karpenko (UKR) highlighted "The Impact of Training on Soldier Survival".

The 26th MMME (Budapest, Hungary, 25–28 September 2018) saw the first presentation about a contracted medical support solution – "The KFOR contracted Role-2 Basic facility" by Col. Zoltán Vekerdi (HDF). This was the year when the MMME community thanked Mr. Mike Sandoval for his unwavering and invaluable contribution to the organization and management of the annual American-Hungarian military medical conferences and MMMEs. Mike, THANK YOU!

In a telegraphic style:

– 27th MMME (Lviv, UKR), Hetman Petro Sahaidachny National Army Academy, 17–19 September 2019, number of countries represented: 9, Regional Health Command Europe (RHCE) Commander: Brig. Gen. Ronald Stephens.

I.	1993. Balatonkenese		
II.	1994. Budapest		
III.	1995. Budapest		
IV.	1996. Ramstein		
V.	1997. Kecskemét		
VI.	1998. Chiemsee	XXI.	Vilseck, DEU
VII.	1999. Balatonfüred	XXII.	SHAPE, Mons, BEL
VIII.	2000. Passau	XXIII.	Budapest, HUN
IX.	2001. Hévíz (cancelled)	XXIV.	Garmisch, DEU
X.	2002. Grassau	XXV.	Kyiv, UKR
XI.	2003. Budapest	XXVI.	Budapest, HUN
XII.	2004. Budapest	XXVII.	Lviv, UKR
XIII.	2005. Garmisch-parten Kirchen	XXVIII.	Tbilisi, GEO
XIV.	2006. Budapest	XXIX.	Tartu, EST
XV.	2007. Regensburg	XXX.	Budapest, HUN
XVI.	2008. Budapest		
XVII.	2009. Budapest		
XVIII.	2010. Budapest		
XIX.	2011. Budapest		
XX.	2012. Landstuhl		

Figure 6: Dates and locations of the conferences

– 28th MMME (Tbilisi, GEO), Grand Sheraton Tbilisi, 31 May–2 June 2022, number of countries represented: 13, RHCE Commander: Brig. Gen. Mark Thompson.
– 29th MMME (Tartu, EST), Estonian National Defence College, 29 November–2 December 2022, Medical Readiness Command, Europe (MRCE) Commander: Brig. Gen. Clinton Murray.
– The dates and locations of the conferences can be found in Figure 6.

Measurable indicators of added value and effectiveness of the conferences include but are not limited to key medical positions in NATO, the United Nations, and the European Union, filled by medical professionals who grew in experience and knowledge through the MMMEs.

The most relevant success factor can be measured through the hearts and minds of all of us, who participated in the MMME activities. The continuity of the MMME conferences has served as a basis that enables our nations to strengthen the medical resilience of our societies, contribute to deterrence and defence of NATO, facilitate interoperability among our military medical services, and assist in preserving the safety and security of the trans-Atlantic region for the past thirty years and the decades ahead.

PART II
"PANEL DISCUSSION – EMERGING THREATS OF INFECTIOUS DISEASES (ID) IN THE OPERATIONAL ENVIRONMENT"

The second day of the 30th MMME was dedicated mainly to panel discussions. Brig. Gen. Clinton Murray (USA), Commander, U.S. Army MRCE chaired the panel. Lt. Col. Ágnes Guth-Orji (HDF) and Maj. Krisztina Szabó-Filyó (HDF) facilitated the discussions. RADM Charles Vitek (USA) contributed to the presentation that preceded the discussions. They highlighted emerging ID threats such as multidrug-resistant bacteria, especially those complicating combat-related injuries and blood safety, especially by transmittable viruses like Human Immunodeficiency Virus (HIV), hepatitis B and C, COVID-19, and malaria.

The context

Events over the last few years, including the pandemic and the war in Ukraine, have shaped how we view the current and future operational battlespace and the relevance of persistent and emerging ID threats. The world continues to wrestle with increasing antimicrobial resistance of bacteria, especially those associated with nosocomial infections within our healthcare facilities. This has become increasingly evident during the war in Ukraine. The prevalence of transmittable viruses in blood, required for life-saving interventions on the battlefield, demands continued focus on minimizing the threat of these viruses at national and

international levels. In addition to transfusions, the risk of blood and bodily fluid exposure through sharps, needle sticks, or mucosal splashes must remain a priority to protect healthcare personnel, especially in deployed settings. Many lessons were learned during the COVID-19 pandemic, including challenges with logistical support, the capacity of the medical industrial base, and broad acceptance of force health protection measures. These lessons will impact future pandemics and large-scale combat operations, especially across Europe. Finally, we will continue to face historically relevant ID complications like malaria, which has seen increasing diagnosis, prevention, and treatment challenges.

Multidrug-resistant bacteria

Advances in casualty care have resulted in those injured on the battlefield surviving and recovering from their injuries better than in any war in history. However, the war in Ukraine is ushering in a return to large-scale combat operations and multidomain operations, which we did not experience during the wars in Iraq and Afghanistan. As such, we have to continue to learn from the lessons identified and apply them to future combat operations.

Although multidrug-resistant bacteria were seen during the wars in Iraq and Afghanistan, the scope and scale of the problem in Ukraine along with the movement of patients to civilian hospitals, including those across Europe, highlight the global threat. Of note, the presence of bacteria resistant to all approved antimicrobial agents is of great concern, especially with pathogens like *Klebsiella pneumoniae*, which acquire more virulence genes. The combination of virulence genes and antimicrobial resistance leads to excess morbidity and mortality from combat-related injuries. In addition, the movement of casualties across healthcare facilities can lead to nosocomial infections in other patients. This places a great emphasis on new antimicrobials and new diagnostic methods and enhances infection prevention and control measures at the individual and the facility levels both in fixed and mobile hospitals.

The US Centers for Disease Control and Prevention (CDC) are active in ten countries that arose from the former Soviet Union. CDC has offices in six of these countries, including a regional office in Tbilisi, Georgia that supports all ten countries.

Three of the disease threats are present in the region where the CDC is working with host governments to address antimicrobial resistance (AMR) in Ukraine, and two potentially blood-borne and sexually transmitted infections can be found at significant levels in Ukraine: HIV and hepatitis C.

Ukraine AMR

The Ukraine war has supercharged the AMR issue into a crisis with the large numbers of wounded patients overwhelming infection prevention measures in eastern hospitals. Large numbers of patients infected with highly resistant organisms are being transferred to western Ukraine hospitals

and evacuated to neighboring countries.
– CDC is supporting an AMR project in 3 western oblasts.
– Task Force will develop a package of activities to:
  • Create multi-disciplinary teams in selected hospitals to strengthen AMR detection, clinical management, and facility-level infection prevention and control response.
  • Build a laboratory referral network for rapid pathogen identification and susceptibility testing using high throughput equipment including matrix-assisted laser desorption/ionization-time of flight (MALDI-TOF).
  • Introduce rapid reporting to clinicians in a user-friendly format.
  • Support regional Centers for Disease Control.

Blood safety

The wars in Iraq and Afghanistan revealed the need for blood product support far forward on the battlefield to save lives. The ability to provide whole blood or component therapy including packed red blood cells, platelets, and fresh frozen plasma near the time of injury clearly saves lives. However, the logistics of large-scale combat operations require a huge demand for blood collection and delivery along with blood collection nearer to the point of injury. This ushers in the threat of blood products not being fully tested for pathogens prior to transfusion, especially with HIV, hepatitis B, and hepatitis C.

The threat is significant in Europe when one considers the prevalence of HIV in Ukraine, which is second only after Russia with rates of 37.1/100,000 people and 40.1/100,000 people, respectively. This threat of viral infections also extends to blood and bodily fluid risks through sharp exposure, including needle sticks, and mucosal exposure through splashes. Rapid testing, field expedient treatment, and prevention are needed along with broad education of the forces.

Hepatitis C causes significant concern across the region as the overall prevalence of it is estimated to be 3 to 4 times the global average due to widespread infection, especially in the late Soviet and early post-Soviet period. Hepatitis C screening of blood products and decreased injection drug use have decreased new infections. In Ukraine, hepatitis C remains a significant health problem with an estimated rate of 3–4% of adults living with chronic hepatitis C infection.

A successful public health model has been demonstrated in Georgia that can lead to a rapid successful decrease in hepatitis C in the population. That model uses hepatitis C screening and confirmation and treatment with the currently available highly effective anti-hepatitis C medications, all provided to the patients for free, and with improved data systems to stop patients not receiving their test results or being lost before follow-up. This model could be implemented in Ukraine when the security situation allows.

The HIV epidemic in the Eastern European and Central Asian regions has significantly stabilized. New infections have decreased although the total number of people living with HIV continues to rise in many coun-

tries as people living with HIV/AIDS live much longer due to the antiretroviral therapy.

For example, in Ukraine, new infections are estimated to be less than new case detections (as detected cases include many persons who were infected years before). The overall prevalence is about 1% in the age group of 15–49 years.

COVID-19

Many of the challenges associated with COVID-19 will remain relevant for any future pandemic but also for large-scale combat operations. The inability of the medical industrial base to quickly develop and then manufacture key personal protective equipment, medical devices, medications, diagnostic platforms, therapeutic agents, and vaccines highlights future challenges that must be addressed. In addition, the challenges associated with the trust regarding the broad implementation of force health protection measures will impact the ability to broadly vaccinate at-risk personnel and broad acceptance of personal protective measures in the future.

The national and international public health and medical industrial base must be proactive in preparation for future pandemics and large-scale combat operations, otherwise there will be excess morbidity and mortality.

Malaria

Malaria has had a devastating impact on fighting forces throughout recorded history (see Figure 7). Despite all the advances in malaria diagnosis, treatment, and prevention, we continue to face increasing challenges from malaria in terms of adherence to personal protective measures like insect repellents and insect netting, taking prophylactic medications, and utilizing early diagnosis.

Of concern are the genetic changes in various malaria species that lead to failures of malaria Rapid Diagnostic Tests along with antimalarial prophylactic and treatment regimens. Although there is a vaccine used in Africa, it is not adequate to protect soldiers who are deployed to endemic regions. The challenges we face related to malaria are also present in the case of many other tropical and neglected diseases. We must continue to emphasize research and

Figure 7: Warning and deterrent sign advocating protection against malaria in the Second World War (A sign in front of the USA 363rd Military Station Hospital in Papua New Guinea in 1941. Available at http://rarehistoricalphotos.com/advertisement-atabrine-anti-malaria-drug-1941/ *Accessed: February 12, 2024)*

innovation along with command, with an emphasis on adherence to preventive measures to maximize combat power and performance on the battlefield.

Panel discussion conclusions

Infectious diseases remain an emerging threat to the operational environment, impacting combat performance and power. We must incorporate the lessons learned from the pandemic and the war in Ukraine into our civilian and military medical systems, our national and international public health communities, and our medical industrial base to mitigate excess mortality and morbidity of our fighting forces.

PART III
"HOW TO TRAIN A MILLION SOLDIERS IN TCCC UNDER THE CONDITIONS OF A FULL-SCALE WAR?"

The third day of the conference started with the subject presentation about the efforts, achievements, and lessons in training UKR soldiers to provide tactical combat casualty care. The presentation was delivered by Leonid Kopus MD (UKR) and Igor Korpusov (UKR).

The context

The strength of the Armed Forces of Ukraine is classified information but according to various estimates, the approximate number of the troops reaches 1,000,000. All of them must be able to provide at least basic medical aid on the battlefield. Training such a large number of soldiers in tactical medicine under the conditions of a full-scale war is a problem that Ukraine has faced and must solve.

Private organizations – charitable and commercial organizations, state institutions, and international training missions – are trying their best to train Ukrainian soldiers in Tactical Combat Casualty Care (TCCC).

One such organization is PULSE.[7] Since the beginning of the full-scale invasion, more than 20,000 soldiers have been trained by PULSE within a 1.5-year period. PULSE sends mobile groups of instructors along with equipment to any point in Ukraine, which makes training flexible and convenient for military units. PULSE has the capacity to train 2,000 people per month and is constantly striving to increase this number because the demand is "crazy" and full of challenges.

7 PULSE – Tactical combat casualty care for Ukraine. https://www.pulse.charity/en

Security

The training location can be physically destroyed, so this must be considered during risk assessment and training planning.

Equipment

Training requires a large material base – training tourniquets, materials for wound packing, hundreds of liters of artificial blood, task trainers, and moulages for practicing skills, etc. – and, of course, ways to replenish the stocks.

Logistics

Flexible training planning is required due to the specifics of work in combat conditions. This is about situations when, for example, training is canceled at the last moment due to a change in the unit's plans. Or, on the contrary, there is a need to organize training in a few days.

Cadre

Training a large number of people requires a large number of instructors. PULSE considers the lack of high-quality instructors as the main problem. Since Ukraine must train a large number of military personnel (since the start of the full-scale war, more than 20,000 soldiers have gone through PULSE training alone), there is a need for a large number of instructors. Sometimes they must be prepared from scratch.

Categories

PULSE divides potential instructors into four main categories:

- those who have never been trained in tactical medicine;
- those who passed provider training but did not conduct training as instructors;
- those who already have teaching experience;
- war veterans.

Instructor training

The first two categories require the most attention, time, and resources in preparation. PULSE has come to a format in which the group of potential instructor candidates runs through provider training, then an instructor preparation course, and only the best ones remain in the course. After that, they become interns and teach under the supervision of senior instructors until they get enough experience. Instructor preparatory training can last from three weeks to several months.

Potential instructors from the 3rd and 4th categories (candidates with teaching experience or combat experience) might join the internship straightaway if they meet all the requirements.

Requirements

Experience and expertise, however, are not the only problems about human

resources. Having experience in working with instructors who have worked a lot with the wounded, PULSE often comes across the problem of their motivation. This is related to the emotional component: they feel greater significance in directly practical activities. Therefore, instructors can periodically go on rotations as part of the medical evacuation team.

Resocialization of veterans as instructors

To work with veteran instructors, PULSE hired an experienced person with military experience who helps to adapt them to the organization. PULSE had several unsuccessful attempts to involve veterans, so it was decided to pay additional attention to this category of instructors.

Instructors' burnout

The work of PULSE instructors is connected with one-week or two-week trips. Training does not always take place in comfortable conditions. On average, an instructor spends 15–20 days working in a row, without days off. For instructors, PULSE tries to organize a balance between work, internal training, and rest. In PULSE's opinion, the ideal ratio is 2 weeks of work – 2 weeks of rest.

The way ahead

PULSE's current maximum training capacity is 2,000 servicemen per month, therefore, it would take 42 years to train 1,000,000 by PULSE alone.

PULSE is not alone

PULSE believes that it is possible to achieve the goal by taking certain steps, in particular:

1. Strengthening private organizations (charitable and commercial) as the most flexible.
2. Helping to develop governmental training centers. PULSE works on the training of instructors within selected units of the armed forces and helps find donors to provide such centers with the necessary training equipment in order to keep the TCCC training sustainable.
3. Exchanging experience with international initiatives that train Ukrainian military personnel to work according to standardized programs.
4. Paying more attention to the topic of tactical medicine in the media and social networks. There is a need to involve as many people as possible in TCCC to build a stronger community.

The future of MMMEs

I am convinced that together we can and will sustain the high quality and added value of MMMEs for all participants and will ensure that this heritage-value scientific and team-building event continues to strengthen our trans-Atlantic bonds.

ACKNOWLEDGMENTS

The history of MMME conferences was summarized based on contributions, information, and materials kindly provided by Lt. Gen. (Ret.) Dr. László Svéd, MD (HDF), Sandoval, Michael E CIV (Ret) USARMY MEDCOM ERMC (US), and Lt. Col. (Ret.) Béla Cserenyecz (HDF).

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TÖBBNEMZETI KATONA-EGÉSZSÉGÜGYI KONFERENCIA – VÁLOGATOTT ELŐADÁSOK, ÖSSZEFOGLALÓ

Szerző Dr. Vekerdi Zoltán orvos ezredes, NATO Katona–egészségügyi Kiválósági Központ

Kulcsszavak 30. MMME, katona-egészségügy, amerikai-magyar katonai orvosi együttműködés, orvosi kutatás és tudomány, tudományos ülésszak, a NATO és a partnerországok egészségügyi szolgálatai közötti interoperabilitás fejlesztése, haderővédelem, az ukrajnai háború orvosi vonatkozásai, tapasztalatok és dilemmák az elsősegélynyújtók képzésében

Absztrakt *A Magyar Honvédség Egészségügyi Szolgálata és az Amerikai Egyesült Államok Haderejének Európai Egészségügyi Készenléti Parancsnoksága 2023. szeptember 26–28-án Budapesten adott otthont a 30., jubileumi Többnemzeti Katona-egészségügyi Konferenciának (Multinational Military Medical Engagement, MMME). A 30. MMME témaköre az egészségügyi biztosítás kialakult eljárásrendje és az abban megfigyelhető változások köré szerveződött. A háromnapos összejövetel változatos programot kínált, plenáris ülésekkel, panelbeszélgetésekkel, szakmai kiállítókkal és kulturális eseményekkel. A tudományos előadások középpontjában a katona-egészségügyi ellátás, az együttműködés, a polgári–katonai kapcsolatépítés és a partnerekkel való közös cselekvés kérdései álltak. Az összejövetelek elmúlt harminc évének történeti összefoglalóját és néhány kiragadott előadás bemutatását adja közre itt a szerző.*