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Meeting Report

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6th International Symposium “SMART LION”. Medicine and War, October 14, 2022

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On October 14, 2022, the 6th International Symposium “SMART LION” (Science Medicine Arts Research Translational Lviv International Opportunity Network) was held in Lviv with the support from Danylo Halytsky Lviv National Medical University, the Medical Commission of the Shevchenko Scientific Society, Lviv City Council and Lviv Conference Bureau. It was no coincidence that the time of the conference coincided with the Day of Defenders of Ukraine, which include military medical professionals and scientists who equip them with knowledge and skills enabling them to save lives on the battlefield.

The purpose of the symposium was to analyze the new experience of medical professionals and volunteers of Ukraine and its allies, which they acquired during Russia's war against Ukraine, develop new methods in medical education, and establish close cooperation between military medical professionals, volunteers, and scientists.

The scientific event was held online via ZOOM. It was also streamed on the Facebook page of the journal “Proceedings of the Shevchenko Scientific Society. Medical Sciences”. The event featured more than 20 speeches by international and domestic scientists and highly qualified specialists. Subsequently, they will serve as a scientific and practical foundation for the development of both military and general medicine. Discussions during the conference clearly showed the need for systemic changes in medical education, supplementing educational programs taking into account the vast experience of military medical professionals, and improving teaching methods.

At the end of the symposium, organizers expressed confidence that most of the deliverables and ideas highlighted during the conference will be successfully implemented. We sincerely thank all defenders and allies of Ukraine, volunteers and medical professionals who save people's lives, sometimes pulling them out of the death grip. With hope for and belief in a bright future, with faith in an upcoming victory and plans to meet again live in Lviv at SMART LION 2023.

Keywords: russian-Ukrainian war, SMART LION 2022, medical journal, trauma, rehabilitation, volunteer.

Video applications:

1. https://www.youtube.com/channel/UCi2bYkrILd_T7f3jjm_Lc0sw

2. https://www.youtube.com/watch?v=8R7_ejRAM0Q

3. <https://www.youtube.com/watch?v=muOU0BFQW8E&t=47s>

4. <https://www.youtube.com/watch?v=iy8seuJqzMI&t=32s>

5. <https://www.youtube.com/watch?v=FwoR1zmVync&t=780s>



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The 6th International Symposium SMART LION, focused on the topic of “Medicine and War”, brought together young and experienced scientists and doctors who are developing innovative technologies in medicine to popularize vital knowledge about basic and clinical sciences during the Russian war against Ukraine (Figure 1). More than 20 speeches by leading scientists and highly qualified specialists from Ukraine, the USA, Germany, France, and the United Kingdom, covering the latest achievements in the fields of wartime medicine, scientific communication and medical education, should be used to shape a scientific and practical basis for the development of medicine.



Figure 1. Welcoming speech from organizers

Organizers of the 6th SMART LION Symposium: Oksana Zayachkivska (Danylo Halytsky Lviv National Medical University, School of Medicine, AUHS), Valentyna Chopyak (Danylo Halytsky Lviv National Medical University, Head of the Medical Commission of the Shevchenko Scientific Society), Vassyl Lonchyna (University of Chicago Pritzker School of Medicine, Ukrainian Catholic University).

Team of moderators: Natalia Matolinet, Ihor Trutiak, Svitlana Zubchenko, Rostyslav Stoika, Viktoriia Serhienko.

The symposium started with a welcome speech delivered by its founders. In her emotional and sincere speech, Professor Valentyna Chopyak expressed gratitude to our defenders who are now protecting the entire civilized world and standing on the side of light, good and truth. She assured the audience that Ukrainian medical scientists would never give up and never retreat from the protection of universal ideals of truth and humanism.

Ihor Trutiak, Professor, Chair at the Department of Traumatology, Orthopedics and Military Field Surgery of Danylo Halytsky Lviv National Medical University was invited to speak first.

At the beginning of his report, professor emphasized the importance of medical aid in wartime, as its lack or untimely provision on the battlefield leads to the death of at least 25% of victims with conditionally fatal wounds.

Bullet wounds, mine and shell fragment wounds, mine-explosive injuries, non-fire combined injuries, and combined lesions are the types of combat injuries that surgeons encountered during the Russian-Ukrainian war. Professor cited statistical data on injuries by localization, stressing that limbs were being hurt the most – 62.5%. That is why he focused on the specifics of treating combat wounds.

High-energy trauma is the cause of multifragmentary injuries of bones and soft tissues, which leads to difficulties in stabilizing and repositioning the fracture, frequent complications of the wound process, and the threat of losing the injured limb. When discussing the causes of combat injuries to the limbs, the speaker highlighted that shell fragment wounds predominated and accounted for 68.1%. In terms of the nature of the combat trauma of limbs, multiple injuries were the most frequent, but the combined trauma of limbs had a significant share too.

When treating a combat injury of the limb, the doctor is faced with extremely difficult tasks: to save the life of the wounded person and the limb as an organ and to restore its functioning in full. To achieve this goal, the fracture must be stabilized, the infection prevented and to ensure the healing of soft tissue wounds (Figure 2).

Professor emphasized that currently there was no alternative to extrafocal osteosynthesis for gunshot fractures of limbs. Its advantages include ease and speed of performance, relatively stable fixation, access for manipulations on the gunshot wound, and the possibility of early activation. However, this treatment method has its drawbacks, in particular, the likelihood of infection, reduced fixation stability over time, and more frequent non-healing of fractures.



Figure 2. Professor Ihor Trutiak shares his experience in critical care of war wounded

Vacuum therapy is widely applied in the treatment as it lets quickly fight the infectious process in the wound and prepare it for further plastic closure. Plastic surgery with autodermal graft has become widely used; other surgeries include rhomboplasty, local V-Y plastic surgery, plastic defect surgery with the MacGregor inguinal flap, thoracodorsal skin-muscle and sural flaps. To prevent any complications and monitor the survival of flaps in the surgeon's practice, ultrasonography and photothermography are used in addition to clinical diagnostics.

Professor Natalia Matolinet, shared her experience in the treatment of patients with mine-explosive injuries.

The new terrible experience received by doctors in Ukraine from the very first days of the war allowed them to understand the scale of the threat to everyone, without exception, in every corner of the Ukrainian land. As the speaker noted, Ukrainian doctors were now receiving a unique experience available to doctors from other countries only in cases of emergencies and major disasters. Because of this, it was necessary to quickly develop a strategy and establish the highest quality of medical care. It should be remembered that access to treatment within the first hour after injury saves the lives of 90% of injured patients. Therefore the professor emphasized that optimizing the terms of emergency medical care was a determining indicator of its effectiveness.

Based on her own experience, she described the case of the simultaneous provision of emergency medical care to a large number (over 130) of seriously injured patients who suffered as a result of a russian missile attack on the International Center for Peacekeeping and Security (Yavoriv training ground), when complex surgical interventions were performed simultaneously in several dozens of operating rooms (Figure 3). The professor noted that the last time when our doctors received a similar experience was after a plane had crashed into a crowd of thousands during an air show in Sknyliv in 2002, which emphasized the importance of recording, accumulating and preserving this kind of knowledge to pass it on to the next generation of medical professionals due to the difficulty of acquiring it in peacetime and the critical importance of having it in emergencies.



Figure 3. Speech by Professor Natalia Matolinet about features of patients' treatment with mine-explosive injury

The war in Ukraine once again proved that in terms of severity, mine-explosive injuries rank first among a variety of injuries, which is due to the interdependent and mutually aggravating effect of both deep and extensive tissue destruction and the general contusion-shock syndrome.

Thanks to the correct application of the experience gained during the 8 years of war, Ukrainian medical professionals managed to attain a low mortality rate, which is a joint achievement of medical practitioners, medical scientists and administrators of healthcare facilities.

An example of the implementation of such experience is the adoption of the currently valid Order of the Ministry of Health of Ukraine No. 1192 dated July 11, 2022 “On the approval of the Standards of medical care “Providing medical care to victims of hemorrhagic shock at the pre-hospital and hospital stages of trauma”, which allows working with fresh whole and pre-prepared donor canned blood.

Natalia Matolinets focused the audience's attention on certain aspects of whole blood transfusion practice. She emphasized that maintaining homeostasis, which required the regulation of acid-base, protein and energy, fluid and electrolyte balance, as well as the temperature regime, were key aspects required for saving the lives of such patients. Professor noted the importance of a coordinated, competent and multidisciplinary approach in the treatment of such types of injuries, where each team member acts as an important component of the comprehensive mechanism.

Finishing her speech, the speaker announced another crucial event, which was the establishment of the UNBROKEN National Rehabilitation Center. This is a unique location where war-affected adults and children can receive comprehensive qualified medical care, undergo rehabilitation (physical, psychological and psychosocial), and get a full set of prosthetic services using domestic prostheses.

The legendary surgeon John B Holcomb (University of Alabama at Birmingham, USA) shared his experience of resuscitation using whole blood. He noted that following the testing of effectiveness in critical conditions, inventions of military medicine from front-line hospitals were being widely implemented in civilian medicine. He expressed his admiration for the speed with which this treatment method was implemented by Ukrainian doctors, noting that this was facilitated by the pressure of circumstances brought about by the war (Figure 4).



Figure 4. John B Holcomb (University of Alabama at Birmingham, USA) shares his experience in whole blood resuscitation

Dr. Ihor Ihorovych Kurilets (International Neurosurgical Center, Kyiv, Ukraine) shared his extensive experience in managing patients with gunshot wounds of the spine and spinal cord (Figure 5). During the 8 years of the Russian war against Ukraine, spinal injuries constituted about 1% of all injuries, while since the onset of Russia's full-scale attack, this figure has spiked. At the beginning of his report, the scientist focused on the differences between civilian and combat gunshot spine injuries and stressed that spinal cord injury was more often in the case of the latter trauma and was accompanied by lifelong functional impairment. He emphasized that surgeries for spinal injuries should be postponed in order to be performed in specialized clinics, rather than in military field hospitals since the restoration of neurological functions is the same, but the frequency of complications and the need for repeated interventions is twice as much when performing operations in the latter.



Figure 5. Dr. Ihor Ihorovych Kurilets focused the audience’s attention on managing patients with gunshot wounds of the spine and spinal cord

Patient triage is critical. It should be understood that surgical treatment in the case of a complete disruption of the spinal cord function does not affect the neurological forecast, hence it should not be performed in the absence of other indications, which is especially important in the case of a large influx of wounded people. At the same time, when the disruption of the spinal cord function is partial, the surgery is to be performed and, moreover, performed immediately if the neurological status is deteriorating.

The main challenge faced by surgeons in the treatment of gunshot wounds of the spine is liquorrhea through a massive, contaminated wound, which can lead to meningitis and patient death. The speaker shared the developments in plastic surgery techniques used for handling large defects of the spinal dura mater, in particular, by applying the methods of closing and sealing the wound channel.

Glib Yemets, Head of the Department of Minimally Invasive Cardiac Surgery and Transcatheter Procedures at the Center for Pediatric Cardiology and Cardiac Surgery of the Ministry of Health of Ukraine, focused on the advantages of treatment method in his report, “Minimally Invasive Cardiac Surgery in the Conditions of the russian-Ukrainian War” (Figure 6). He noted that such interventions carried no risk of mediastinitis and osteomyelitis development. A smaller area of the wound surface reduces the possibility of complications and the risk of bleeding in the postoperative period. All these factors reduce the time of post-surgery rehabilitation and ensure significantly faster recovery, which is especially important in wartime when military personnel can return to the frontline within a month after the surgery.



Figure 6. Dr. Glib Yemets talks about minimally invasive cardiac surgery in the conditions of the russian-Ukrainian war

During the war, doctors of the center unselfishly and self-sacrificingly continue helping elderly patients in need of complex and expensive cardiac surgical interventions, thanks to the charity fund established for this purpose.

Doctor of Medicine, Professor Liubomyr Kulyk described how the lives of Ukrainian cardiac surgeons had changed during russia's full-scale war against Ukraine (Figure 7).

He started with the topic of collective psychological trauma that was experienced by war participants, similar to what had been observed in people who survived mass deportations and genocides, such as the Holodomor of 1932–1933.

Dr. Kulyk specifically focused on the role of medical professionals during the war and stressed the manifestations of moral greatness of people, in particular, the readiness of our foreign colleagues to help us prevail in this full-scale war, both privately and at the level of communities.



Figure 7. Speech by Professor Liubomyr Kulyk about changes in the life of Ukrainian cardiac surgeons during russia's full-scale war against Ukraine

According to the cardiac surgeon, the untimely referral of patients with cardiac pathology caused by stress, overwhelming with information and the modern life rhythm, is a pressing issue requiring immediate resolution, which is also described in the scientific literature. Under conditions where the COVID-19 crisis has not yet been fully overcome, the arrangement of assistance to war-affected people constitutes an additional complication for the Ukrainian healthcare sector.

Concluding his report, the professor emphasized that war was not just a terribly destructive force but a powerful driver of progress and a unique opportunity for the rapid development and application of new knowledge and skills, which is key to saving patients in extremely complicated conditions.

Svitlana Zubchenko (Lviv National Medical University, Ukraine) focused her report on immunological disorders in the case of post-traumatic stress disorder (PTSD) (Figure 8). PTSD is a specific clinical form of disorder affecting psycho-neuroendocrine and immune processes in response to traumatic stress. It belongs to the group of disorders associated with impaired adaptation and response to severe stress. Svitlana Zubchenko started her report by citing statistical data on the frequency of such a disorder. The terrible realities of our present life – hostilities, captivity, torture, terrorist attacks, violence, and separation from family and loved ones – were among the main trigger factors for PTSD in wartime. This is why the highest incidence of this stress disorder was observed among the civilian population, affected by hostilities or disasters (up to 40%) and military personnel after some time in a combat zone (up to 20%).



Figure 8. Svitlana Zubchenko talks about immunopathological syndromes in case of post-traumatic stress disorder

The speaker noted that PTSD was manifested by a decreased immune response to vaccines, activation of latent viruses, and risk of cardiovascular diseases, type 2 diabetes, mental disorders and some types of cancer.

The primary symptoms of PTSD can be divided into groups: A – a group of anxiety symptoms; B – a group of re-living symptoms; C – a group of avoidance symptoms; D – negative thoughts and mood; E – a group of symptoms of physiological hyperactivation and hypersensitivity reactions of the skin and mucous membranes.

The speaker shared the results of a pilot study conducted by the Research Neurosurgery Institute of the National Academy of Medical Sciences of Ukraine and Lviv National Medical University, which studied the long-term state of the immune system after combat stress in wounded and injured ATO participants. The obtained data indicate the need to develop vaccines against indolent infections and immunotropic therapy schemes to prevent serious immune-dependent diseases against the background of PTSD. Immune system impairments resulting from PTSD can lead to the development of infectious, autoimmune, oncological, and mental disorders and diseases. In the management of such patients, all types of medical care – psychological, psychotherapeutic, immunological and rehabilitation – should be used to modify and improve the immune system performance.

Training and adaptation to PTSD, collective immunoprophylaxis, express control of the replication of immune and neurotropic viruses, and rehabilitation of the immune and nervous systems prevent immune system disorders and PTSD.

Finishing her report, Svitlana Zubchenko emphasized the need to implement psycho-neuroimmune prevention, early diagnosis of PTSD and comprehensive medical care for such patients as a requirement of contemporary reality [1].

Professor Oksana Zayachkivska started the second part of the symposium, which was devoted to scientific editorial work during russia's war against Ukraine by introducing our honorable friends Rémy Ienko (SUES, France) and Agnes Henri (EDP Sciences, France), whose reports concerned the support, indexing and dissemination of Ukrainian medical journals, in particular in PMC – NCBI – PubMed Central [2].

Rémy Ienko spoke about the history of the SUES initiative (Support to Ukrainian editorial staff) aimed to support scientific communication and editorial activity in Ukraine, which continues despite the terrible realities of the war, as well as about establishing collaboration between scientific journals of Ukraine and France.

EUR 73,000 were fundraised with the financial support of CRNS, College de France, FMSH, the Ministry of Higher Education, Research and Innovation of France and technical support from ENS Editions and Bordeaux Montaigne University. This allowed helping 45 scientific Ukrainian journals, including “Proceedings of the Shevchenko Scientific Society. Medical Sciences” (Figure 9). These were just initial steps that made it possible to organize a Summer School with a special focus on the topic of journal indexing in the Directory of Open Access Journals (DOAJ), copyright and licensing. Assistance to Ukrainian scientific journals in the process of indexing in DOAJ is planned next. To find more about SUES activities, read the blog at <https://sues.hypotheses.org/>.



Figure 9. Rémy Ienko (SUES, France) talks about the support of Ukrainian journals in medical sciences

Agnes Henri stressed that the high qualification of editors, compliance with the rules of ethics, and relevance of topics of published articles for the reader increased the probability of journal indexation in Medline, PubMed, and SCOPUS (Figure 10). In her report, she also focused on certain aspects of the promotion of scientific works in the information era. In particular, she emphasized that the author is the best ambassador of his work, who can actively promote the matter under research in specialized groups on social media, that will contribute to the dissemination of research results, increased readability and citation of articles.



Figure 10. Agnes Henri (EDP Sciences, France) with her speech “Supporting, indexing, and wide spreading Ukrainian journals in medical sciences: Focus on PMC - NCBI - PubMed Central”

This topic was continued by Armen Gasparyan (University of Birmingham), who noted the need to create accounts on social media for scientific publications too, as this is an important factor for promoting the journal's content in the professional community and a platform for collaboration between clinicians and scientists, which is critical in wartime.

He focused the audience's attention on updates in the publication rules and ethical regulations for journals, which can be found, in particular, on the COPE (Committee on Publication Ethics) website created to strengthen the network of support and training of scientific publicists.

Armen Gasparyan named Science editing, Medical Writing, and Publications as one of the main journals to be read by editors of scientific publications seeking to be indexed in SCOPUS, Medline, and PubMed (Figure 11).



Figure 11. Speech by Armen Gasparyan (University of Birmingham) about the updates in the publication rules and ethical regulations for journals

In her report, Professor Oksana Zayachkivska (Lviv National Medical University, Ukraine; AUHS, USA) noted that despite the horrors of war, it is critically important to preserve domestic scientific journals as beacons of Ukraine's presence in the global sea of scientific journalism. Having overcome all contemporary challenges, the journal “Proceedings of the Shevchenko Scientific Society. Medical Sciences” is functioning and developing persistently, as evidenced by the expansion of its geography of readers to 150 countries, of which 13.4% are from America and 4.3% from Germany, as well as increased readability and citation of articles (Figure 12).

Cooperation with the Ukrainian Council of Science Editors (UCSE), whose president is Professor Rostyslav Stoika, Associate Member of the National Academy of Sciences of Ukraine, and the initiative Support to Ukrainian editorial staff (SUES) is an invaluable school and a benchmark for high standards of editorial work for teams of our scientific publication.

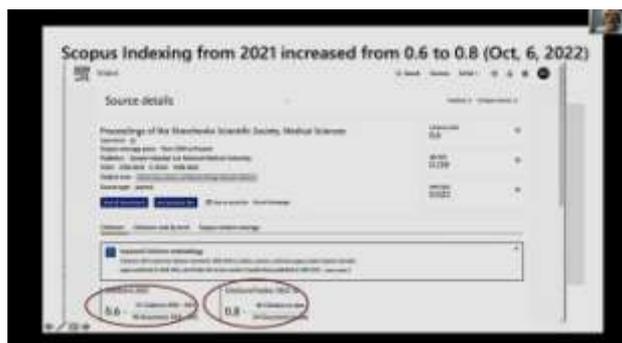


Figure 12. Professor Oksana Zayachkivska informs the audience about the continuous development of Journal “Proceedings of the Shevchenko Scientific Society. Medical Sciences” during brutal russian-Ukrainian war

Summarizing the second part of the symposium, Professor Rostyslav Stoika stressed that the preservation of our intellectual potential and scientific journalism, as the most essential means of its implementation, is a priority task for us, especially in the difficult conditions of wartime.

The terrible war events united not only Ukrainians but also all good and caring people across the globe in their desire to reduce the suffering and pain of our people and bring the victory of Ukraine closer [3]. In particular, Olena Gordon (UMANA Illinois, USA) shared the experience of the Ukrainian Medical Association of North America (Illinois) in providing assistance during the war (Figure 13). Thousands of volunteers have been working selflessly every day to save lives since the first days of the full-scale invasion. They are looking for the necessary equipment, sorting aid, forming pallets and arranging their transportation to Ukraine.

More than 300 tons of medicines, surgical tools, medical equipment, and 17 ambulances were sent to Ukrainian hospitals located in the frontline areas back in the first months of the war.



Figure 13. Olena Gordon (UMANA Illinois, USA) talks about medical war relief actions by UMANA Illinois during the russian-Ukrainian war

Dr. Hryhoriy Lapshyn (The University Medical Center Schleswig-Holstein, Campus Lübeck, Germany) shared his extensive experience in establishing a scientific and educational partnership between the University Hospital Schleswig-Holstein (the second largest university hospital in Germany) and educational and medical institutions of Ukraine (Figure 14). As noted by speaker, since the onset of the full-scale war, people of goodwill from all over the world had rallied and were supporting the Ukrainian people in their struggle for life. Together with hospital manager Jens Scholz, they decided to help Ukraine during this difficult time, having initiated a special campaign to support Ukraine. This is how they fundraised 4 million euros. Hryhoriy Lapshyn has also initiated the long-term provision of quality humanitarian aid, which is a significant contribution to our upcoming victory.



Figure 14. Dr. Hryhoriy Lapshyn talks about experience of scientific and educational partnership between the University Hospital Schleswig-Holstein and educational and medical institutions of Ukraine

Sincere gratitude goes to Iryna Vashchuk Discipio, the founder of the Revived Soldiers Ukraine charity foundation, the Next Step Ukraine medical rehabilitation center, for arranging comprehensive rehabilitation of the Ukrainian military with severe combat wounds, both in Ukraine and USA. However, the foundation works not just with the treatment of wounded soldiers but also helps to provide the military with vehicles, communication and observation means, which allow them to avoid injuries and sometimes even saves their lives on the battlefield (Figure 15).

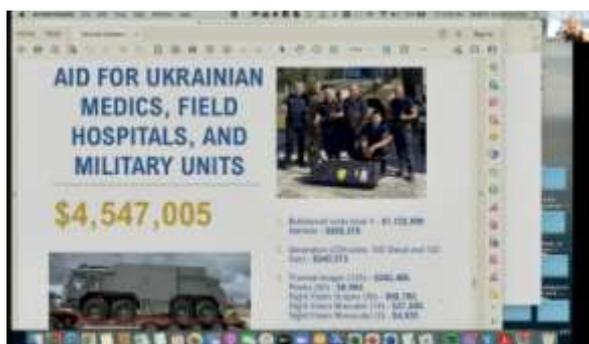


Figure 15. Iryna Vashchuk Discipio, the founder of the Revived Soldiers Ukraine charity foundation, the Next Step Ukraine medical rehabilitation center, talks

Dr. Luke Tomycz spoke about the Face to Face mission of American surgeons in Ivano-Frankivsk working on reconstructing the faces of wounded in wartime, which took place in September of this year and was arranged with the support from Dr. Manoj T Abraham, Chair of the Humanitarian Arm of the American Academy of Facial Plastic and Reconstructive Surgery (AAFPRS), Maria Soroka, co-founder and president of the Razom for Ukraine organization, Ivanka Nebor, ENT doctor, founder and president of INgenius, Natalia Komashko, ENT doctor, and an entire team of doctors and medical staff. More than 30 patients were able to receive help within 5 days. 130 Ukrainian doctors had an invaluable opportunity to learn from their colleagues through live broadcasts of surgical interventions (Figure 16).



Figure 16. Dr. Luke Tomycz talks about the mission of American surgeons in Ivano-Frankivsk working on reconstructing the faces of wounded in wartime

Similar medical missions in Ukraine allow establishing close ties with Western colleagues, learning new technologies and mastering global best practices.

At the beginning of the last session, which concerned medical education during the Russian war against Ukraine [4], Vassyl Lonchyna (University of Chicago Pritzker School of Medicine, USA; UCU, Lviv), Fulbright scholar (2016–2017), shared his observations and opinions on the issues of medical education in Ukraine and compared the practice of its organization with the US system (Figure 17). He noted the existence of differences from the moment of the student's admission all the way to clinical practice. The professor emphasized several aspects that significantly deteriorated the quality of medical education in Ukraine. The speaker also noted some adverse aspects, such as the age of students when they are not yet ready to understand the serious nature of their choice and the complexity of their future profession. According to the professor, a more rigorous admission procedure for medical specialties would give applicants the opportunity to acknowledge the difficult path of becoming a doctor. Furthermore, according to Vassyl Lonchyna, the monopolization of curriculum development destroyed the academic independence of educational institutions. He emphasized that the teaching style in higher educational institutions, as well as teacher-student relations, sometimes did not meet world academic standards and resulted from the long-term influence of the Soviet education system. From his professional perspective, he indicated the need to improve material support and modernize the educational process by bringing it in line with modern world standards. The professor emphasized the great role of the study of clinical medical ethics in America and wished to include such a subject in the educational process of Ukrainian medical institutions.



Figure 17. Professor Vassyl Lonchyna shares his vision of the development of medical education in Ukraine

Vassyl Lonchyna finished his speech by introducing Emily Anderson (Neiswanger Institute for Bioethics, Loyola University, Chicago, USA), who shared the experience of university partnership for bioethics education in Ukraine and talked about the international educational program in bioethics (Figure 18). The purpose of such education is to train experts in this field who will be able to apply the acquired knowledge in the medical and research institutions of Ukraine following program completion.



Figure 18. Emily Anderson shares the experience of university partnership for bioethics education in Ukraine

Rebekah Bihun (Mayo Clinic School of Medicine, USA) spoke about the importance of maintaining a dialog with foreign specialists in carrying out healthcare reforms, as a necessary condition for effective changes not only in the field of healthcare but in the medical education sector, too (Figure 19).



Figure 19. Rebekah Bihun (Mayo Clinic School of Medicine, USA) talks about the importance of maintaining a dialog with foreign specialists in carrying out reforms

Dr. Iryna Stelmakh (Khmelnyskyi City Perinatal Center, Ukraine) continued this topic by speaking from her own experience about the differences between medical education in Ukraine and the USA. She focused on three main aspects, which if implemented, would bring the level of Ukrainian education closer to the global scale, in particular, the domination of practice over theory in the educational process, respect for students and the desire for continuous professional development.

All these well-known classic Plato's methods – methodology, deductive and inductive techniques – that our education was cut off from due to the iron curtain of Moscow totalitarianism, remained the basis of world education, and we must return to this strategy for our education to be able to exist under conditions of fierce competition on the global educational market.

To conclude the symposium, Oksana Zayachkivska and Vassyl Lonchyna expressed their gratitude to the defenders and allies of Ukraine for the opportunity to hold this important scientific event and wished everyone victory and expressed hope for a new meeting live in Lviv at SMART LION 2023.

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