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Establishment of Advanced Trauma Life Support (ATLS®) In Kosova Through Kosova College of Surgeons and Sanford Health/ Sanford Health World Clinics Partnership: The Initial Report

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ABSTRACT

Background: Trauma remain a major cause of death and of significant morbidity world-wide. Countries that do not have organized trauma systems have worse outcomes. Kosova is one of the countries that does not have a consolidated trauma system and a dedicated trauma center. Hence, one of the main missions of Kosova College of Surgeons (KCS) has become improvement in trauma care and trauma education, through international partnership, medical diplomacy and involvement of our diaspora. The aims of this paper are to describe the establishment of Advanced Trauma Life Support (ATLS®) in the Republic of Kosova through partnership between Kosova College of Surgeons and Sanford Health/Sanford Health World Clinics and provide insights from the inaugural Demonstration Course in 2023 and subsequent Promulgation Courses in May 2024 and September 2024. We will highlight the successes, challenges, and future steps for this vital initiative. Authors present their own conclusions based on the healthcare context of Kosova

and they do not represent the opinions of partner organizations.

Materials and methods: This review examines the process of establishing an Advanced Trauma Life Support (ATLS) course in Kosova by developing both the necessary infrastructure and sustainability. Key elements include forming partnerships with international organizations such as Sanford Health/Sanford Health World Clinics and North Dakota Committee on Trauma with KCS and local health authorities, identifying champions for the initiative, and engaging the diaspora in the effort.

Results: There were three significant events: the 2023 first Demonstration Course and two 2024 Promulgation Courses. In total participants included 10 general surgeons, 10 emergency physicians, 4 pediatric surgeons, 4 anesthesiologists, 1 orthopedic surgeon, 1 vascular surgeon and 1 urologist, highlighting the multidisciplinary approach crucial for effective trauma care. Pre-course education was implemented, enhancing the overall outcomes of the courses. Additionally, at the last course during the 4th Clinical Congress of KCS, certification of all local ATLS instructors was completed, and essential agreements were established to ensure ongoing program development.

Conclusion: The collaboration between the Kosova College of Surgeons (KCS) and Sanford Health/Sanford Health World Clinics in establishing the Advanced Trauma Life Support (ATLS®) program in Kosovo marks a significant advancement in the country's trauma care. This partnership has successfully implemented the ATLS® Course Promulgation process, showcasing Kosovo's increasing ability to sustain its own trauma education initiatives. Furthermore, this initiative positions Kosova to emerge as a regional center for trauma education, ultimately benefiting healthcare systems throughout Southeastern Europe.

Keywords: Advanced Trauma Life Support (ATLS®), Kosova, Kosova College of Surgeons, Trauma care

Introduction

A quarter-century after the liberation of Kosova by Kosova Liberation Army and NATO intervention, the country still grapples with significant challenges in trauma care. The absence of a comprehensive trauma system hampers effective management of injured patients, leaving many injured patients without timely and adequate treatment. With only the University Clinical Center of Kosova serving as a tertiary facility, but not a formal trauma center, the strain on resources is palpable. To this end, the need for specialized trauma centers is evident. Many injuries, particularly from road traffic accidents and falls, result in severe complications that require an advanced multidisciplinary approach. Without appropriate facilities and dedicated trauma education, patients often face delays in treatment and inadequate management. Another critical issue is the lack of education and training in trauma and critical care for healthcare professionals. This education gap impacts the quality of care provided and limits the ability of medical staff to respond effectively to trauma situations. Consequently, both healthcare workers and patients suffer from the limitations of an underdeveloped trauma care approach. Addressing these issues is essential for improving trauma care in Kosova. ATLS training in Kosova represents one of the initiatives that can have a profoundly positive impact in trauma management.

The aim of this paper is to describe the initiation of the process for ATLS in the Republic of Kosova through partnership between the Kosova College of Surgeons, Sanford Health and the North Dakota Committee on Trauma, and also report on insights from the inaugural Demonstration Course in 2023 and the subsequent Promulgation Courses in May 2024 and September 2024 during the 4th Clinical Congress of KCS. Moreover, we will highlight the successes, challenges, and future steps for this vital initiative.

Materials and Methods: We examine the process of establishing an Advanced Trauma Life Support (ATLS) course in Kosova and creation of the necessary infrastructure and sustainability to date. Key elements include forming partnerships with international organizations such as Sanford Health and the North Dakota Chapter of American College of Surgeons with KCS, and local health authorities, identifying champions for the initiative, and engaging the diaspora in the effort. The data were prospectively collected.

OUTCOMES

The First ATLS Course in Kosova

The first ATLS® course, held as a Demonstration Course by Sanford Medical Center Fargo in 2023 with approval from the North Dakota Committee on Trauma and American College of Surgeons (ACS) International ATLS

Subcommittee, set the stage for future sustainable trauma care training in Kosova. Conducted in partnership with KCS and international experts led by team from Sanford Health, the course aimed to introduce standardized trauma care training to local healthcare providers and establish Kosova as a regional leader in trauma education. The support from the Department of Health of Prishtina Municipality and its Prishtina Urgent Center (PUC) staff, the enthusiasm of local partners, and the participation of 19 candidates from a range of medical specialties underscored the immediate need for such training in the region. This distribution highlights the broad spectrum of specialists involved in trauma care, emphasizing the importance of multidisciplinary training in managing trauma patients.

Promulgation Process ATLS Courses

After the successful completion of the demonstration course in October 2023, a complete report was sent to the International ATLS Subcommittee of Committee on Trauma (COT) of ACS. On January 18th, 2024, the said committee approved the Promulgation of ATLS to Kosova with recognition of the demonstration course as the site initiation visit.

The second ATLS® course, held from May 11-13, 2024, marked a significant step forward in the promulgation process. With the goal of certifying local instructors and further training the local course coordinator, the course was designed to solidify local capacity for trauma care education. All five local instructor candidates had completed their ATLS® Instructor Course in Greece, and four were successfully certified during the May course, with the final instructor slated for certification in the September 2024 course.

The third ATLS Course held during the 4th Annual Clinical Congress of KCS in September 2024, showed first signs of sustainability with all local staff functioning independently under supervision of US partners. The course was a complete success with 100% pass rate of both written and practical test.

Challenges and Barriers

Several challenges and barriers were identified. Language difficulties, lack of experience in test taking techniques, different expectations, and a lack of familiarity with the course structure led to challenges such as tardiness, absenteeism, and misunderstandings. These issues highlighted the need for pre-course education and materials in the local language. Additionally, the use of animal parts for surgical skills stations, while effective, proved labor-intensive and expensive for local partners, emphasizing the need for mannequins in future courses.

The second course addressed several of the challenges from the Demonstration Course. Pre-course education materials were provided in Albanian, leading to better adherence to timetables and higher overall performance. The interactive discussions, skill stations and written exam were conducted in Albanian language, significantly improving candidates' engagement and understanding. This smaller, targeted group of students was chosen to ensure focus on instruction development and certification of local instructors. Logistical improvements were also made, with the KCS administrative staff handling badges, printing, lodging, and course registration. Although mannequins had not arrived in time for the course, locally sourced animal parts continued to provide effective training, albeit labor-intensive, for surgical skills. Agreements with local institutions, such as the Municipality of Prishtina and the Hospital and University Clinical Service of Kosova (HUCSK), ensured that space and financial support were secured for future courses. A memorandum with the Municipality of Prishtina provided indefinite use of education space at the PUC free of charge; while HUCSK committed to subsidizing 40% of the course fees for public sector physicians.

Overcoming Barriers and Strengthening Local Ownership

One of the most significant challenges identified in courses was the language barrier. Many candidates struggled with the voluminous English-language course materials and with the written exams. To address this, interactive discussions, skill stations and testing were conducted in Albanian for the first time during the second course (May 2024), with plans to translate additional materials once the ATLS® Edition 11 is available. This adaptation showed positive results, leading to higher levels of candidate engagement and 100% completion and successful certification.

The progress made in certifying local instructors and training the local course coordinator, has been instrumental in establishing local ownership of the ATLS® program. The local coordinator who functioned semi-independently under the supervision of U.S. course coordinator during the second course, was able to prearrange all course needs and coordinate the third course independently, under direct supervision.

Financial Sustainability and Future Directions

The main goal of our vision since inception has been to provide a formalized and structured training for physicians dealing with injured patient. Authors believe that this can be best achieved if ATLS training is to become a requirement for all providers dealing with injured patients. So far, we have found significant goodwill from the national stakeholders and anticipate the ratification of ATLS as requirement for all providers - such as emergency physicians, general surgeons, neurosurgeons, orthopedic surgeons, and anesthesiologist, that care for injured patients in Kosova's healthcare system.

Ensuring the financial sustainability of the ATLS® program in Kosova is another key priority moving forward. The cost of the course has been set in line with similar programs in Greece and Albania. However, efforts are underway to secure broader financial support from local healthcare organizations and agencies. The goal is to have 80% of the course fees subsidized, making the training more accessible to physicians across the region. So far, HUCSK has agreed to subsidize 40% of the fees for public sector physicians, while Kosova Chamber of Physicians has shown signals in willingness to pay an additional 40% as well, leaving only 20% for the candidates.

Discussion

In this paper we describe the initial steps in the establishment of ATLS in the Republic of Kosova through partnership between Kosova College of Surgeons, Sanford Health and North Dakota Committee on Trauma. In addition, we highlighted the successes, challenges, and future steps for this vital initiative.

Developing a cohesive trauma system, establishing more specialized centers, and investing in education and training for healthcare providers are vital steps toward creating a more resilient healthcare infrastructure that can respond adequately to trauma-related challenges. Although there were many initiatives in advancing trauma and emergency care immediately after the war from various international organizations (1-3), such as establishment of a network of emergency centers from the primary health care facilities through Regional Hospitals and the University Clinical Center of Kosova in Prishtina, many of these initiatives did not translate into major improvements of care and certainly were not sustainable. A four-year Emergency Medicine residency program has been established and 19 graduates were certified based on American Board of Emergency Medicine (ABEM) examination process (4).

A transportation system is in place composed of emergency ambulances albeit in a decentralized and non-uniform fashion, while the initiative to establish a dedicated trauma and emergency care center has stalled due to legal obstacles. There were other training courses in emergency and trauma care based on International Trauma Life Support (ITLS) as part of family health care programs (5).

The establishment of the Kosova College of Surgeons represents a significant step forward in addressing the critical gaps in trauma care education within the country. This initiative aligns with the need for enhanced training programs that focus on trauma management, like the successful implementation of the Advanced Trauma Life Support (ATLS) course in other regions. By creating a structured educational framework for surgeons and healthcare professionals, the Kosova College of Surgeons aims to provide comprehensive training in trauma care that can improve clinical outcomes. (Table 1) The emphasis on evidence-based practices, standardized protocols, and hands-on training will equip medical practitioners with the skills necessary to effectively respond to trauma cases. The potential impact of this initiative is substantial. With a well-trained workforce, Kosova can enhance its capacity to manage trauma patients, reduce mortality rates, and improve overall public health. Additionally, the College can foster collaboration among healthcare providers, promote research in trauma care, and advocate for the establishment of a national trauma system.

While the initiative to establish the Kosova College of Surgeons is promising, its success will depend on adequate support in terms of resources, continued collaboration with international organizations, and commitment from the local surgeon and healthcare systems to prioritize trauma education. If these elements are effectively aligned, there is great hope that Kosova can develop a robust trauma care framework that mirrors the successes seen in other parts of the world, ultimately leading to better health outcomes for its population.

By engaging local authorities such as Ministry of Health and University Clinical Center of Kosova (UCK), as well as Kosova Chamber of Physicians to subsidize expenses of local physicians and developing its own local instructors with the help of international collaboration (United States, Albania and Greece) there is now a solid

Table 1. Candidate specialty distribution

Specialty	Course 1	Course 2	Course 3	Total
General Surgery	4	4	2	10
Emergency Physicians	4	1	5	10
Pediatric Surgery	2	1	1	4
Anesthesiologists	2	1	1	4
Orthopedic Surgeons	1			1
Vascular Surgeon	1			1
Urology			1	1
Total	**14**	**7**	**10**	**31**

base for the ATLS to be successful. In addition, promulgation of the ATLS and recognition of such process by the ACS Committee on Trauma (ACSCOT) has been a major support.

ATLS provides an evidence-based curriculum designed to equip healthcare providers with the necessary skills to assess and manage trauma patients efficiently. However, its effectiveness is significantly lessened in Kosova due to the lack of mandatory ATLS training for all healthcare providers who deal with trauma. Without uniform training, these teams are often inadequately equipped to triage and treat patients, which can lead to delays in critical interventions. Moreover, lack of trauma registry makes it impossible to evaluate and research the quality of care, both of which are requirement for any ACS certified level 1 or level 2 trauma center.

The consequences of this deficiency extend beyond individual patient experiences. The absence of standardized trauma care practices can lead to wide variations in treatment quality among practitioners, resulting in inconsistent care for trauma patients. Such variability contributes to longer hospital stays, increased rates of morbidity, and, in severe cases, higher mortality rates. These outcomes reverberate throughout the healthcare system, leading to increased healthcare costs, with some patients needing transfers out of the country—placing additional financial burdens on patients and their families, as well as the national healthcare system.

To effectively address these widespread challenges, Kosova requires a multifaceted approach. Establishing a mandatory ATLS training program for all healthcare professionals that deal with injured patients is an essential first step. Alongside this, the development of an organized trauma care framework can significantly enhance the overall response to trauma in the country. Implementing an efficient trauma care system not only improves outcomes for individual patients but also fosters community resilience and optimizes resource management, ultimately contributing to the healing process of a society still grappling with the legacies of conflict.

Conclusion

The Kosova College of Surgeons-Sanford Health ATLS® partnership is an example of international collaboration and medical diplomacy aimed at improving trauma care standards in this country in Southeastern Europe. The successful implementation of three ATLS® courses, the certification of local instructors, and the establishment of sustainable financial and logistical frameworks have laid a strong foundation for the program's future. With continued support, the future of ATLS® program in Kosova is poised to become a regional hub for trauma education, benefiting not only Kosova but also neighboring countries such as North Macedonia, Albania, and Serbia. (Table 2)

This US-Kosova partnership exemplifies the potential of global health collaborations to create lasting, meaningful change in healthcare systems, ensuring that trauma care in Kosova and the broader region continues to improve, ultimately saving lives and enhancing the quality of care for trauma patients.

Table 2. Candidate country distribution

Country	
Kosova	28
Serbia	2
N. Macedonia	1





Example of skill stations



Local and American staff