



## Advanced Trauma Life Support (ATLS) in Hungary; The First 10 Years

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### ABSTRACT

Advanced Trauma Life Support (ATLS) programs are recognized as the standard educational trauma program worldwide. Data suggest that ATLS has a positive impact on the value of trauma care. The ATLS Hungary program has been started in 2005, celebrating its 10-year anniversary this year. In the present brief communication a brief overview is provided on the program. Student evaluation and statistical data about the participants were collected throughout the 10-year history of the Hungarian program. Student evaluation shows a high level of satisfaction amongst the participating doctors. Most participants are working in higher level centers. The Hungarian program shows good quality according to the participants. Establishing at least one new center is crucial to be able to provide the course for every professional interested in it or required to take it.

**Keywords:** Advanced Trauma life support; ATLS; Trauma; Training; Hungary.

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The history of ATLS is well known to have started with the famous *Nebraska Experience* of an orthopedic surgeon, Dr. James Styner's involvement in a tragic family plane crash in rural Nebraska in 1976. Dr. Styner's patient experience of inadequate and inconsistent trauma care has facilitated the development of an educational program concerning trauma care in 1978, having been quickly accepted by the American College of Surgeons (ACS) [1].

The following decades brought a wonderful dissemination of the idea across the globe, as ATLS has been taught in 63 countries worldwide as of 2012 [1]. The intensive ATLS course includes the teaching of systematic approach to trauma care by means of simulated scenarios, practical skills teaching, lectures, and discussions, assessment including both skills examination and MCQ testing. The student course manual is being revised every 4 years to keep

the material up-to-date.

The advantages of having a systematic approach to trauma seem straightforward, however, it is quite hard to measure the impact of it on the quality of care. Mohammad et al. have performed a systematic review of the available literature about the impact of ATLS both educationally and in terms of quality of care. They have concluded that there is strong evidence supporting the educational aspects of the positive impact of ATLS, however, its effect on mortality needs to be further investigated [2]. The 2014 update of the publication of the Cochrane Database of Systematic Reviews, concerning the same topic have had a similar conclusion. They have also stated that high-quality, controlled investigation of the systemic effect of ATLS is very challenging [3]. However, there are some good quality investigations in the topic. Hashmi et al. have found that patients were 4.9 times less likely to die and 2.6 times less likely to have complications after the implementation of an ATLS-based trauma system, compared to the period before [4]. Hedges *et al.* have investigated the effect of certain ATLS-based interventions on survival of high-risk patients in a rural hospital. They have found that ATLS-based administration of blood products and patient transfer to a higher level center improved survival, underlining the positive impact of ATLS on quality of care [5]. Medical staff undergone ATLS training have also been shown to be more effective in simulated trauma scenarios by Williams *et al.*, [6].

The history of ATLS in Hungary started in 1993 with the first author of this present article having the chance to see the concept in work in Canada. This experience led to the establishment of a work-group of four Hungarian trauma surgeons at the University of Szeged (Zsolt Balogh, János Tomka, Gábor Süveges, and Endre Varga being involved). This was followed by years of hard work to make it possible to start the Hungarian ATLS program. The ACS agreed on starting the Hungarian program in 1999, and after establishing the financial and infrastructural background, the first course was held in Szeged in 2005, just a couple of years later than the first German one. A big strength of our course is the opportunity to perform procedures in the state-of-the-art animal lab of the University of Szeged. ATLS Hungary was also a founding member of ATLS Europe and is an active member of it ever since. As of 2015, Hungary is still one of the only three countries from Eastern Europe to have an ATLS program, the other two countries being Lithuania and Slovenia [7]. The 20<sup>th</sup> Hungarian course is going to be held in December, 2015. The instructors' program is also successfully running with about 25% of the participants showing instructor potential and 3 instructor courses held throughout the years.

Szeged is still the only ATLS center in Hungary, organizing 2 courses every year for 16 participants

a course. Since 2013, successful completion of an ATLS course is a prerequisite for the Hungarian state board examination in orthopedics & trauma surgery. Also, as the Hungarian emergency system is shifting to establishing central Emergency Departments replacing the old, separated emergency system for the different specialties, more-and-more residents are going to start in the field of emergency medicine, with the possibility of the ATLS course becoming a prerequisite for the board examination in emergency medicine as well. These two facts indicate that the interest in the course is going to significantly rise in the near future. The Szeged center with 2 courses a year is not going to be able to deal with this load, thus, opening 2 new course sites in other Hungarian trauma centers is compelling.

Investigating the impact of ATLS on the quality of Hungarian trauma care would be very challenging, however, after 19 successful courses and 305 participants, there are some interesting data about the Hungarian ATLS program.

It is very important to make the idea and concept of the training spread in the Hungarian trauma system. As nearly half of the participants were under 30, and as completion of an ATLS course is now a prerequisite for obtaining an orthopedics & trauma certification, we can hope that the front line of the near future of the Hungarian trauma system will bear the skills and foundations required for a state-of-the-art approach. Nearly 50% of the participants came from either a university hospital or the National Institute of Traumatology, thus representing the high levels of Hungarian trauma care. We hope to further spread the concept amongst the lower level centers.

Over 80% of the participants were working in the specialty fields of orthopedics & trauma, traumatology, anesthesiology & intensive therapy, and emergency medicine, showing the major specialties participating in trauma care in the Hungarian trauma settings.

An educational activity is very accurately judged by the satisfaction of the participants, thus it is very important for every ATLS center. This feedback can assure that the quality of the course remains on the desired level. All of the 305 participants responded positive to the question '*Have you learned new and useful information?*'. It shows that a structured educational strategy can be useful to every participant. Similarly, all of the participants responded positive to the question '*Does it worth the time spent on it?*' As high as 97% of the participants thought that the course did worth the course fee. The skills practices and simulated scenarios are very important parts of the ATLS course, but it is also very important to keep the lectures on a high level of quality. The lectures are evaluated year-to-year to keep that high level. If scores from all years are evaluated at once, none of the lectures get an average grade below 4.6 on a scale of 5 (Figure 1.).

Participants' failure is also a very important aspect

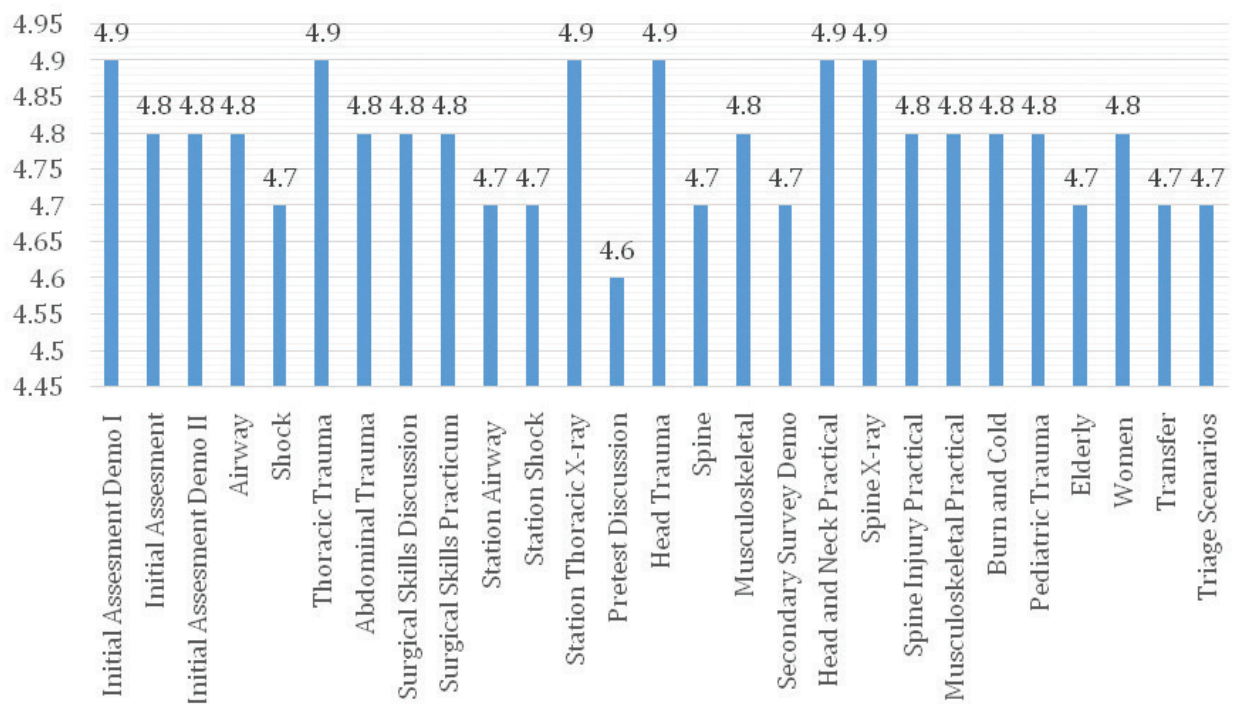


Fig. 1. Average grading of the lectures by the participants.

of a medical educational course. Only a bit over 3% of the participants failed to pass, and less than 10% had to retake either the MCQ or the practice examination. These points to the fact that until recently, taking the course was not obligatory, thus all participants were motivated. It is going to be interesting to see if the failure rate changes with the course becoming a prerequisite for the orthopedics & trauma board examination, and possibly for the emergency medicine board examination as well.

As skills-centered, practice-based, structured education gains more and more territory in both undergraduate and graduate medical education, we hope that we can build on the success of the Hungarian ATLS program and that these efforts lead to further

improvement of the Hungarian trauma system.

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**Conflict of Interest:** None declared.

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