The Rise of the Stop the Bleed Campaign in Italy

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ABSTRACT

Background: The B-Con Basic 1.0 protocol is a medical training designed to teach how to control massive external haemorrhages in emergency conditions. Spread throughout the United States since 2013, thanks to the Stop the Bleed campaign, it has seen a progressive international spread during 2016–2018. We report here data from the first 18 months of our training in Italy. **Methods:** Since January 2017, military Operators enlisted to the Volunteer Military Corps of the Italian Red Cross and registered to the ACS B-Con instructor database have provided B-Con courses. These instructors have provided extensive training, involving learners among military and civilian populations, especially health professionals and students. Further, they have obtained a formal adhesion to the National Stop the Bleed Day 2018. **Results:** Through August 2018, we trained 1186 learners in Italy on the B-Con protocol. The learners were mainly military personnel and law enforcement agents (620 [52%]) but also students and civilian health personnel (566 [48%]). **Conclusion:** The B-Con protocol has been very well received in Italy by military and police personnel. Good results have been assessed among civilian health professionals and medical students, especially by those operators involved in the field of emergency medicine.

KEYWORDS: *B-Con; bystanders; first responders; Hartford; resilience*

Introduction

The emergency treatment of posttraumatic massive external hemorrhage has been a widely debated topic, especially in the United States, for more than a decade.[1] However, only recently the need for a specific program on the subject has been understood, in the aim to raise awareness and to transfer the experience accumulated in the new millennium war contexts into civil theaters.[2]

The idea was born in the United States in 2012, following the tragic shooting at the Sandy Hook school. It has been seen on that occasion, and in subsequent events such as the terrorist attack during the Boston Marathon in 2013, that the conventional response of the rescue chain was not functional to increase the survival of the wounded.[3] The average time to be rescued by an ambulance varies from 8 minutes, in an urban context, to 15 minutes or longer for extraurban contexts. These parameters increase drastically if you find yourself in situations of a "maxi-emergency" or in unsafe scenarios, such as a terrorist attack, where the rescuers are unable to access the critical area until it has been secured. However, to be effective in the treatment of massive external hemorrhage, you must intervene in a period ranging from 3 to 8 minutes from the beginning of the bleeding, according to the site of wound.

We can therefore understand how the greatest difference can be made by those who are directly on the scene, whether they are the "bystanders," the civilians on the scene, or the "first responders," any rescue figure who first comes to the place.[4,5] However, they may undertake immediate effective treatment only if they have the necessary knowledge.[6]

In 2013, a group of physicians, rescuers, and military took part in the Joint Committee to Create a National Policy to Enhance Survivability from Mass Casualty Shooting Events, signing what was then called the Hartford Consensus (currently in its fourth revision). In the context of this document, the training protocol called B-Con (Bleeding Control Basic 1.0) was outlined, with the specific aim of training a wide spectrum of men and women, like law enforcement (LE), firefighters, and emergency medical technicians (EMTs) but also civilians without medical or tactical skills, about the specific rescue skills needed to provide immediate care to a wounded person with massive external hemorrage. A landmark of this program is the training in rapid use of arterial tourniquets, among those approved by the Committee on Tactical Combat Casualty Care, Israeli compression bandages, and hemostatic gauze, both for self-medication and for an injured person.[7]

Since 2016, this training protocol has been part of a worldwide campaign, sponsored directly by the White House, called Stop the Bleed—Save a Life; since 2017, the entire training program and the scientific updates of the B-Con protocol are also directly supervised by the American College of Surgeons.

The Rise of the Stop the Bleed Campaign in Italy

In Italy, although the basics of bleeding control were already in the specific training for combat medics and in emergency first aid courses delivered by private companies, the B-Con

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protocol was not common in 2017 for personnel who joined rescue associations and public health and nonmedical military units. Therefore, in January 2017, a group of volunteers enlisted in the Volunteer Military Corps of the Italian Red Cross (CMV CRI), an italian military corps auxiliary of the Armed Forces, started to provide courses and to teach this protocol. The aim was to teach and train to the program both civilians and military/law enforcement (LE) operators, allowing the Stop the Bleed campaign to rise and spread across the country.

This approach was possible thanks to the TCCC training courses that some of these soldiers sustained in United States, at the Cypress Creek EMS rescue association of Houston, Texas, in collaboration with the University of Texas, allowing them to be trained to the bleeding control and to join then the Stop the Bleed campaign. An initial CMV CRI staff has thus been able to acquire the qualification of B-Con Instructors, to register in the International ACS B-Con instructors database, and then to start the first basic training courses.

Teaching Military and LE Personnel

The activity was initially carried out mainly for personnel enlisted in the Armed Forces and police/LE.

The first course B-Con, addressed to the volunteer military personnel of CMV CRI, was held on 23 March 2017. On that occasion, the first 14 volunteers were formed by the first group of instructors trained in the United States. Given the positive approach, numerous courses were then delivered across the country, always addressed to the personnel of CMV CRI, until, on 1 January 2018, the National Inspectorate of the CMV CRI (General Command of Volunteer Health Reserve) assigned a mandate for the institution of a coordination group for the B-Con program, to coordinate the provision of B-Con basic 1.0 training courses for all Italian personnel enlisted in the military health reserve.

Following the recognition by the National Inspectorate of the CMV CRI of the reliability of the B-Con protocol, formal requests have been progressively presented by other Italian Armed Forces and LE to train their operational staff in the procedures of emergency rescue of the B-Con protocol. By the end of 2018, the first official training activities of such personnel were scheduled.

Teaching the Civilian Population

Instructors of B-Con, enlisted in the CMV CRI, have cooperated in a civilian capacity with numerous rescue associations since the beginning of the activities. In particular, the first course (21 January 2017) was held in collaboration with a civil rescue association of the Italian Red Cross, for a mixed group of EMTs and LEs. The first major recognition in the civilian field was recorded in November 2017, thanks to the University of Genova, Faculty of Medicine and Surgery, which accreditated this activity at the academic level for students of medicine and nursing. Training courses have been progressively delivered according to the B-Con protocol, in which these students participated in collaboration with the Advanced Simulation Center of the University of Genova (SimAv), initially taught by instructors enlisted in the CMV CRI.

The civilians who underwent the B-Con training since November 2017 have been for the vast majority medical students, as well as students from other medical professions; nevertheless, ambulance crews, heads of security, and the civilian population have also participated in these courses. The University of Genova endorsed the program through the SimAv, first through a national medical students' association and after that through a direct collaboration between the local B-Con instructors and the SimAv. Since November 2017, 16 B-Con courses have been offered, at no cost, to the students within university structures. Furthermore, several civilian rescue organizations cooperated with B-Con instructors in training ambulance crews, social workers, and nonmedical population.

The international impact of the Italian Stop the Bleed campaign has occurred both within and outside our national borders (in addition to the activities that took place in military operative areas). During the Emergency Medicine Simulation Seminary (EMSS), which took place at the SimAv in January 2018, 28 students from several European countries underwent B-Con training with military instructors. Because of this experience, a special training session was then organized in collaboration with the Plovdiv Medical University (Bulgaria) and the Bulgarian Resuscitation Council, at the end of April 2018, during which instructors from the University of Genova, also enlisted as volunteers in the CMV CRI, trained 120 Bulgarian students of medicine and nursing.

Instructors

At the beginning of our program, aside the first group of instructors trained in TCCC in the United States, other Instructors were selected only among the personnel enlisted in CMV CRI. The requirements were as follows: having attended a regular B-Con course with proficiency in theoretical and practical skills; proposing themselves voluntarily to become an instructor; accepting to deliver completely free of charge the training; and, in particular, satisfying the ACS requirements for being an instructors, also being a physician, registered nurse, EMT, or health professional with specific TCCC training. When this article was written, we had 22 B-Con instructors in the country who meet the criteria. For each course provided, we strictly adhered to an instructor-to-student ratio of 1:8.

Progressively allowing the ACS new professional figures to teach the program, we decided to keep, for the military personnel, the same condition as above. At this moment, we are planning a specific instructor course, held by a physician and registered nurses with TCCC training and at least 1 year of experience in teaching B-Con courses.

There are no limitations for civilian candidates who meet the ACS requirements to teach B-Con, but because we are not authorized to carry out proper supervision on them, we did not consider in our article the courses provided only by civilian instructors, except in the case in which cooperation between military and civilian instructors was required for specific activities.

The National Stop the Bleed Day 2018

On Saturday 31 March 2018, the National Stop the Bleed Day 2018 (NSTBD '18) took place at an international level. The event saw its conception at the end of 2017 in the United States, when a group of instructors spontaneously gathered to design a major federal training event, with the aim of attracting more attention to the issue of control and early treatment of massive external hemorrhages, emphasizing the possibility that such a nefarious event may occur in any context and not only in large-scale emergencies.[8] In view of the international

spread of the campaign "Stop the Bleed—Save a Life," however, the scope of the event soon surpassed the US borders, with the involvement of numerous countries and the coordinated participation of multiple organizations, civilian and military, public and private, for more than 800 accredited training events.

The CMV CRI formally joined the event, providing B-Con courses both on the national territory and in the Operative Area of Herat (Afghanistan), thanks to its accredited instructors. It was possible to interface with all the Armed Forces involved.

The aim of the activity was to enhance the resources available on the territory, with a goal of extending the organizational and training logistics network, rather than centralizing the activities to a single location. Therefore, training activities have been provided in several cities across the country.

The activities initially involved lectures, followed by practical tests and team-building training, during which importance was given to the psychological aspects of the emergency assistance. At the end of each course, simulations of emergency scenarios were organized, with relief operations under stress, to verify the knowledge and practical skills acquired by the learners. The participants have been 209 (overall; 74% military and 26% civilians).

Future Scenarios: Bleeding Control and "Readiness to Rescue"

In May 2018, the national course of Mine Risk Education was for the first time upgraded with the B-Con Basic 1.0 protocol. This training, periodically organized by the CMV CRI to retrain, test, and certify the operators' skills for the medical support duties in case of unexploded ordnance remediation (UOR), which occur hundreds of times every year in Italy, has the goal to assess, other than the theoretical skills and the general knowledge about the topic of UOR, the readiness of every single military volunteer to provide effective emergency medical support. During this course, for the first time three instructors of B-Con were involved, as a pilot test, to initiate an association between the two concepts of bleeding control and readiness to rescue.

The readiness to rescue concept, present in several contemporary scientific articles, identifies the individual rescuer's ability not only to provide a medical support or to perform a rescue but to analyze his or her own psychophysical ability to cope with the needs of a rescue. In 2013, Moran[9] brought data about deaths that occurred in Australia between 1980 and 2012 among rescuers in drowning emergencies. Each of those rescuers seemed to be properly trained to provide a rescue activity. Furthermore, Moran provided data from a survey conducted in Australia among 415 young males and females, commonly involved in water activity, aimed to assess the perceptions of rescue capacity. The survey suggested that many participants were not aware of the intrinsic risk of rescue activity or of their own capacity to rescue safely, mainly due to a mismatch between confidence and competence in theoretical knowledge of rescue, first aid, and the physical capacity. The assessment and control of life-threatening hemorrhagic events represent the first step to be taken in case of rescue for military activities. We considered, therefore, as essential the assessement of the consistency between the acquired theoretical-practical skills and the effective application of these in situations of fatigue and stress. The personnel participating in the course, usually involved in UOR activities, after a proper refresh of theoretical and practical training sessions to the B-Con protocol, have been tested in the application of the same skills under conditions of physical stress. The learners were asked to support the same practical test scenarios, initially in full concentration and subsequently under progressive administration of physical stress and disturbing factors. The activity has progressively brought out the complexity of maintaining fine motor skills, coordinating team activity, and maintaining optimal reaction times. The aim to work on concrete margins for improvement is in fact possible only once you understand your critical level and any shortcomings in terms of physical preparation.

After this first pilot training, an internal commission evaluated the result, showing consistent interest in our data. Under evaluation is the likelihood of upgrading the program with this training for the national training courses.

Results

Since the first course (21 January 2017) until August 2018, 58 courses have been held by italian B-Con instructors, in Italy and abroad, with 1186 participants certified as B-Con providers. Overall, 52% of these learners (620) operational personnel, as military personnel, police, or LE agents. Among these personnel, soldiers of the CMV CRI have been especially involved (51%), thanks to the national commitment to train all enlisted personnel in the protocol. LE and police personnel form the second largest group (15%), followed by the Italian army (12%). Meaningful data come from the Operative Area of Herat, where the personnel enlisted in several different armies were trained by Italian B-Con instructors (Table 1; Figures 1 and 2).

TABLE 1 *Overall Data on the Population Trained During the First 18 Months of the Stop the Bleed Campaign in Italy*

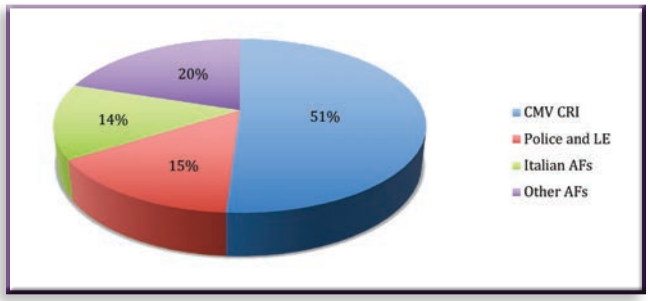
Population Trained	Overall, n
Overall learners	1186
Operational personnel	620
• CMV CRI	316
• Italian Army	74
• Other Italian AFs	13
• Other AFs	124
• Police and LE	93
Civilians	566
• EMTs, FF	185
• Students	286
• Physicians, nurses	75
• Other civilians	20

AF, Armed Force; CMV CRI: Volunteer Military Corps of the Italian Red Cross; LE, law enforcement; EMT, emergency medical technician; FF, firefighter.

The civilians who have undergone a B-Con basic course represented 48% (566) of the learners, involving medical personnel, medical students, sanitary professionists, firefighters, EMTs. and the general population. The student population accounted for the 52% of the civilians trained, especially medical students, with a minority of nursing, pediatric nursing, obstetrics, and physiotherapy students.

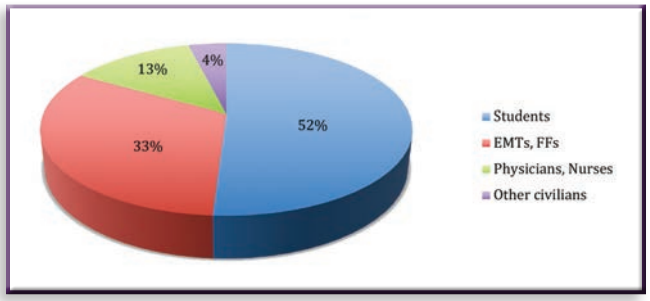
At the same time, several learners have been progressively involved in teaching, creating a large pool of instructors, for military and civilian purposes.

FIGURE 1 *Operational personnel trained January 2017–August 2018 (including foreign AFs' troops).*



AF, Armed Force; CMV CRI: Volunteer Military Corps of the Italian Red Cross; LE, law enforcement.

FIGURE 2 *Civilian population trained January 2017–August 2018 (including foreigner medical students).*



EMT, emergency medical technician; FF, firefighter.

Since the beginning of the Italian campaign, the demand from the civilian population for the courses has been limited by the lack of civilian instructors. In Genova, the campaign is finding that cooperation with the medical university is paying off in a high number of civilians trained within university structures and with a growing pool of local B-Con providers and instructors in training, especially among medical students(Figures 3 and 4).

Discussion

The results obtained in Italy with the diffusion of the Stop the Bleed—Save a Life campaign have been defined as "striking" at the international level. On 15 March 2018, the dedicated commission of the American College of Surgeons published, on the telematic portal www.bleedingcontrol.com, the first report of the diffusion of the campaign, according to which Italy ranked the fifth country in the world and second in Europe, behind only Spain, in number of trained learners. These numbers, however, compared with the data recorded in the Italian CMV CRI database, showed that Armed Forces, police corps, and health professionists were the main learners interested in the activities, whereas the spread of the project throughout the general civilian population still appeared very limited, although the tools used for communication (social media) had immediately guaranteed a good territorial coverage and sufficient visibility. The total gratuity of the activities (according to international regulations) did not appear to captivate the population. This appeared in contrast to the main objective of the campaign, namely, to spread this knowledge among the civilian population above all.

The great importance of the event NSTBD '18 was therefore precisely that of allowing for the first time a large number of civilians, not usually involved in rescue activities, to become aware of the importance of the project, thanks to the

FIGURE 3 *Group of military personnel enlisted to the Volunteer Military Corps of the Italian Red Cross after a B-Con training course.*

FIGURE 4 *A team of emergency medical technicians and medical students trained to the B-Con protocol. Genova, Italy.*

simultaneous presence of courses in many areas, to the media coverage given to the event, and to the promotional activity carried out directly by the volunteers of the CMV CRI; this allowed us to approach a field seen as far from everyday life.

It was also possible to confirm, in the same circumstance, the manifest interest of Armed Forces and police corps of our country to the project; thanks to the easy access to the devices and the relatively limited medical knowledge and skills required to understand and replicate the rescue maneuvers, the operators used to report to the instructors an increase in their feeling of resilience to deal with adverse events or injuries, which could affect either the operator himself or a teammate.

Conclusion

Starting as a small pilot project, the B-Con protocol has then spread across Italy and let the Stop the Bleed campaing rise as a concrete reality, aiming actually to be developed as a standard formation for those ones involved in public health, public security, and military activities.

The B-Con program is now a recognized formation in Italy for the volunteer enslisted to the CMV CRI, in which a dedicated coordination group has been established, and it is progressively spreading among Armed Forces, police, and LE. The future aims in the military field, in help of those operators for whom specific TCCC training is not provided, will be to push the training in stressing scenarios, to assess the readiness for each operator to provide this kind of skills.

Among the civilian population, a large group of professionals is involved, and the number of health personnel asking for this formation is growing. If the B-Con course is approved within the medical academic itinere, this would without a doubt increase the number of providers as well as the population trained. Nevertheless, the shift from a sanitary target to the general population is still under way.

The results obtained with the participation of the general civilian population at the NSTBD '18 event appeared satisfactory; therefore, the hope is that, with the support of the administrations, it will be possbile to continue the path traced by the NSTBD '18 event, spreading a culture of awareness raising to the issue for those who carry out activities and for those for whom the skills could be determinant in case of need, such as volunteer rescuers, teachers, mountain guides, to name a few.

Disclosure

The authors have indicated they have no financial relationship relevant to this article to disclose. This article, its development, and the data brought have been reviewed and approved by the National Inspectorate of the Volunteer Military Corps of the Italian Red Cross.

Author Contributions

All the authors provided training courses and collected the data. VD and TL conceived the study concept, BM and LE analyzed the data, VD wrote the first draft, and all the authors read and approved the final manuscript.

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