

The Stop the Bleed Initiative

Translating lessons from military casualty care to improve national preparedness and resilience.

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In response to the President's 2011 National Preparedness Policy, the White House National Security Council staff and its Office of Medical Preparedness Policy recently launched a national campaign referred to as *Stop the Bleed*.¹ The initiative is the result of a federal interagency effort to build resilience and save lives by empowering the American public to respond to and stop life-threatening bleeding after unintentional injury, acts of violence, or natural disasters. More relevant after the attacks in Paris, this campaign is similar to the movement that empowered bystanders with basic CPR skills and revolutionized the out-of-hospital response to cardiac arrest. However, unlike efforts taken to teach CPR, the Stop the Bleed initiative was born from the military's management of the large burden of injury during the wars in Afghanistan and Iraq. In this context, it represents the translation or giving back of lessons learned on the battlefield to the American public. To better understand the origins and intent of the Stop the Bleed initiative, several facets of the program should be considered.

First and foremost, the initiative is based on a decade or more of research by the military to identify and mitigate combat-related morbidity and mortality among injured service personnel. In this effort, providers and researchers more specifically characterized the significance of compressible bleeding as a cause of potentially preventable death and acted with urgency to reduce its impact on injured troops. Although tourniquets were not new at the beginning of the wars, their use had mostly been abandoned prior to 2001. Faced with a new and unprecedented burden of severe extremity injury, vascular trauma, and hemorrhage from explosives and high-velocity gunshot wounds, the military reappraised its stance and reengineered, tested, and deployed tourniquets as well as new hemostatic bandages. These components were also packaged in individual first aid kits that provided every war fighter legitimate bleeding control capability. Finally, the military implemented newly enhanced tactical combat casualty care (TCCC) training to medical and nonmedical forces. This form of "bystander"

training emphasized immediate recognition and control of bleeding using the newly provided materials.

During the later stages of the wars, an important study by Kotwal et al showed that these efforts paid off and that implementing TCCC training and providing war fighters, combat medics, corpsmen, and medical technicians with the new hemostatic materials, tourniquets, and hemostatic bandages, saved lives.² In what was effectively its own Stop the Bleed campaign, the military demonstrated the power of evidence-based decision making, matériel development, and training to decrease preventable deaths on the battlefield. Although not all aspects of this experience apply to the civilian setting, it is a relevant narrative for the country and one that was central in the development of the Stop the Bleed initiative.

The military's experience with rapid bleeding control is not only relevant, but timely. As combat operations ended in Iraq and Afghanistan, the impact of severe injury became increasingly apparent to the American and international public. Along with the high-profile nature of active shooter incidents and bombings, data now indicate that injury is the leading cause of death to Americans aged 1 to 45 years and the number one cause of lost productive life-years. During the same decade as the wars, civilian trauma deaths increased at twice the rate of population growth. Tragic events such as those in Newtown, Boston, Charleston, Paris, and now San Bernadino have convinced many in the public to become prepared and to be resilient. Although it's difficult to estimate how many lives can be saved by improving awareness of and response to severe bleeding from trauma, it could amount to thousands each year.

Regardless of actual number of lives saved from the Stop the Bleed initiative, its emphasis on citizen engagement should improve resiliency and foster confidence in the public. History has shown that an empowered public is a better-performing public. Phrases or symbols such as "Let's Roll," "NYFD," and "Boston Strong" underscore the fact that many citizens will capably respond and even perform heroic acts if they know what to do. Additionally, a public that feels informed, enabled, and involved is better positioned to respond to large-scale challenges than one that is not. Although community resilience is difficult to quantify

before the fact, it stands to reason that the resilience building incorporated in the Stop the Bleed initiative should increase the public's willingness and ability to respond to scenarios of life-threatening bleeding. The result should be a more confident, empowered, and resilient nation.

Part and parcel with the Stop the Bleed initiative comes a heightened awareness of prehospital mortality in the civilian setting as well as an appropriate focus on providing the public with the materials it needs to improve a bystander's ability to stop hemorrhage. Although studies have examined causes of preventable prehospital mortality from injury in the United States, few have been multidisciplinary or comprehensive. If the military's research on preventable prehospital deaths from injury is any indication, there stands to be a sizable, and yet, unrecognized burden of preventable death from bleeding in the civilian setting.

Finally, use of commercially manufactured tourniquets, gauze materials (with or without hemostatic agents), and larger bandages have not been previously highlighted in a national preparedness campaign such as this. In this context, it would be a relevant, if not desirable, second-order consequence of this initiative if a new bar was set that helped characterize a baseline standard of utility and effectiveness for devices used to control bleeding. For example, a bleeding control kit should contain more than just small 2- X 2-inch gauze pads, bandages, and antibiotic ointment. While not the primary mission of the Stop the Bleed initiative, it stands to reason that its emphasis and the promulgation of information resulting from its conduct will stimulate a reexamination of these devices—one that may reduce the number of imitation or bogus devices or ill-fitted kits that are useless for life-threatening hemorrhage.

Recognizing the imperfect nature of primary preventative strategies that preclude injury from ever happening and the life-threatening reality of some type of wounds, the military adapted its response to reduce death on the battlefield. Given the public's determination to act, there's reason to believe that, if made more aware and better equipped, it too can learn to recognize and respond to scenarios of bleeding and save lives. The Stop the Bleed campaign aims to build this public awareness and improve preparedness in the face of accidents, acts of violence, and natural disasters. The initiative has as its foundation the sacrifices of personnel injured or killed during the recent wars and represent their giving back an important and timely lesson to the nation. ■

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1. Pope A. Don't be a bystander: find out how you can "stop the bleed." White House Blog. 2015. Available at: <http://www.whitehouse.gov/blog/2015/10/06/stop-bleed>. Accessed December 29, 2015.

2. Kotwal RS, Montgomery HR, Kotwal BM, et al. Eliminating preventable death on the battlefield. Arch Surg. 2011;146:1350-1358.