The Hartford Consensus III: Implementation of Bleeding Control

by Lenworth M. Jacobs, Jr., MD, MPH, FACS,

and the Joint Committee to Create a National Policy to Enhance Survivability from Intentional Mass-Casualty and Active Shooter Events

Recent events have shown that, despite the lessons learned from more than 6,800 U.S. combat fatalities over the last 13 years, opportunities exist to improve the control of external hemorrhage in the civilian sector.

Editor's note: The Joint Committee to Create a National Policy to Enhance Survivability from Intentional Mass-Casualty and Active Shooter Events developed the following call to action at its April 14 meeting in Hartford, CT. This committee meeting, chaired by American College of Surgeons (ACS) Regent Lenworth M. Jacobs, Jr., MD, MPH, FACS, focused on implementation of strategies for effective hemorrhage control. The deliberations of the group yielded the Hartford Consensus III document. This report was presented at a White House roundtable forum on April 29, which included representatives from 35 medical and surgical, nursing, law enforcement, fire, emergency medical services (EMS), and other stakeholder organizations (see pages 22 and 24 for lists of participating organizations and agencies). The participants unanimously endorsed the principles set forth in the Hartford Consensus III. The following is the Hartford Consensus III, edited to conform with *Bulletin* style.

Our nation's threat from intentional mass-casualty events remains elevated. Enhancing public resilience to all such potential hazards has been identified as a priority for domestic preparedness. Recent events have shown that, despite the lessons learned from more than 6,800 U.S. combat fatalities over the last 13 years, opportunities exist to improve the control of external hemorrhage in the civilian sector.* These opportunities exist in the form of interventions that should be performed by bystanders known as immediate responders and professional first responders, such as law enforcement officers, emergency medical technicians (EMTs), paramedics, and firefighters (EMS/fire/rescue), at the scene of the incident.

The Joint Committee to Create a National Policy to Enhance Survivability from Intentional Mass-Casualty and Active Shooter Events was founded by the ACS. The committee met twice in 2013, making specific recommendations and issuing a call to action. The deliberations of the committee have become known as the Hartford Consensus. A third meeting was convened on April 14. This Hartford Consensus III meeting focused on implementation strategies for effective hemorrhage control.

The overarching principle of the Hartford Consensus is that in intentional mass-casualty and active shooter events, no one should die from uncontrolled bleeding. An acronym to summarize the necessary response is THREAT:

- **T**hreat suppression
- **H**emorrhage control
- **R**apid **E**xtrication to safety
- **A**ssessment by medical providers
- **T**ransport to definitive care

The Hartford Consensus calls for a seamless, integrated response system that includes the public, law enforcement, EMS/fire/rescue, and definitive care to employ the THREAT response in a comprehensive and expeditious manner.

Three levels of responders

There are different levels of responders in an intentional mass-casualty or active shooter event:

- Immediate responders: The individuals who are present at the scene who can immediately control bleeding with their hands and equipment that may be available
- Professional first responders: Prehospital responders at the scene who have the appropriate equipment and training
- Trauma professionals: Health care professionals in hospitals with all of the necessary equipment and skill to provide definitive care

Immediate responders

One goal of the Hartford Consensus III is to empower the public to provide emergency care. During intentional mass-casualty events, those present at the point

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*Holcomb JB, Hoyt DB. Comprehensive injury research. *JAMA*. 2015; 313(14):1463-1464.

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JOINT COMMITTEE TO CREATE A NATIONAL POLICY TO ENHANCE SURVIVABILITY FROM INTENTIONAL MASS-CASUALTY AND ACTIVE SHOOTER EVENTS

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Hartford Consensus III participants. Seated, left to right: Drs. McSwain, Warshaw, Jacobs, Woodson, Brinsfield, and Levy; and Mr. Elliott. Standing left to right: Dr. Rhee, Mr. Mitchell, Drs. Eastman, Conn, O'Connor, Stewart, Butler, Burns, Weireter, Hunt, Holcomb, and Fabbri; and Commander Anderson.

of wounding have often proven invaluable in responding to the initial hemorrhage control needs of the wounded. Traditionally thought of as "bystanders," these immediate responders should not be considered passive observers and can provide effective lifesaving first-line treatment.

Immediate responders contribute to a victim's survival by performing critical external hemorrhage control at the point of wounding and prior to the arrival of traditional first responders. Immediate responders contribute to what is the critical step in eliminating preventable prehospital death: the control of external hemorrhage.

The Hartford Consensus III recognizes the vital role that immediate responders play in responding to mass-casualty events. They make major contributions to improving survival from these incidents. However, the Hartford Consensus III does not advocate that members of the public enter areas of direct threat or imminent danger.

Good Samaritan laws have been effective in empowering the public to become involved in the immediate response to a victim of cardiac arrest or choking by the initiation of cardiopulmonary resuscitation and the Heimlich maneuver, respectively. The Hartford Consensus recommends that these legal protections be extended to include the provision of bleeding control.

Professional first responders

Professional first responders include law enforcement and EMS/fire/rescue. As indicated by THREAT, law enforcement must suppress the source of wounding if the shooter is still active and then, because they are usually the initial first responders on the scene, must act to control external hemorrhage. Victims with life-threatening external bleeding must be treated immediately at the point of wounding. All responders should be educated and have the necessary equipment to provide effective external hemorrhage control. Continued emphasis must be on the integration of the immediate responders, law enforcement, and EMS/fire/rescue to optimize rapid patient assessment, treatment, and transport to definitive care at the nearest appropriate hospital.

Building educational capabilities

Education in hemorrhage control can take many forms and should be offered using various modalities. Established education programs for individuals, communities, and professional responders can be modified to include effective external hemorrhage control techniques. The Bleeding Control for the Injured (B-Con) course offered by the National Association of Emergency Medical Technicians is an example of a newly created program that is appropriate for training individuals who have little or no medical background. Other methods such as public service announcements, slogans, advertising, and entertainment media should be used to convey the message that bleeding control is a responsibility of the public and is within their capabilities.

The public needs to be empowered to engage in lifesaving actions. This training should be included as part of preparing for situations involving other

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ROUNDTABLE ON BYSTANDERS: OUR NATION'S IMMEDIATE RESPONDERS

PARTICIPANTS

- Air Medical Physician Association
- American Academy of Physician Assistants
- American Ambulance Association
- American Association of Critical Care Nurses
- American Association for the Surgery of Trauma
- American College of Emergency Physicians
- American College of Surgeons
- American Heart Association
- American Hospital Association
- American Nurses Association
- American Osteopathic Association
- American Physical Therapy Association
- American Public Health Association
- American Trauma Society
- Association of Air Medical Services
- Association of State and Territorial Health Officials
- Eastern Association for the Surgery of Trauma
- Emergency Nurses Association
- Emergency Medical Services Labor Alliance
- International Academies of Emergency Dispatch
- International Association of Chiefs of Police
- International Association of Emergency Managers
- International Association of Emergency Medical Services Chiefs
- International Association of Firefighters
- International Association of Fire Chiefs
- Major Cities Chiefs Association
- National Association of Emergency Medical Technicians
- National Association of School Nurses
- National Association of State EMS Officials
- National Athletic Trainers Association
- National Emergency Management Association
- National Volunteer Fire Council
- Society of Emergency Medicine Physician Assistants
- Society of Trauma Nurses
- Trauma Center Association of America
- White House personnel
- Interagency Bystander Workgroup team leaders
- Federal invitees

potential hazards, including everyday events that may produce trauma and hemorrhage. For professional first responders, more advanced courses may offer additional options to control life-threatening external hemorrhage. All formal training should have specific objectives and train to competency. For professional responders, the training must be efficient and cost-effective. Ultimately, integrated training exercises must be conducted that include all levels of responders.

Specific educational content for immediate responders should include:

- Actions to ensure personal safety
- Appropriate interactions with law enforcement, EMS/fire/rescue, and medical personnel
- How to identify bleeding as a threat to life
- Use of hands to apply direct pressure
- Proper use of safe and effective hemostatic dressings
- Proper use of effective tourniquets
- Use of improvised tourniquets as a last resort

For professional first responders, educational content should include:

- Actions to ensure personal safety
- Coordination and integration of all responders
- Communication among all responders
- Appropriate interactions with immediate responders
- Application of THREAT principles
- Proper use of direct pressure
- Proper use of safe and effective hemostatic dressings
- Proper use of effective tourniquets

It is appropriate to use existing national organizations to widely disseminate the principles embodied in these education initiatives.

JAMES BROOKS HART, CMI

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One-handed tourniquet application

Building equipment capabilities

Immediate responders need to recognize that applying pressure to a bleeding vessel is the appropriate first action to take and that their hands are a first-line resource. In most cases, control of external hemorrhage can be accomplished by applying direct pressure on the bleeding vessel.

Hemostatic dressings and tourniquets may be needed to effectively stop bleeding. For this reason, the Hartford Consensus recommends that all police officers and any concerned citizens carry a hemostatic dressing, a tourniquet, and gloves. This guideline should also apply to all EMS/fire/rescue personnel. Ground and air medical transport vehicles should carry multiple dressings and tourniquets based upon local need. In addition, bleeding control bags should be accessible in public places as determined by a local needs assessment. Potential sites for bleeding control bags include shopping malls, museums, hospitals, schools, theaters, sports venues, transportation centers (such as airports, bus depots, and train stations), and facilities with limited or delayed access. All hemostatic dressings and tourniquets must be clinically effective as documented by valid scientific data. The Tactical Combat Casualty Care guidelines for the U.S. military contain objective evidence to support the safety and efficacy of the various options for tourniquets and hemostatic dressings.

Contents of the bleeding control bags should include the following:

- Pressure bandages
- Safe and effective hemostatic dressings
- Effective tourniquets
- Personal protective gloves

Placement of bleeding control bags should be as follows:

- Next to all automatic external defibrillators based on local need
- Immediately recognizable visually or via a Web application
- Secure but accessible locations
- Able to be used within three minutes

Building resources for bleeding control programs

Procurement of equipment and training for bleeding control requires action at the federal, state, and local levels, as well as in the private sector. Tourniquet and hemostatic dressing procurement should reflect either the evidence and experience that the U.S. military has gained in the last 13 years of war or scientific evidence that becomes available. Federal agencies should make elimination of preventable death from hemorrhage a priority issue that will influence funding. At the

Immediate responder hemorrhage control

state and local levels, government should interact with the private sector to identify potential risks at public venues and workplaces. It is also important to note that municipalities can engage in fundraising activities at the local level to procure equipment. Professional organizations should set standards that encourage education, equipment, and training for immediate responders, which should be offered as a measure of public safety. Volunteers can be a resource to provide the training.

Considerations for the development and sustainability of bleeding control programs include the following:

- Using clear and concise messaging that bleeding control is an issue for public and private sectors
- Engaging the private sector, including businesses and trade associations
- Appealing to philanthropic organizations
- Applying for grant funding from government and private agencies
- Involving professional, community, social, and faith-based organizations

Conclusion

The most significant preventable cause of death in the prehospital environment is external hemorrhage. As demonstrated by guidelines enacted by the military, widespread bleeding control is critical to saving lives. Our nation has a history of learning hard lessons from wartime experiences; the case for hemorrhage control is no different. The Hartford Consensus directs that all responders have the education and necessary equipment for hemorrhage control and strongly endorses civilian bystanders to act as immediate responders. Immediate responders represent a foundational element of the ability of the U.S. to respond to these events and are a critical component of our ability to build national resilience. Immediate responders must be empowered to act, to intervene, and to assist.

We are a nation of people who respond to others in need. It is no longer sufficient to "see something, say something." Immediate responders must now "see something, do something." ♦

Author's note