First Aid: The Forgotten Topic?

Presented By:
Jonathan L. Epstein, MEMS, NRP
Richard Bradley, MD, FACEP

American Red Cross

Conflict of Interest and Disclosures

Jonathan L. Epstein:

- American Red Cross: Senior Director of Science and Content Development
- International Trauma Life Support (ITLS): Chair, Board of Directors.

Richard N. Bradley:

- University of Texas Health Sciences Center at Houston and McGovern Medical School: Professor of Emergency Medicine and Chief of EMS and Disaster Medicine.
- American Red Cross: Scientific Advisory Council - Chair, Resuscitation Subcouncil

Today's Discussion

- CPR/AED versus First Aid: Science, Technology and Education
- Hemorrhage Control Strategies in the Workplace: Tourniquets and Hemostatic Dressings
- Stop the Bleed – The new educational focus for the workplace?

Poll Every Where Questions

- Take out your mobile device or web based device if you have one available.

- Text JONATHANEPST738 to 22333 to join the poll.
- or
- PollEv.com/jonathanepst738

Let's Get Going…

A few questions to learn about you and provoke some thoughts as we get started…

First Aid: The Forgotten Topic

- Question #1:

  Tell me about yourselves? What is your primary work role?

First Aid: The Forgotten Topic

- Question #2:

  How long has first aid training existed?

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- Question #3:

Is CPR a First Aid Skill?

First Aid: The Forgotten Topic

- Question #4:

What % of workplace level (trained lay responders) participated in a first aid only course compared to a CPR only course last year?

Deaths in the United States

10 Leading Causes of Death by Age Group, United States – 2015

	Age Groups										
Rank	**<1**	**1-4**	**5-9**	**10-14**	**15-24**	**25-34**	**35-44**	**45-54**	**55-64**	**65+**	**Total**
1	Congenital Anomalies 4,825	Unintentional Injury 1,235	Unintentional Injury 755	Unintentional Injury 763	Unintentional Injury 12,514	Unintentional Injury 19,795	Unintentional Injury 17,818	Malignant Neoplasms 43,054	Malignant Neoplasms 116,122	Heart Disease 507,138	Heart Disease 633,842
2	Short Gestation 4,084	Congenital Anomalies 435	Malignant Neoplasms 437	Malignant Neoplasms 428	Suicide 5,491	Suicide 6,947	Malignant Neoplasms 10,909	Heart Disease 34,248	Heart Disease 76,872	Malignant Neoplasms 419,389	Malignant Neoplasms 595,930
3	SIDS 1,568	Homicide 369	Congenital Anomalies 181	Suicide 409	Homicide 4,733	Homicide 4,863	Heart Disease 10,387	Unintentional Injury 21,499	Unintentional Injury 19,488	Chronic Low. Respiratory Disease 131,804	Chronic Low. Respiratory Disease 155,041
4	Maternal Pregnancy Comp. 1,522	Malignant Neoplasms 354	Homicide 140	Homicide 158	Malignant Neoplasms 1,469	Malignant Neoplasms 3,704	Suicide 6,936	Liver Disease 8,874	Chronic Low. Respiratory Disease 17,457	Cerebro-vascular 120,156	Unintentional Injury 146,571
5	Unintentional Injury 1,291	Heart Disease 147	Heart Disease 85	Congenital Anomalies 156	Heart Disease 997	Heart Disease 3,522	Homicide 2,895	Suicide 8,751	Diabetes Mellitus 14,166	Alzheimer's Disease 109,495	Cerebro-vascular 140,323
6	Placenta Cord. Membranes 910	Influenza & Pneumonia 88	Chronic Low. Respiratory Disease 80	Heart Disease 125	Congenital Anomalies 386	Liver Disease 844	Liver Disease 2,861	Diabetes Mellitus 6,212	Liver Disease 13,278	Diabetes Mellitus 56,142	Alzheimer's Disease 110,561
7	Bacterial Sepsis 599	Septicemia 54	Influenza & Pneumonia 44	Chronic Low Respiratory Disease 93	Chronic Low Respiratory Disease 202	Diabetes Mellitus 798	Diabetes Mellitus 1,986	Cerebro-vascular 5,307	Cerebro-vascular 12,116	Unintentional Injury 51,395	Diabetes Mellitus 79,535
8	Respiratory Distress 462	Perinatal Period 50	Cerebro-vascular 42	Cerebro-vascular 42	Diabetes Mellitus 196	Cerebro-vascular 567	Cerebro-vascular 1,788	Chronic Low. Respiratory Disease 4,345	Suicide 7,739	Influenza & Pneumonia 48,774	Influenza & Pneumonia 57,062
9	Circulatory System Disease 428	Cerebro-vascular 42	Benign Neoplasms 39	Influenza & Pneumonia 39	Influenza & Pneumonia 184	HIV 529	HIV 1,055	Septicemia 2,542	Septicemia 5,774	Nephritis 41,258	Nephritis 49,959
10	Neonatal Hemorrhage 406	Chronic Low Respiratory Disease 40	Septicemia 31	Two Tied: Benign Neo./Septicemia 33	Cerebro-vascular 166	Congenital Anomalies 443	Septicemia 829	Nephritis 2,124	Nephritis 5,452	Septicemia 30,817	Suicide 44,193

Data Source: National Vital Statistics System, National Center for Health Statistics, CDC.
Produced by: National Center for Injury Prevention and Control, CDC using WISQARS™.

Centers for Disease Control and Prevention
National Center for Injury Prevention and Control

American Red Cross

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Age Groups								
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Unintentional Injury Deaths

What is the leading cause of preventable and unintentional injury deaths?

- Falls?
- Motor Vehicle?
- Poisoning?

All Require Some Form Of First Aid To Help Prevent Death

First Aid Science is Evolving

- First Aid Consensus on Science with Treatment Recommendations
  - 2005 National First Aid Science Advisory Board
  - 2010 International First Aid Science Advisory Board
  - 2015 ILCOR First Aid Taskforce
- American Heart Association and American Red Cross First Aid Guidelines

Technology

- Product development has focused on CPR and AED devices:
  - New generations of manikin’s, AEDs and CPR devices continuously being developed..

Technology

- First aid devices lag behind, but there are signs of life with hemorrhage control.

A Focus on Bleeding and Hemorrhage Control

This is why first aid is important.

(At least one reason)

It's All About Pressure

Direct Pressure

Hands, Dressings and Bandages

Indirect Pressure

Tourniquets and other devices

Bleeding Kills

- Hemorrhage is the second-leading cause of early deaths among injured.

Mortality from Isolated Civilian Penetrating Extremity Injury

W.C. Dorlac, MD, M.E. DeBakey, J.B. Holcomb, MD, S.P. Fagan, MD, K.L. Kwong. MD. G.R. Dorlac. MD. M.A. Schreiber, MD, D.E. Persse, MD, F.A. Moore, MD, and K.L. Mattox, MD *J Trauma.* 2005;59:217–222.

- 75,000 trauma patients at the two level one trauma centers in Houston from August 1994 to December 1999.
- 0.2 per thousand trauma patients at a level one trauma center die of isolated penetrating extremity injuries.
- Population incidence was 0.1 per 100,000 persons per year
- Average age was 31 years.
- 50% of fatal isolated extremity injuries were from gunshot wounds.
- 71% of the injuries were in the lower extremity.
- Average scene time was 10 minutes and transport time was 14 minutes.
- 86% has signs of life in the field but none had a pulse at hospital arrival.
- 29% had no documented hemorrhage control.

Gunshot Wound: Does This Person Need Bleeding Control?

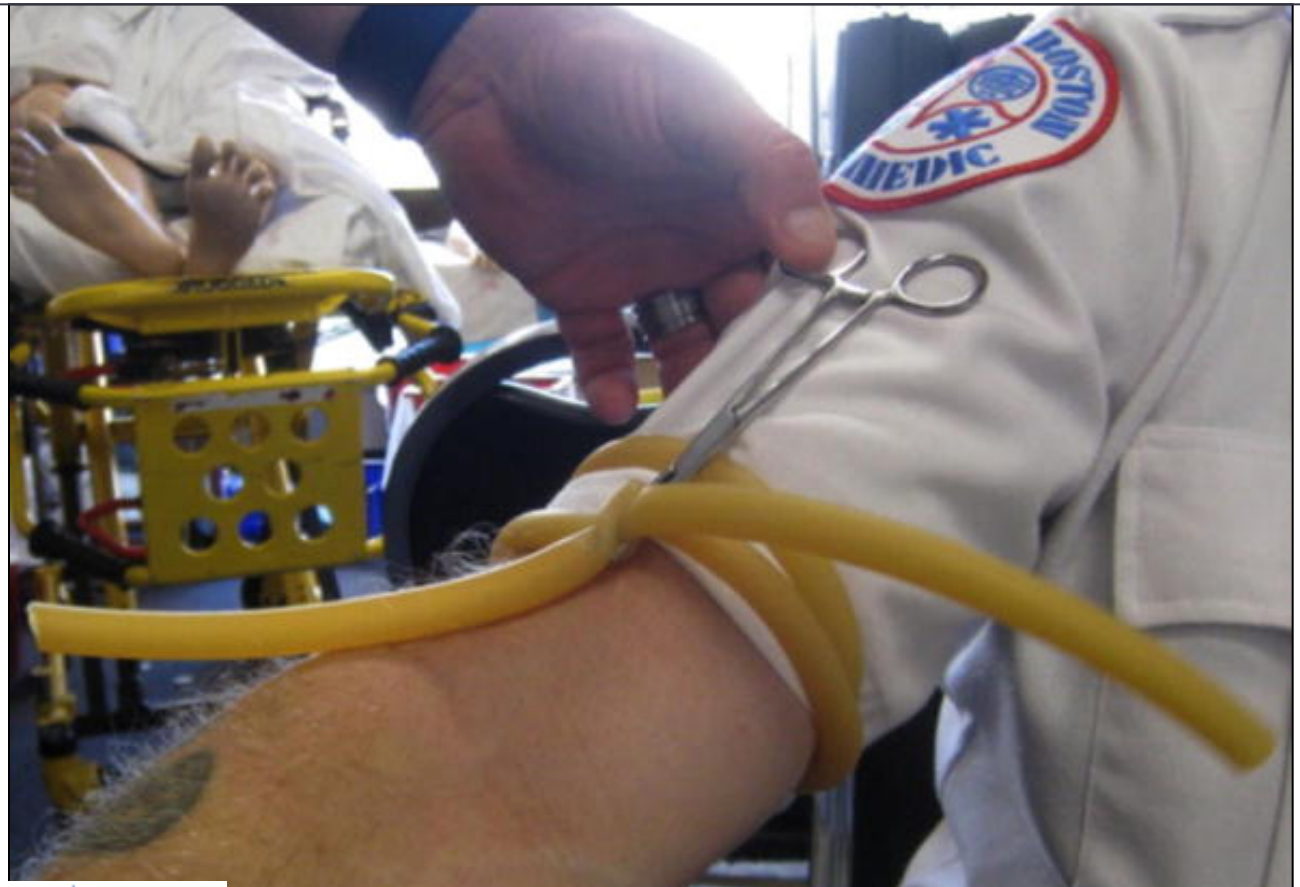
"GSW to thigh," by Richard N. Bradley © 2017

Boston Marathon Bombing

"KRON 4 Coverage of the Boston Marathon Bombings" by A Name Like Shields Can Make You Defensive is licensed under CC BY 2.0

Tourniquet use at the Boston Marathon bombing: Lost in translation

King, David; Larentzakis, Andreas; Ramly, Elie. Journal of Trauma and Acute Care Surgery. 78(3):594-599, March 2015. DOI: 10.1097/TA.0000000000000561



Typical EMS improvised tourniquet.

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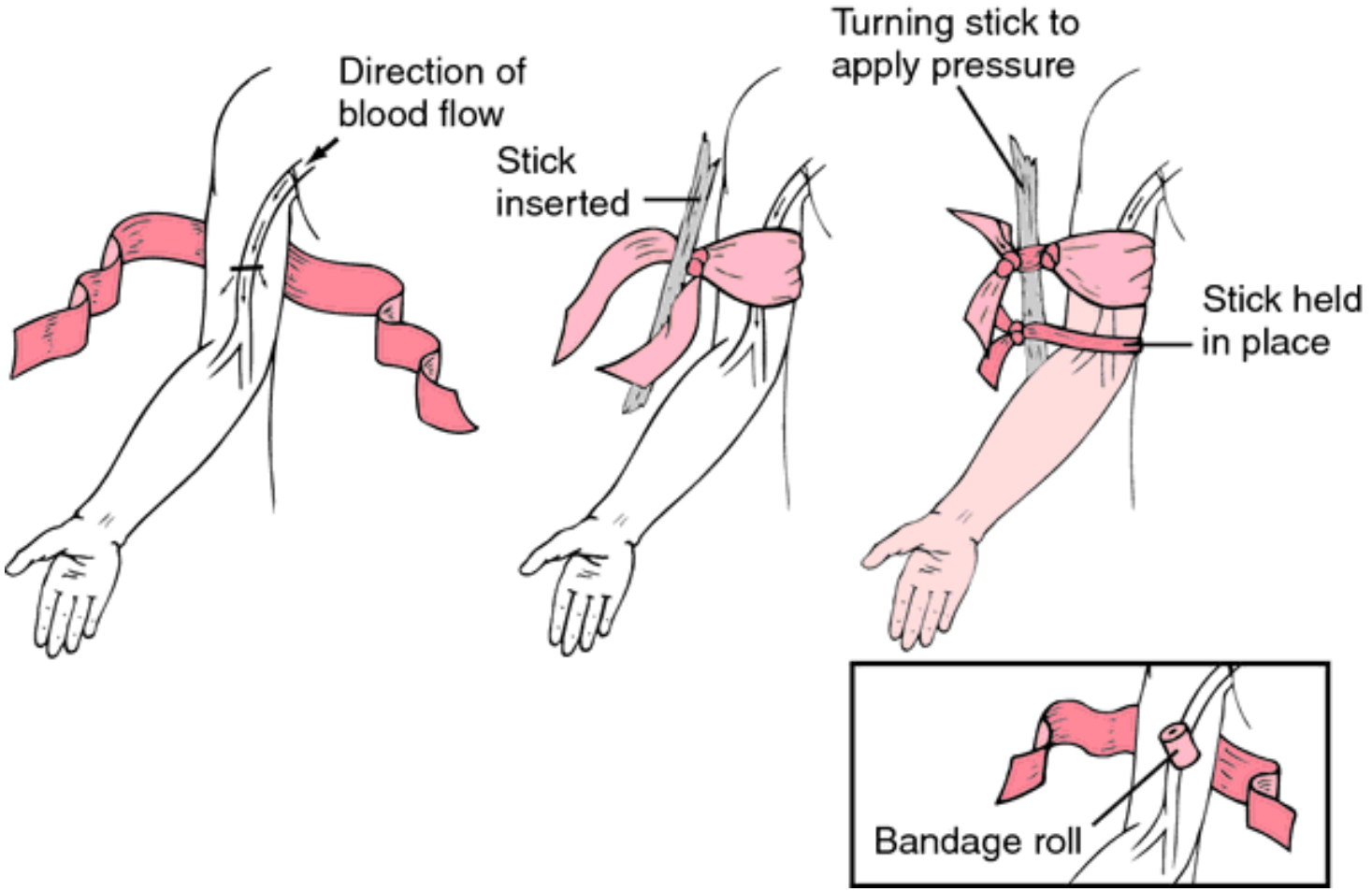
Improvised Tourniquet



"Triangular bandage," by ZigZag. Image used under the provisions of the US Fair Use Act.

Tourniquets

Survival With Emergency Tourniquet Use to Stop Bleeding in Major Limb Trauma

Kragh, John; Jr MC, USA; Walters, Thomas; Baer, David; Fox, Charles; MC, USA; Wade, Charles; Salinas, Jose; Holcomb, John; MC, USA. Annals of Surgery. 249(1):1-7, January 2009. DOI: 10.1097/SLA.0b013e31818842ba

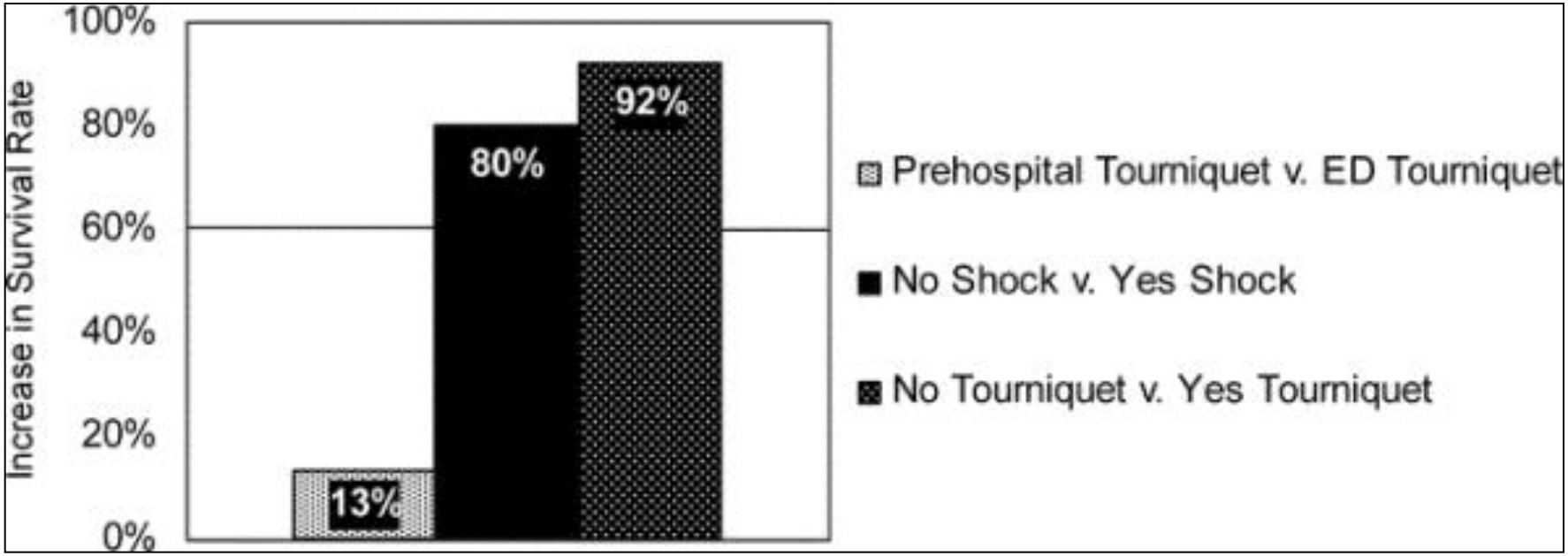


FIGURE 3. Increase in survival rate by tourniquet use. By breaking down, the tourniquet use by whether the patient was prehospital or ED, whether there was shock present or absent at the time of application, and whether tourniquets were used or not, a comparison of raw differences in survival rates indicates that the survival benefit to tourniquet use is more strongly related to tourniquet use before the patient has progressed to shock than to prehospital use.

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What's Wrong With This Picture?

"CAT on thigh," by Richard N. Bradley. © 2017

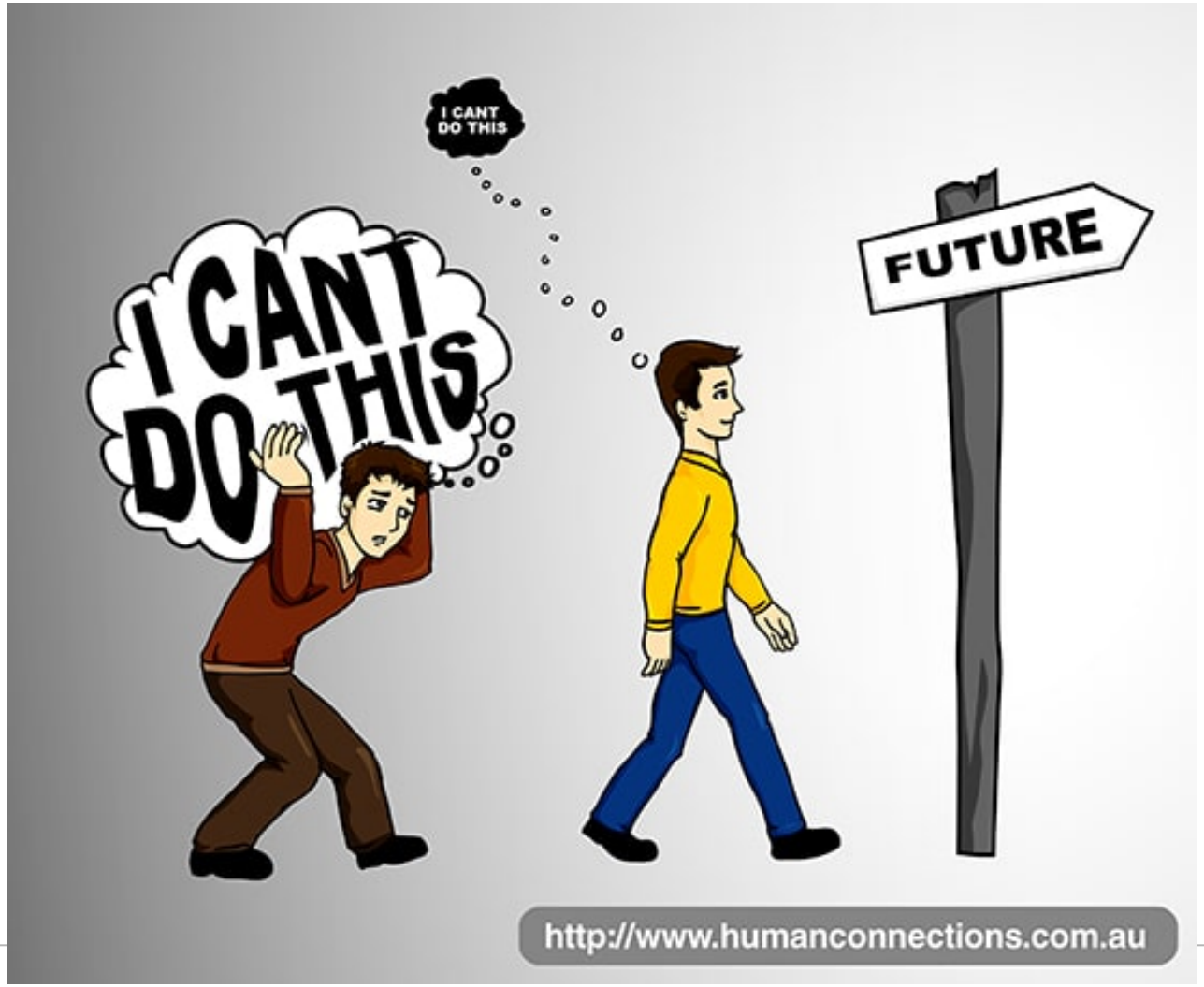
Topical Hemostatic Agents

"QuikClot Combat Gauze," by Jng46. CC-BY-SA-4.0
QuikClot® is a registered trademark of Z-Medica, Wallingford (CT).

"ChitoGauze." © Amazon. Image used under the provision of the US Fair Use Act.
ChitoGauze® is a registered trademark of Tricol Biomedical, Inc., Portland (OR).


STOP
THE BLEED

Its All About "This" Pressure



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Stop the Bleed

- Program Objectives:
  - The general public will know the phrase and associated logo: "*Stop the Bleed*"
  - The general public will be able to have access to effective personal bleeding control kits
  - The general public will have access to effective public bleeding control kits
  - Every bleeding control kit will provide "just in time" audio and visual training

STOP THE BLEED™

No matter how rapid the arrival of professional emergency responders, bystanders will always be first on the scene. A person who is bleeding can die from blood loss within five minutes, so it's important to quickly stop the blood loss.

Remember to be aware of your surroundings and move yourself and the injured person to safety, if necessary.

Call 911.

Bystanders can take simple steps to keep the injured alive until appropriate medical care is available. Here are three actions that you can take to help save a life:

1. Apply Pressure with Hands

EXPOSE to find where the bleeding is coming from and apply **FIRM, STEADY PRESSURE** to the bleeding site with both hands if possible.

2. Apply Dressing and Press

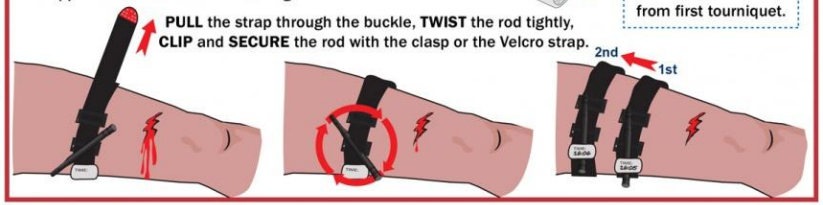
EXPOSE to find where the bleeding is coming from and apply **FIRM, STEADY PRESSURE** to the bleeding site with bandages or clothing.

3. Apply Tourniquet(s)

If the bleeding doesn't stop, place a tourniquet 2-3 inches closer to the torso from the bleeding. The tourniquet may be applied and secured over clothing.

If the bleeding still doesn't stop, place a second tourniquet closer to the torso from first tourniquet.

PULL the strap through the buckle, **TWIST** the rod tightly, **CLIP** and **SECURE** the rod with the clasp or the Velcro strap.



The 'Stop the Bleed' campaign was initiated by a federal interagency workgroup convened by the National Security Council Staff, The White House. The purpose of the campaign is to build national resilience by better preparing the public to save lives by raising awareness of basic actions to stop life threatening bleeding following everyday emergencies and man-made and natural disasters. Advances made by military medicine and research in hemorrhage control during the wars in Afghanistan and Iraq have informed the work of this initiative which exemplifies translation of knowledge back to the homeland to the benefit of the general public. The Department of the Defense owns the 'Stop the Bleed' logo and phrase - trademark pending."

Homeland Security

Office of Health Affairs

American Red Cross

Stop the Bleed Educational Consortium

- A consortium of organizations with an interest in Stop The Bleed Education and Care.
- Focused on both educational design and minimum content at three training levels:
  - Layperson
  - Trained Layperson
  - Professional
- Critical for First Aid Programs to Adopt Recommendations

Stop the Bleed Educational Consortium

Stop the Bleed Education Consortium: Education Program Content & Delivery Recommendations

Goolsby, Craig MD, MEd, FACEP; Hunt, Richard C. MD, FACEP; Goralnick, Eric MD, MS; Singletary, Eunice M. MD; Levy, Matthew J. DO, MSc; Goodloe, Jeffrey MD, NRP, FACEP, FAEMS; Epstein, Jonathan L. MEMS, NREMT-P; Strauss-Riggs, Kandra MPH; Seitz, Samuel R. M.Ed., RN, NRP; Krohmer, Jon R. MD; Nemeth, Ira MD, FACEP, FAEMS; Rowe, Dennis Wayne EMT-P; Bradley, Richard N. MD; Gestring, Mark MD, FACS; Kirsch, Thomas D. MD, MPH, FACEPJournal of Trauma and Acute Care Surgery: October 16, 2017 - Volume Publish Ahead of Print

Tier	Learner description	Program Objectives and (educational domain)*	Education design & time (minimum elements)
Layperson	Non-medically oriented people General public with least likelihood of using material	Motivate learners to act when faced with a hemorrhagic emergency (affective) Teach learners to distinguish life-threatening from non life-threatening bleeding (cognitive) Teach learners to apply pressure (cognitive and psychomotor)	Web-based** 15 minutes
Trained Layperson	Non-medically oriented people Public with greater motivation or need to know the material (i.e. law enforcement)		Web-based** In-person skill practice One hour
Professional	Medical personnel		Web-based** In-person didactics In-person skills practice Two hours

*See manuscript text for a description of content recommendations for each tier. Each advanced tier adds additional content to the lower tier(s).
**This includes mobile app or other widely accessible digital platform

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STOP THE BLEED

Questions and Further Discussion

THANK YOU FOR ATTENDING

Jonathan L. Epstein, MEMS, NRP – jonathan.epstein@redcross.org
Richard M. Bradley, MD, FACEP - Richard.N.Bradley@uth.tmc.edu