



DELAWARE HEALTH AND SOCIAL SERVICES

Division of Public Health

Office of Emergency Medical Services

Medical Director

Severe External Hemorrhage Control Policy Utilizing Hemostatic Agents and Tourniquets

Definition:

- **Hemostatic agents:** substances developed to aid in the control of external hemorrhage.
- **Tourniquet:** an instrument for the compression of a blood vessel by application around an extremity to control the circulation and prevent the flow of blood to or from an extremity.

Purpose:

There are bleeding wounds encountered by Delaware Emergency Medical Services (EMS) that are difficult to control with the traditional gauze wound dressings and direct pressure. Severe scalp lacerations and extremity arterial lacerations with severe hemorrhage are the more difficult to control bleeding wounds found in Delaware's prehospital EMS environment. Victims of these types of wounds can frequently lose several pints of blood in a short time frame, exacerbating their overall condition and causing emergency department resuscitating teams to give patients scarce blood products. Additionally, scalp wounds are frequently associated with significant intracranial injuries which are preferentially transported to trauma centers with neurosurgical capabilities. Transport of these patients is often by aeromedical services with transport times from southern Delaware in the forty (40) minute range, which is too long to allow significant hemorrhage. With the use of hemostatic agents developed for the United States Military, and used extensively in the Iraq and Afghanistan wars, Delaware's EMS Medical Directors hope to reduce significant blood loss and the need for fluid and blood product resuscitation of externally hemorrhaging patients.

Agents and Devices:

There are a variety of hemostatic agents available on the market and several more nearing the market. The EMS Medical Directors have approved for use by basic life support (BLS) and advanced life support (ALS) agencies in Delaware, any of the FDA approved hemostatic agents with the following characteristics:

- Contained with a dressing (generally a gauze dressing)
- Includes a radio-opaque marker so that the dressing may be found in deep bloody wounds.
- Approved by the County EMS Medical Director

There are a variety of devices and techniques utilized as tourniquets:

- The classic bandages with a stick.
- Blood pressure cuffs
- Commercially available rapid application tourniquets

Implementation of Hemostatic Agents and Tourniquets within an EMS Agency:

- Work with County EMS Medical Director to determine which hemostatic agent and tourniquet device is the most appropriate to use within the County.
- Obtain refresher training in severe hemorrhage control, the use of hemostatic agents and tourniquets.
- Obtain hemostatic agents.
- Obtain tourniquet device (if using commercial device)
- Develop method for restocking hemostatic agents and tourniquets.
- Inform all receiving facilities of the type of hemostatic agent and tourniquets your agency will be utilizing.

External Bleeding Protocol:

- Apply direct pressure to the hemorrhaging wound
- If direct pressure is not adequate to control hemorrhage, a provider may use a tourniquet for hemorrhage that is anatomically amenable to tourniquet application and note time of application.
- For hemorrhage that cannot be controlled with above, apply approved hemostatic agent with direct pressure.
- When bleeding controlled, may substitute an adequate pressure dressing for direct pressure.
- Contact medical control, in addition to a standard report, provide information on hemostatic agent and tourniquet as appropriate.
- On arrival to a health care facility, a report to the medical staff must include the type of bleeding, the methods used to control the bleeding, the name of the hemostatic agent used to control the bleeding, the number of hemostatic agent dressings used, whether any dressings were lost en route. If a tourniquet was applied to control hemorrhage, when it was applied and if medical control requested an attempt to release the tourniquet, what occurred at the bleeding site.
- A patient care report must be completed at the receiving facility and left at the patient's bedside before the EMS crew returns to service.

Approved by Delaware EMS Medical Directors in May 2008