Bleeding and Shock

Telecommunicators must be able to recognize and support callers reporting bleeding emergencies and shock-inducing injuries. These incidents may include falls, lacerations, motor vehicle crashes, spinal injuries, gunshot wounds, stabbings, crushing injuries, amputations, internal bleeding, and other traumatic events. This course prepares telecommunicators to recognize common causes and types of bleeding, identify factors that may increase bleeding risk, provide appropriate Pre-Arrival Instructions, recognize the signs and stages of physiological shock, and support callers until emergency responders arrive.

Learning Objectives

Upon completion of this course, learners will be able to:

1. Differentiate between internal and external bleeding and recognize common causes and characteristics of each.
2. Identify injuries, medical conditions, medications, and other factors that may increase the severity of bleeding.
3. Apply appropriate questioning strategies and Pre-Arrival Instructions for callers reporting bleeding emergencies.
4. Explain appropriate methods for controlling external bleeding, including direct pressure, elevation, arterial pressure, and tourniquet use when indicated.
5. Define physiological shock and identify its common causes, signs, symptoms, types, and stages.
6. Explain appropriate actions for supporting and monitoring a victim experiencing or at risk for shock.
7. Recognize priority symptoms and circumstances requiring rapid dispatch and immediate intervention.

Module 1: Bleeding Introduction

This module introduces the role of the telecommunicator in recognizing and managing bleeding emergencies. Learners examine how arteries and veins carry blood, how arterial and venous bleeding may appear differently, and why the location and type of bleeding are important to dispatch decisions. The module also introduces internal and external hemorrhage, common causes of bleeding, priority symptoms, and the relationship between severe blood loss and shock.

Module Objectives

Upon completion of this module, learners will be able to:

1. Differentiate between arterial and venous bleeding based on blood flow characteristics.
2. Explain why the location and type of bleeding are important when questioning callers and relaying information to responders.
3. Distinguish between internal and external bleeding.
4. Identify common causes and priority symptoms associated with bleeding emergencies.
5. Explain how uncontrolled blood loss can contribute to the development of shock.

Content/Activities

Blood Flow and Circulation
Arterial vs. Venous Bleeding
Common Causes of Bleeding
Internal vs. External Hemorrhage
Priority Symptoms
Pregnancy Considerations
Video: Blood Flow Animation

Module 2: Internal Bleeding

This module explores bleeding that occurs within the body's tissues, organs, and cavities. Learners examine common locations and causes of internal bleeding, including head injuries, blunt trauma, falls, motor vehicle crashes, deceleration injuries, fractures, pregnancy complications, surgical procedures, medical conditions, medications, and alcohol-related damage. Emphasis is placed on recognizing indicators of internal bleeding and determining when rapid medical assistance is necessary.

Module Objectives

Upon completion of this module, learners will be able to:

1. Identify common locations and causes of internal bleeding.
2. Recognize signs and symptoms that may indicate bleeding within the brain or other areas of the body.
3. Explain how blunt trauma, falls, deceleration injuries, and fractures can result in internal blood loss.
4. Identify pregnancy complications, surgical procedures, and medical conditions that may contribute to internal bleeding.
5. Determine information telecommunicators should gather when internal bleeding is suspected.

Content/Activities

Internal Bleeding in Tissues, Organs, and Body Cavities
Brain Bleeds
Signs of Head and Brain Bleeding
Blunt Trauma
Falls and Fall Height
Motor Vehicle and Deceleration Trauma
Fractures and Internal Blood Loss
Bleeding During Pregnancy
Post-Surgical Bleeding
Bruising and Contusions
Alcohol-Related Internal Bleeding

Module 3: External Bleeding

This module examines traumatic injuries that result in visible blood loss. Learners explore abrasions, crushing injuries, lacerations, knife wounds, penetrating injuries, and punctures. Special attention is given to identifying the injured body part, recognizing severe arterial bleeding, and understanding why embedded or impaled objects should remain in place.

Module Objectives

Upon completion of this module, learners will be able to:

1. Describe common traumatic injuries that result in external bleeding.
2. Differentiate among abrasions, crushing injuries, lacerations, and penetrating injuries.
3. Recognize circumstances in which external bleeding may become rapidly life-threatening.
4. Explain why the location of an injury can influence bleeding severity and response priorities.
5. Explain why callers should not remove an impaled or penetrating object from a wound.

Content/Activities

Abrasions
Crushing Injuries
Upper and Lower Leg Injuries
Femoral Artery Considerations
Lacerations and Knife Wounds
Penetrating Injuries and Punctures
Impaled Objects
Video: SAFE STEPS First Aid—Severe Bleeding

Module 4: Medical Conditions and Blood Thinners

This module examines medical conditions and medications that may affect the body's ability to control bleeding. Learners explore hemophilia, leukemia, liver disease, thrombocytopenia, vitamin K deficiency, anticoagulants, antiplatelet medications, chemotherapy, and radiation. Emphasis is placed on obtaining a relevant medical and medication history during call questioning.

Module Objectives

Upon completion of this module, learners will be able to:

1. Identify medical conditions that may contribute to abnormal or excessive bleeding.
2. Explain why hemophilia increases the risk associated with even seemingly minor injuries.
3. Differentiate between anticoagulant and antiplatelet medications.
4. Recognize common blood-thinning medications that may increase the severity of bleeding.
5. Explain why information about medications, chemotherapy, radiation, and medical history is important when determining dispatch priority and Pre-Arrival Instructions.

Content/Activities

Medical Conditions Associated with Bleeding
Hemophilia
Blood Clotting
Blood Thinners
Anticoagulants: Eliquis, Pradaxa, Lovenox, Warfarin, Heparin, Xarelto
Antiplatelets: Aspirin, Plavix, Persantine, Effient, Brilinta, Zontivity
Chemotherapy and Radiation
Video: Blood Clotting Animation

Module 5: Treating Bleeding

This module focuses on Pre-Arrival Instructions that may help callers control external bleeding until responders arrive. Learners review direct pressure, elevation, arterial pressure points, care for nosebleeds, amputations, impaled objects, and victims experiencing symptoms associated with blood loss. The module also introduces the appropriate use and application of commercial tourniquets for life-threatening extremity bleeding.

Module Objectives

Upon completion of this module, learners will be able to:

1. Explain how direct pressure is used to control external bleeding.
2. Identify when elevation of an injured extremity may or may not be appropriate.
3. Describe how arterial pressure may be applied when direct pressure and elevation do not control severe bleeding.
4. Apply appropriate Pre-Arrival Instructions for nosebleeds, amputations, impaled objects, and victims showing signs of significant blood loss.
5. Describe the proper application, documentation, and handling of an applied tourniquet.

Content/Activities

Direct Pressure
Adding Dressings Without Removing Blood-Soaked Material
Elevation of Injured Limbs
Brachial and Femoral Artery Pressure
Nosebleed Instructions
Amputation Care
Impaled Object Instructions
Positioning and Warming the Victim
Monitoring Airway, Breathing, and Circulation
Video: How to Stop Bleeding and Apply Bandages
Use of Tourniquets
Record the Time of Application
Do Not Remove or Cover an Applied Tourniquet

Module 6: Bleeding Knowledge Check

This module provides learners with an opportunity to assess their understanding of bleeding emergencies before moving into the shock portion of the course. Questions reinforce recognition of internal and external bleeding, traumatic injuries, impaled objects, and appropriate bleeding-control techniques.

Module Objectives

Upon completion of this module, learners will be able to:

1. Demonstrate understanding of internal and external bleeding concepts.
2. Identify traumatic injuries commonly associated with external bleeding.
3. Apply appropriate guidance to gunshot, puncture, and impaled-object incidents.
4. Identify appropriate bleeding-control interventions.

Content/Activities

Bleeding Knowledge Check
Internal Bleeding Recognition Question
External Bleeding Injury Identification
Gunshot Wound Scenario
Impaled Object Scenario
Bleeding Treatment Selection

Module 7: Shock Introduction

This module introduces physiological shock as a serious and potentially life-threatening condition caused by inadequate delivery of oxygenated blood to the body's cells and organs. Learners examine the concept of perfusion, why the body attempts to compensate when blood flow is disrupted, and the general signs and symptoms associated with shock.

Module Objectives

Upon completion of this module, learners will be able to:

1. Differentiate between psychological shock and physiological shock.
2. Define physiological shock and explain why it is a life-threatening emergency.
3. Define perfusion and explain its relationship to shock.
4. Explain how the body initially compensates when blood flow is interrupted.
5. Recognize common signs and symptoms associated with shock.

Content/Activities

What Is Shock?
Psychological vs. Physiological Shock
Perfusion and Inadequate Perfusion
Why the Body Goes Into Shock
Telecommunicator Responsibilities
Recognizing Shock
Cool, Clammy Skin
Skin-Color Changes
Rapid Pulse and Breathing
Irregular Heartbeat
Dizziness, Lightheadedness, and Fainting
Dilated Pupils
Weakness and Fatigue
Changes in Mental Status and Behavior

Module 8: Types of Shock

This module examines the major forms of physiological shock and the conditions that may cause each type. Learners explore cardiogenic, hypovolemic, anaphylactic, septic, and neurogenic shock, with emphasis on recognizing likely causes and identifying appropriate telecommunicator actions.

Module Objectives

Upon completion of this module, learners will be able to:

1. Identify the five primary types of physiological shock presented in the course.
2. Explain common causes of cardiogenic and hypovolemic shock.
3. Recognize common triggers and indicators associated with anaphylactic and septic shock.
4. Explain how spinal or nervous system injuries may result in neurogenic shock.
5. Relate common call scenarios to the type of shock a victim may be experiencing.

Content/Activities

Cardiogenic Shock
Heart Attack and Abnormal Heart Rhythm
T-CPR Considerations
Hypovolemic Shock
Severe Blood and Fluid Loss
Traumatic Bleeding
Anaphylactic Shock
Allergic Reactions
Septic Shock
Severe Infection
Neurogenic Shock
Spinal and Nervous System Injuries
Motor Vehicle, Sports, Fall, and Diving Injuries

Module 9: Stages of Shock

This module examines how shock progresses as the body attempts to compensate for inadequate blood flow. Learners review the progression from early compensation through worsening organ dysfunction and recognize that rapid intervention is necessary before shock becomes irreversible.

Module Objectives

Upon completion of this module, learners will be able to:

1. Identify the three stages through which a victim in shock may progress.
2. Explain how the body attempts to compensate during the early stage of shock.
3. Recognize signs that indicate the victim's condition is worsening.
4. Explain how prolonged inadequate perfusion can cause organ damage and system failure.
5. Describe why early recognition and intervention are essential to improving victim outcomes.

Content/Activities

Stages of Shock
Early Compensation
Changes in Circulation and Blood Pressure
Progressive Shock
Deterioration of Organ Function
Irreversible Shock
Recognition of Worsening Symptoms
Importance of Early Intervention

Module 10: Treating Shock

This module focuses on actions telecommunicators can direct callers to take when a victim is experiencing or at risk for physiological shock. Learners review positioning, temperature control, movement restrictions, reassurance, bleeding control, and continuous monitoring of airway, breathing, and circulation.

Module Objectives

Upon completion of this module, learners will be able to:

1. Identify immediate actions that may help stabilize a victim experiencing shock.
2. Explain why controlling severe bleeding is a priority when blood loss is contributing to shock.
3. Describe appropriate positioning and warming measures for a victim when circumstances allow.
4. Recognize situations in which movement should be limited because of suspected spinal or traumatic injuries.
5. Explain the importance of monitoring the victim's airway, breathing, circulation, and mental status until responders arrive.

Content/Activities

Recognizing and Responding to Shock
Bleeding Control
Positioning the Victim
Keeping the Victim Warm
Reassurance and Limiting Movement
Spinal Injury Considerations
Monitoring Airway, Breathing, and Circulation
Monitoring Changes in Condition
Pre-Arrival Instructions Until Responders Arrive

Module 11: Shock Knowledge Check

This module assesses learner understanding of physiological shock, including its causes, types, stages, symptoms, and treatment considerations. Learners apply concepts from the shock lessons to determine appropriate recognition and response actions.

Module Objectives

Upon completion of this module, learners will be able to:

1. Demonstrate understanding of the causes and signs of physiological shock.
2. Differentiate among the major types of shock presented in the course.
3. Recognize the progression of shock and signs of victim deterioration.
4. Select appropriate actions for supporting and monitoring a victim experiencing shock.

Content/Activities

Shock Knowledge Check
Signs and Symptoms of Shock
Types of Shock
Stages of Shock
Treatment and Monitoring Scenarios

Module 12: Course Completion and Review

This concluding module reinforces the relationship between bleeding emergencies and physiological shock. Learners review their responsibility to recognize life-threatening conditions, gather accurate information, provide appropriate Pre-Arrival Instructions, and monitor victims until emergency responders arrive.

Module Objectives

Upon completion of this module, learners will be able to:

1. Summarize the primary differences between internal and external bleeding.
2. Identify conditions and circumstances that increase the risk of severe bleeding.
3. Apply key bleeding-control principles to emergency call scenarios.
4. Recognize the signs, causes, and progression of physiological shock.
5. Integrate bleeding and shock assessment principles into effective telecommunicator call handling.

Content/Activities

Course Review
Bleeding Recognition and Treatment Review
Shock Recognition and Treatment Review
Pre-Arrival Instruction Review
Congratulations/Course Completion

Course Completion Criteria

To successfully complete this course and earn continuing education hours, learners must achieve a minimum score of 75%. The quiz must be completed within 30 minutes.

- CE hours awarded: 1
- Certificate duration: 12 Months

Technical Requirements

- Desktop, laptop, or mobile device
- Speakers or headphones
- High-speed Internet access
- A current web browser