Responding to Burn Injuries

Responding to Burn Injuries prepares public safety telecommunicators to recognize the nature and severity of burn injuries and provide callers with appropriate information and Pre-Arrival Instructions. The course examines the anatomy and protective functions of the skin, degrees of burn severity, thermal, inhalation, chemical, and electrical burns, common household burn hazards, and complications associated with major burns. Learners also practice using the Rule of Nines to estimate total body surface area (TBSA) affected by second- and third-degree burns and examine how the mechanism of injury influences caller questioning, responder information, and immediate care.

Learning Objectives

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

1. Assess reported burn injuries using information about the mechanism, location, depth, and extent of injury.
2. Distinguish between burn conditions that may require routine care and those requiring immediate emergency medical intervention.
3. Recognize signs that may indicate serious complications, including airway involvement, shock, hypothermia, hypovolemia, and internal injury.
4. Gather critical information from callers that assists responders in evaluating thermal, inhalation, chemical, and electrical burns.
5. Estimate the percentage of total body surface area affected by a burn using the Rule of Nines.
6. Determine when the characteristics of a burn may indicate the need for specialized burn-center care.
7. Provide Pre-Arrival Instructions appropriate to the reported mechanism and severity of a burn while protecting callers and bystanders from additional injury.

Module 1: What are Burns?

This module establishes the foundation for understanding burn injuries. Learners examine the protective functions and anatomy of the skin, how burn depth and total body surface area contribute to severity, and the characteristics of first-, second-, third-, and higher-degree burns. The module also distinguishes major from minor burns, introduces complications associated with serious injuries, and examines burn patterns that may suggest physical abuse rather than an accidental injury.

Module Objectives

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

1. Assess observable signs and caller descriptions to determine the probable seriousness of a reported burn.
2. Differentiate superficial, partial-thickness, and full-thickness injuries based on the extent of tissue damage and presenting symptoms.
3. Determine when the size, depth, or location of a burn should increase concern for immediate medical intervention.
4. Recognize complications that may threaten a burn victim beyond the visible wound itself.
5. Evaluate burn patterns for characteristics that may warrant additional investigation or notification of law enforcement.

Content/Activities

- Burns and the Role of Skin
- Anatomy of the Skin
- Degrees of Burn Severity
- Burn Degree Matching Activity
- Major vs. Minor Burns
- Complications from Major Burns
- Burn Patterns and Indicators of Possible Abuse

Module 2: What Causes a Burn?

This module examines how the mechanism of injury affects the type and seriousness of a burn. Learners explore thermal, inhalation, chemical, and electrical burns and the circumstances associated with each. Special attention is given to inhalation injuries that may not initially be visible, chemical exposures requiring identification of the substance involved, and electrical injuries that can cause extensive internal damage despite limited external evidence.

Module Objectives

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

1. Use the reported mechanism of injury to anticipate potential complications that may not be immediately visible.
2. Formulate targeted questions that help determine whether a victim may have sustained an inhalation injury.
3. Gather information about chemical exposures that can assist responders in determining an appropriate course of treatment.
4. Recognize circumstances in which the visible appearance of an electrical burn may underestimate the seriousness of internal injury.
5. Relay mechanism-specific information that helps responders anticipate hazards and patient-care needs before arrival.

Content/Activities

- Thermal Burns: Flash, Flame, Scald, and Contact
- Inhalation Burns
- Ask the Expert: Inhalation Burn Incident
- Inhalation Burn Questions
- Chemical Burns and Exposure Factors
- Electrical Burns
- Flash, Flame, Lightning, and True Electrical Burns

Module 3: Common Household Burns

This module examines common burn hazards found in and around the home. Learners review injuries involving flames and fire, hot liquids, household chemicals, and electrical sources. Particular attention is given to circumstances that place children at increased risk and to everyday household products and activities that can result in serious burn injuries.

Module Objectives

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

1. Analyze information from household burn calls to identify the likely mechanism and potential seriousness of the injury.
2. Recognize circumstances that place children at increased risk for serious household burn injuries.
3. Identify environmental hazards that may continue to endanger the victim, caller, or other people at the scene.
4. Determine what additional information should be gathered when common household products or electrical sources are involved.
5. Anticipate potential injury patterns based on the circumstances described by the caller.

Content/Activities

- Household Burn Risks
- Flame and Fire Injuries
- Cooking, Barbecue, Firework, and Smoking-Related Burns
- Scalding and Hot-Water Injuries
- Household Chemical Hazards
- Cleaning Products and Chemical Exposure
- Household Electrical Accidents

Module 4: The Rule of Nines

This module introduces the Rule of Nines as a method for estimating the percentage of total body surface area affected by second- and third-degree burns. Learners compare adult and child calculations, apply percentages to different body regions, and examine how TBSA estimates assist responders and medical providers in evaluating the seriousness of burn injuries. The module also addresses circumstances that may require specialized burn-center care. The adult and child diagrams in the course illustrate the different percentages assigned to the head, trunk, arms, legs, and groin.

Module Objectives

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

1. Calculate an approximate TBSA percentage from a caller's description of affected body regions.
2. Select the appropriate body-area percentages based on whether the victim is an adult or a child.
3. Interpret a TBSA estimate in relation to the potential seriousness of a burn injury.
4. Recognize when the Rule of Nines may not provide an appropriate estimate because of patient characteristics.
5. Evaluate burn circumstances to determine whether specialized burn-center care may be indicated.

Content/Activities

- Total Body Surface Area (TBSA)
- Adult Rule of Nines Diagram and Percentages
- Rule of Nines for Children
- Pediatric Rule of Nines Diagram and Percentages
- Medical Uses of TBSA Estimates
- Burn Center Considerations
- Circumferential Burns and Complications
- Rule of Nines Case Study

Module 5: Pre-Arrival Instructions

This module focuses on immediate caller instructions for burn emergencies. Learners examine differences in the management of thermal, inhalation, chemical, and electrical burns and the importance of protecting victims, callers, and bystanders from further injury. Topics include wound covering, clothing considerations, swelling, airway monitoring, chemical irrigation, electrical scene safety, CPR, and recognition of additional injuries associated with electrical incidents.

Module Objectives

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

1. Select appropriate Pre-Arrival Instructions based on the mechanism, severity, and circumstances of a reported burn.
2. Modify caller instructions when an intervention could increase tissue damage, heat loss, fluid loss, or risk to the victim.
3. Prioritize airway, breathing, and circulation monitoring when burn circumstances indicate the possibility of rapid patient deterioration.
4. Direct callers through chemical-exposure actions while minimizing the risk of secondary contamination or injury.
5. Protect callers and bystanders from electrical hazards while determining when CPR or other immediate intervention may be necessary.

Content/Activities

- Treatment of Thermal Burns
- Wound Covering, Clothing, Swelling, and ABC Monitoring
- Ask the Expert: Severe Burn Response
- Treatment of Inhalation Burns
- Treatment of Chemical Burns and Irrigation
- Poison Control Resources
- Treatment of Electrical Burns and Scene Safety
- Electrocution, CPR, and Lightning Strikes

Module 6: Knowledge Check

This module provides learners with an opportunity to assess their understanding of the major concepts presented throughout the course. Questions address skin anatomy, burn severity, major burns, electrical injuries, inhalation burns, the Rule of Nines, and appropriate Pre-Arrival Instructions for thermal and chemical burns.

Module Objectives

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

1. Demonstrate accurate decision-making when presented with burn-related questions and scenarios.
2. Apply course principles to distinguish between conditions requiring different levels of concern or intervention.
3. Interpret patient signs and incident circumstances to identify potential hidden or secondary injuries.
4. Apply burn-assessment concepts when determining the extent and seriousness of an injury.
5. Select caller instructions that are consistent with the type of burn and hazards present at the scene.

Content/Activities

- Skin Anatomy Knowledge Check
- Burn Severity Questions
- Major Burn Recognition
- Electrical Burn Assessment
- Inhalation Burn Indicators
- Rule of Nines Questions
- Thermal Burn Pre-Arrival Instructions
- Chemical Burn Pre-Arrival Instructions

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