

Basic Course Workbook Series Student Materials

Learning Domain 34

First Aid & CPR

Version 4.5

**Basic Course Workbook Series
Student Materials
Learning Domain 34
First Aid & CPR
Version 4.5**

© Copyright 2007
California Commission on Peace Officer Standards and Training (POST)
All rights reserved.

Published March 2001
Revised August 2004
Corrected December 2004
Revised July 2005
Revised January 2006
Revised April 2007
Workbook Correction June 27, 2011

This publication may not be reproduced, in whole or in part, in any form or by any means electronic or mechanical or by any information storage and retrieval system now known or hereafter invented, without prior written permission of the California Commission on Peace Officer Standards and Training, with the following exception:

California law enforcement or dispatch agencies in the POST program, POST-certified training presenters, and presenters and students of the California basic course instructional system are allowed to copy this publication for non-commercial use.

All other individuals, private businesses and corporations, public and private agencies and colleges, professional associations, and non-POST law enforcement agencies in-state or out-of-state may purchase copies of this publication, at cost, from POST as listed below:

From POST's Web Site:
www.post.ca.gov
Go to Ordering Student Workbooks

POST COMMISSIONERS

Robert T. Doyle, Chair	Sheriff Marin County
Lai Lai Bui, Vice Chair	Sergeant Sacramento Police Department
Walter Allen	Mayor City of Covina
Thomas Anderson	Public Member
Robert Cooke	Special Agent in Charge CA Department of Justice
Bonnie Dumanis	District Attorney San Diego County
Floyd Hayhurst	Deputy Sheriff Los Angeles County
Ron Lowenberg	Dean/Director Criminal Justice Training Center Golden West College
Jeff Lundgren	Deputy Sheriff Riverside County Sheriff's Department
Jim McDonnell	Chief Long Beach Police Department
John McGinness	Sheriff (Retired) Sacramento County
Laurie Smith	Sheriff Santa Clara County
Michael Sobek	Sergeant San Leandro Police Department
Linda Soubirous	Public Member
Larry Wallace Representing Kamala Harris Attorney General Ex-Officio Member	Director of Division of Law Enforcement

THE ACADEMY TRAINING MISSION

The primary mission of basic training is to prepare students mentally, morally, and physically to advance into a field training program, assume the responsibilities, and execute the duties of a peace officer in society.

FOREWORD

The California Commission on Peace Officer Standards and Training sincerely appreciates the efforts of the many curriculum consultants, academy instructors, directors and coordinators who contributed to the development of this workbook. The Commission extends its thanks to California law enforcement agency executives who offered personnel to participate in the development of these training materials.

This student workbook is part of the POST Basic Course Training System. The workbook component of this system provides a self-study document for every learning domain in the Basic Course. Each workbook is intended to be a supplement to, not a substitute for, classroom instruction. The objective of the system is to improve academy student learning and information retention.

The content of each workbook is organized into sequenced learning modules to meet requirements as prescribed both by California law and the POST Training and Testing Specifications for the Basic Course.

It is our hope that the collective wisdom and experience of all who contributed to this workbook will help you, the student, to successfully complete the Basic Course and to enjoy a safe and rewarding career as a peace officer serving the communities of California.

PAUL CAPPITELLI
Executive Director

LD 34: First Aid & CPR

Table of Contents

Topic	See Page
Preface	v
Introduction	v
How to Use the Student Workbook	vi
Chapter 1: Law Enforcement and Emergency Medical Services	1-1
Overview	1-1
Peace Officer Roles and Responsibilities	1-3
Peace Officer Welfare and Safety	1-7
Legal Protections Regarding Emergency Medical Services	1-13
Chapter Synopsis	1-17
Workbook Learning Activities	1-18
Chapter 2: Victim Assessment	2-1
Overview	2-1
Victim Assessment	2-3
Multiple Victim Assessment	2-9
Moving a Victim	2-11
Chapter Synopsis	2-15
Workbook Learning Activities	2-16
Classroom Demonstrations	2-20

Continued on next page

Table of Contents, Continued

Topic	See Page
Chapter 3: Basic Life Support	3-1
Overview	3-1
Rescue Breathing	3-4
Cardiopulmonary Resuscitation (CPR)	3-9
Airway Obstructions	3-22
Bleeding Control	3-35
Shock	3-42
Chapter Synopsis	3-45
Workbook Learning Activities	3-48
Classroom Demonstration	3-52
Chapter 4: Traumatic Injuries	4-1
Overview	4-1
Head Injuries	4-3
Chest and Abdominal Injuries	4-7
Bone, Joint, and Muscle Injuries	4-14
Burns	4-18
Chapter Synopsis	4-27
Workbook Learning Activities	4-28
Classroom Demonstrations	4-32

Continued on next page

Table of Contents, Continued

Topic	See Page
Chapter 5: Medical Emergencies	5-1
Overview	5-1
Cardiac Emergencies	5-3
Respiratory Emergencies	5-6
Seizures	5-9
Strokes	5-12
Diabetic Emergencies	5-14
Poisoning and Substance Abuse	5-18
Temperature Related Emergencies	5-24
Stings and Bites	5-32
Chapter Synopsis	5-38
Workbook Learning Activities	5-40
Classroom Demonstration	5-43
Chapter 6: Childbirth	6-1
Overview	6-1
Normal Labor and Childbirth	6-3
Complications in Childbirth	6-5
Chapter Synopsis	6-7
Workbook Learning Activities	6-8
Supplementary Material	S-1
Glossary	G-1

Continued on next page

Table of Contents, Continued

This page left intentionally blank.

Preface

Introduction

Student workbooks

The student workbooks are part of the POST Basic Course Instructional System. This system is designed to provide students with a self-study document to be used in preparation for classroom training.

Regular Basic Course training requirement

Completion of the Regular Basic Course is required, prior to exercising peace officer powers, as recognized in the California Penal Code and where the POST-required standard is the POST Regular Basic Course.

Student workbook elements

The following elements are included in each workbook:

- chapter contents, including a synopsis of key points
 - supplementary material
 - a glossary of terms used in this workbook
-

How to Use the Student Workbook

Introduction

This workbook provides an introduction to the training requirements for this Learning Domain. It is intended to be used in several ways: for initial learning prior to classroom attendance, for test preparation, and for remedial training.

Workbook format

To use the workbook most effectively, follow the steps listed below.

Step	Action
1	Begin by reading the: Preface and How to Use the Workbook, which provide an overview of how the workbook fits into the POST Instructional System and how it should be used.
2	Refer to the Chapter Synopsis section at the end of each chapter to review the key points that support the chapter objectives.
3	Read the text.
4	Complete the Workbook Learning Activities at the end of each chapter. These activities reinforce the material taught in the chapter.
5	Refer to the Glossary section for a definition of important terms. The terms appear throughout the text and are bolded and underlined the first time they appear (e.g., <u>term</u>).

Chapter 1

Law Enforcement and Emergency Medical Services

Overview

Learning need Peace officers must recognize they have a responsibility to act in good faith and to provide emergency medical services (EMS) to the best of their abilities and within the scope of their training.

Learning objectives The following table identifies the student learning objectives for this chapter:

After completing study of this chapter, the student will be able to:	E.O. Code
<ul style="list-style-type: none">• Identify the primary responsibilities of peace officers as EMS first responders at a medical emergency	34.01.EO2
<ul style="list-style-type: none">• Identify the links of the chain of transmission of infectious pathogens	34.01.EO3
<ul style="list-style-type: none">• Recognize precautions peace officers should take to ensure their own personal safety when responding to a medical emergency	34.01.EO4
<ul style="list-style-type: none">• Identify conditions under which a peace officer is protected from liability when providing emergency medical services	34.01.EO5

Continued on next page

Overview, Continued

In this chapter This chapter focuses on the peace officer's role within the emergency medical services system. Refer to the following table for specific topics:

Topic	See Page
Peace Officer Roles and Responsibilities	1-3
Peace Officer Welfare and Safety	1-7
Legal Protections Regarding Emergency Medical Services	1-13
Chapter Synopsis	1-17
Workbook Learning Activities	1-18

Peace Officer Roles and Responsibilities

[34.01.EO2]

Introduction

The first person at the scene of an emergency situation is often a peace officer. When the situation involves a medical emergency, peace officers assume the role of EMS first responder.

Primary responsibilities

As **first responders**, peace officers should assume the primary responsibility for:

- ensuring officer safety as well as the safety of ill or injured individuals and the public
 - evaluating the emergency situation
 - taking necessary enforcement actions related to the incident
 - initiating actions regarding the well being and care of ill or injured persons
-

En route to the scene

The primary objective of all peace officers responding to any emergency call should be to get to the location as *quickly and safely as possible*.

NOTE: Additional information regarding “Code 3” and responding to emergency situations is provided in LD 19: *Vehicle Operations*.

Continued on next page

Peace Officer Roles and Responsibilities, Continued

Scene size-up

At the scene peace officers should evaluate the nature of the incident and communicate critical information to dispatch and other involved units as soon as possible. The following table identifies a number of factors that may be considered when evaluating the scene:

Factor	Related Information/Examples
Location	<ul style="list-style-type: none">• Exact address or location of the incident• Conditions present at the scene (e.g., large number of bystanders, heavy vehicle traffic in the area, remote location, etc.)• Potential hazards related to the incident or the area (e.g., fire, gas/chemical leak, presence of hazardous materials, etc.)
Type of Emergency	<ul style="list-style-type: none">• Conditions related to the actual emergency such as, but not limited to:<ul style="list-style-type: none">- a vehicle collision involving injuries- an individual complaining of severe chest pain- a person injured as a result of criminal action (e.g., shot during a robbery), etc.
Nature of Ill/Injured Person(s)	<ul style="list-style-type: none">• Number of victims• Apparent age of the victim(s) (i.e., adult, adolescent, child, infant)• Whether victim(s) is conscious or unconscious• Appearance of injury (e.g., heavy bleeding, exposed bone, location of wound, etc.)

Continued on next page

Peace Officer Roles and Responsibilities, Continued

Scene size-up (continued)

Factor	Related Information/Examples
Need for Additional Resources	<ul style="list-style-type: none">• Fire department• Additional law enforcement units• Medical emergency services (e.g., ambulance, EMTs)• Public utility services• Other specialty units (e.g., search and rescue, HAZMAT, etc.)
Urgent Enforcement Actions Required	<ul style="list-style-type: none">• Protection of victim(s) from aggressor(s)• Control of suspect(s) and/or bystanders• Immediate protection of a crime scene

Safety

Peace officers are responsible for taking action to protect their own safety as well as the safety of other EMS personnel, the ill or injured person, the public, and to control the scene.

When determining appropriate safety precautions to take, officers should consider possible dangers from:

- exposure to biological hazards (e.g., body fluids such as blood, saliva, etc.)
- armed suspects, angry bystanders, etc.
- unsafe scene conditions (e.g., unstable buildings, nearby vehicle traffic, etc.)
- environmental hazards (e.g., fire, exposure to dangerous chemicals, chance of explosion, etc.)
- animals (e.g., pets, wild animals)

Continued on next page

Peace Officer Roles and Responsibilities, Continued

Assessment and care of victim

Based on this initial assessment, officers may be required to provide basic care for the victim. Such care may include providing basic emergency medical services until relieved of the responsibility by other personnel with equal or higher levels of training.

Law enforcement actions

If the care and well being of the victim has been turned over to other EMS personnel, peace officers may be required to continue additional enforcement actions including:

- documenting their initial observations when first arriving at the scene
 - maintaining control of the scene to protect potential evidence
 - identifying and isolating witnesses and involved parties
 - recording statements or information provided by the victims, witnesses, etc.
 - noting whether items were moved in order to render medical emergency services (e.g., recording what was touched and by whom)
 - any other investigative actions required
-

Peace Officer Welfare and Safety

[34.01.EO3, 34.01.EO4]

Introduction

Peace officers and all others within the EMS system must take appropriate precautions at all times when in direct contact with injured victims blood or body fluids.

Pathogens

Infection and disease are caused by pathogens that are spread through the air or by contact with another person's blood or body fluids.

Bacteria are microscopic organisms that can live in water, soil, or organic material, or within the bodies of plants, animals, and humans. The human body contains a number of both beneficial and harmful bacteria. Only when a bacteria is harmful would it be considered a pathogen.

A **virus** is a submicroscopic agent that is capable of infecting living cells. Once inside the cells of plants, animals, or humans, viruses can reproduce and cause various types of illness or disease.

Transfer of pathogens

There are two primary methods by which pathogens can be transferred from one human being to another.

Airborne pathogens are spread by tiny droplets sprayed during breathing, coughing, or sneezing. Airborne pathogens can be absorbed through the eyes or when contaminated particles are inhaled.

Blood borne pathogens may be spread when the blood or other body fluids (e.g., semen, phlegm, mucus, etc.) of one person comes into contact with an **open wound** or sore of another.

Continued on next page

Peace Officer Welfare and Safety, Continued

Chain of transmission

Chain of Transmission is how pathogens are spread such as:

- being present
 - entry site
 - quantity
susceptibility
-

Exposure

Because of the nature of their occupation, peace officers are at a high risk of being exposed to both airborne and blood borne pathogens.

NOTE: Exposure does not necessarily mean an individual will contract the illness.

Personal protective equipment

By using personal protective equipment (PPE), EMS personnel can break the chain of transmission and prevent possible exposure and infection. Equipment to be effective, must be used and cared for properly.

Continued on next page

Peace Officer Welfare and Safety, Continued

Personal protective equipment (continued)

The following table identifies standard personal protective equipment to which peace officers may have access to:

PPE	Examples	Additional Information
Protective Gloves	<ul style="list-style-type: none">• Latex• Vinyl• Other synthetic materials	<ul style="list-style-type: none">• For <i>single use</i> only• Should be:<ul style="list-style-type: none">- put on <i>before</i> any contact with the victim,- changed between victims, and- disposed of properly. <p>NOTE: Even if latex gloves are worn underneath, leather gloves will not prevent contamination unless they are specially treated with certain waterproofing compounds. Some individuals have sensitivity to latex.</p>
Eye Protection	<ul style="list-style-type: none">• Protective glasses• Goggles• Clip-on side protectors (for use with prescription glasses)• Face shields	<ul style="list-style-type: none">• Used to prevent splashing, splattering, or spraying of a victim's body fluids into a person's eyes• Should provide protection both from the front and from the sides• Must be cleaned and sanitized after exposure or disposed of properly

Continued on next page

Peace Officer Welfare and Safety, Continued

Personal protective equipment (continued)

PPE	Examples	Additional Information
Masks	<ul style="list-style-type: none"> • Surgical-type masks • Approved particulate masks • Face shields • Particulate air respirators 	<ul style="list-style-type: none"> • Used to prevent splashing, splattering, or spraying of a victim's body fluids into a person's nose or mouth • Only certain masks and respirators will filter airborne pathogens • Disposable surgical-type masks • Reusable masks, shields, and respirators should be cleaned and sanitized after exposure or contamination • The NIOSH N-95 masks
Gowns	<ul style="list-style-type: none"> • Disposable gowns 	<ul style="list-style-type: none"> • Used to protect clothing and bare skin from spilled or splashed fluids • Should be used only once and disposed of properly
Ventilation Devices	<ul style="list-style-type: none"> • Portable pocket masks and one way valve and filters 	<ul style="list-style-type: none"> • Contain valves to control direction of airflow and filters to prevent contamination • Used when applying <u>cardiopulmonary resuscitation (CPR)</u> <p>NOTE: <i>Penal Code Section 13518.1 requires that law enforcement agencies provide peace officers with appropriate portable masks and instruct officers on the mask's proper use.</i></p>

Continued on next page

Peace Officer Welfare and Safety, Continued

Personal protective equipment (continued)

PPE	Examples	Additional Information
General Supplies and Equipment	<ul style="list-style-type: none">• Specialized cleaning solutions and disinfectants (e.g., bleach, germicide, antiseptic soap, etc.)• Prepackaged antimicrobial skin wipe towelettes• Leak proof disposable bags• Biohazard disposable bags• Puncture resistant disposable containers (e.g., Sharps containers, evidence containers, etc.)	

PPE disposal

Gloves, along with other equipment intended for single use, must be disposed of in an approved manner according to manufacturer recommendations after use or contamination. Disposal may include but not be limited to use of:

- biohazard bags
- Sharps containers
- liquid proof containers

NOTE: Peace officers are responsible for being aware of and complying with their agency's policies and Occupational Safety and Health Administration (OSHA) guidelines regarding the disposal of hazardous PPE and materials.

Continued on next page

Peace Officer Welfare and Safety, Continued

Universal precautions

Along with using personal protective equipment, there are a number of universal precautions that peace officers as first responders in the EMS system should take.

- **Treat all body fluids as if they are contaminated!**
- If possible, wash hands thoroughly with warm water and antiseptic soap before and after *each exposure, even when gloves are worn*
- Use proper cleaning procedures to disinfect and decontaminate any equipment that may have been exposed (e.g., vehicle steering wheel and interior, firearm, radio, etc.)
- Use extra caution when handling broken glass or sharp objects
- Use band-aids or other cover protections when open cuts or sores exist

NOTE: A solution of one part bleach and ten parts water can be used when disinfecting equipment except leather.

Personal preventive measures

Peace officers should also be aware of personal preventive measures they may take to remain healthy and support their own immune systems. Staying in good physical condition can help breach the chain of transmission of pathogens to which they may be exposed.

Documentation to exposure

If a peace officer is exposed to an infectious pathogen (or even suspects exposure), no matter how slight, that officer should report the exposure verbally and in writing as soon as possible.

NOTE: Officers should be aware of and comply with their agency policies or guidelines regarding reporting exposure information should be in compliance with Health Insurance Portability and Accountability Act (HIPAA) and OSHA regulations and specific actions to be taken.

Legal Protections Regarding Emergency Medical Services

[34.01.EO5]

Introduction

Under certain specified conditions, peace officers are afforded qualified immunity from liability when rendering emergency medical services at the scene of an emergency.

Responsibility to act

As trained professionals, peace officers have a responsibility to:

- assess emergency situations
- initiate appropriate emergency medical services within the scope of the officer's training and specific agency policy

An officer is *not* required to render care when reasonable danger exists (e.g., while under fire, exposure to hazardous materials, etc.).

Immunity from liability

The California Legislature has declared that **emergency rescue personnel** qualify for immunity from liability from civil damages for any injury caused by an action taken when providing emergency medical services under *certain specified conditions*. (*Health and Safety Code Section 1799.102*)

To be protected from liability for civil damages, emergency rescue personnel must:

- act within the *scope of their employment*
- act in *good faith*
- provide a standard of care that is within the *scope of their training* and specific *agency policy*

Emergency rescue personnel means any person who is a peace officer, employee or member of a fire department, fire protection, or firefighting agency of the federal, state, city, or county government.

Continued on next page

Legal Protections Regarding Emergency Medical Services,

Continued

Immunity from liability (continued)

Emergency medical services include, but are not limited to, first aid and medical services, rescue procedures and transportation, or other related activities necessary to ensure the health or safety of a person in imminent peril.

Negligence

If peace officers attempt to provide emergency medical services beyond the scope of their training, or if they act in a grossly negligent manner, they *can* be held liable for any injuries they may cause.

Failure to provide care, even though the officer has had the appropriate level of training to do so, may also lead to the officer being liable for any injuries caused because of lack of care (e.g., not providing CPR to a victim who is HIV positive).

NOTE: Peace officers are responsible for complying with their agency policies regarding providing emergency medical services.

Expressed consent

Officers should clearly identify themselves and ask for consent to administer emergency medical services. Consent (i.e., permission) must be obtained from the ill or injured person *before* providing emergency care.

In order to give lawful consent, the ill or injured person must be:

- conscious and **oriented**
 - mentally competent enough to make rational decisions regarding their well-being
 - 18 years or older, or an emancipated minor
-

Continued on next page

Legal Protections Regarding Emergency Medical Services,

Continued

Implied consent

Implied consent is a legal position that assumes that an unconscious or confused victim would consent to receiving emergency medical services if that person were able to do so.

Emergency rescue personnel have a responsibility to administer emergency medical services under *implied consent* whenever a victim is:

- unconscious
- incapable of giving consent due to a developmental, emotional, or mental disability
- in an altered mental state due to alcohol, drugs, head injury, etc.
- a juvenile, and the parent or guardian is not present

NOTE: Whenever implied consent is assumed or if medical services are provided based on the seriousness of the victim's condition, emergency rescue personnel should *carefully document* the conditions or the basis for their decision to treat the victim.

Refusal of care

A conscious and competent adult has the *right to refuse* any emergency medical services offered by emergency rescue personnel. The refusal must be honored as long as the person is mentally competent.

Depending on specific agency policy or guidelines, an individual who refuses emergency medical services may be required to sign a release form relinquishing EMS personnel of responsibility for that individual.

Continued on next page

Legal Protections Regarding Emergency Medical Services,

Continued

Life-threatening conditions

If it is determined that an illness or injury is such that if *left untreated* the victim's condition will degenerate to a life-threatening condition, the emergency rescue personnel may provide medical services *regardless of the victim's conscious condition*.

NOTE: Individuals who are terminally ill may have given specific *do not resuscitate (DNR)* instructions. Officers are responsible for being aware of and complying with their own agency's policies and guidelines regarding following such instructions in an emergency situation.

Duty to continue

Once a peace officer initiates medical services, that officer ***must*** remain with the victim until:

- the officer is relieved by:
 - an individual with equal or greater training and skill, ***or***
 - the scene becomes unsafe for the officer to remain or the officer is physically unable to continue.
-

Chapter Synopsis

Learning need	Peace officers must recognize they have a responsibility to act in good faith and to provide emergency medical services to the best of their abilities and within the scope of their training.
Primary responsibilities [34.01.EO2]	<p>As first responders, peace officers should assume the primary responsibility for:</p> <ul style="list-style-type: none">• evaluating the emergency situation• ensuring officer safety as well as the safety of ill or injured individuals and the public• taking any necessary enforcement actions related to the incident• initiating actions regarding the well being and care of ill or injured persons
Chain of transmission [34.01.EO3]	For either airborne or blood borne pathogens to be transferred from one body to another, there must be an unbroken chain of transmission. If at any point the chain is broken, transmission of the pathogen will not take place.
Universal precautions [34.01.EO4]	Along with using personal protective equipment, there are a number of universal precautions peace officers as first responders in the EMS system should take.
Immunity from liability [34.01.EO5]	The California Legislature has declared that emergency rescue personnel qualify for immunity from liability from civil damages for any injury caused by an action taken when providing emergency medical services under <i>certain specified conditions</i> . (<i>Health and Safety Code Section 1799.102</i>)

Workbook Learning Activities

Introduction

To help you review and apply the material covered in this chapter, a selection of learning activities has been included. No answers are provided. However, by referring to the appropriate text, you should be able to prepare a response.

Activity questions

1. A peace officer responding to the scene of a vehicle collision finds the driver of one vehicle unconscious and slumped over the steering wheel. The driver of the second vehicle runs up to meet the officer and explain his side of the story. The cars are blocking a major intersection. As a component of the EMS system, what are the officer's responsibilities to the two drivers? To others at the scene? What factors should the responding officer evaluate regarding the nature of the incident? What information should be relayed to dispatch?

2. Why should peace officers consider covering something as simple as (their own) ragged, torn cuticles or a paper cut with a band-aid?

Continued on next page

Workbook Learning Activities, Continued

**Activity
questions**
(continued)

3. Name three controllable factors that could decrease an officer's risk of contracting the HIV pathogen. What other general precautions can an officer take that may help prevent infections when exposed to common pathogens such as influenza (i.e., flu)?

4. In your own words, define implied consent. Give an example of a situation where a peace officer as a first responder would assume implied consent.

Continued on next page

Workbook Learning Activities, Continued

Student notes

Chapter 2

Victim Assessment

Overview

Learning need Peace officers must be able to assess the immediate condition of a victim, a fellow officer, or themselves if they become injured prior to beginning any form of emergency medical services, including basic life support.

Learning objectives The following table identifies the student learning objectives for this chapter:

After completing study of this chapter, the student will be able to:	E.O. Code
<ul style="list-style-type: none">• Demonstrate appropriate actions to take during an initial assessment for assessing a victim's:<ul style="list-style-type: none">- Responsiveness- Airway- Breathing- Circulation	34.02.EO1 34.02.EO2 34.02.EO3 34.02.EO4
<ul style="list-style-type: none">• Identify assessment criteria for establishing priorities when assessing multiple victims at a single scene	34.02.EO8
<ul style="list-style-type: none">• Recognize conditions under which an injured victim should be moved from one location to another	34.02.EO9
<ul style="list-style-type: none">• Recognize proper procedures for moving a victim using the shoulder drag technique	34.02.EO10

Continued on next page

Overview, Continued

In this chapter This chapter focuses on techniques for assessing the immediate condition of a victim at the scene of a medical emergency. Refer to the following table for specific topics:

Topic	See Page
Victim Assessment	2-3
Multiple Victim Assessment	2-9
Moving a Victim	2-11
Chapter Synopsis	2-15
Workbook Learning Activities	2-16
Classroom Demonstrations	2-20

Victim Assessment

[34.02.EO1, 34.02.EO2, 34.02.EO3, 34.02.EO4]

Introduction

Once the emergency scene has been evaluated and necessary safety precautions taken, the next step for the First Responder is to assess the victim's condition. The purpose of this two-part assessment process is to identify and immediately treat life-threatening conditions and to set priorities for further treatment.

Two part process

There are two parts to the victim assessment process: the **initial survey** and the **focused survey**. The following table presents a brief description of each:

	Description	Actions	
Initial Survey	<ul style="list-style-type: none">Rapid (30-45 seconds), systematic process to detect life-threatening conditions	1	Check for responsiveness.
		2	Check ABCs <ul style="list-style-type: none">AirwayBreathingCirculation (pulse)
		3	Control major bleeding
		4	Treat for shock
Focused Survey	<ul style="list-style-type: none">Systematic examination to determine whether serious conditions exist	1	Check vital signs : <ul style="list-style-type: none">Skin ColorTemperatureRespiratory ratePulse Rate
		2	Gather initial information regarding the victim and the incident
		3	Conduct a head-to-toe check to identify injuries

NOTE: Take note of skin color, skin temperature, respiratory rate, and pulse rate.

Continued on next page

Victim Assessment, Continued

Respiration rate

The act of breathing is called respiration.

Peace officer safety

Prior to and after any contact with a victim, peace officers as first responders should take ***universal safety precautions*** including the use of personal protection equipment (PPE) (e.g., latex gloves).

Responsiveness

Before taking any action, the victim's level of responsiveness (mental status) should be determined. To determine responsiveness, the peace officer should speak with the victim directly, asking, "Are you okay?" If the victim does not respond, the officer should tap the victim or shout in order to elicit a response from the victim.

Depending on the level of responsiveness, a victim may be determined to be:

- alert, awake and oriented (i.e., can talk and answer question appropriately)
- responsive to verbal stimuli (e.g., talking or shouting)
- responsive to painful stimuli (e.g., tapping or pinching, rubbing)

IF the victim is:	THEN the officer should:
<i>not responsive</i>	<ul style="list-style-type: none">• activate the EMS system• check the victim's ABCs
responsive	<ul style="list-style-type: none">• control any major bleeding• treat for shock• activate the EMS system if necessary

Continued on next page

Victim Assessment, Continued

ABCs

When a victim is alert and able to speak, it can be assumed that the victim has a clear airway and is able to breathe. If the victim is unable to speak or not responsive, then appropriate steps should be taken to check the victim's ABCs.

Airway

Breathing

Circulation

Airway

The airway is the passageway by which air enters and leaves the lungs. An airway obstruction may be caused by the position of the victim's tongue, head, or jaw, or some type of obstruction in the victim's throat. The following table identifies basic actions associated with opening a victim's airway:

Step	Action
1	• Use a <u>jaw-thrust</u> or <u>head-tilt/chin-lift</u> maneuver to lift the tongue away from the air passage
2	• Take any steps necessary to maintain the open airway

NOTE: The process for opening the airway of an infant or small child is different from that of an adult.

NOTE: Specific instructions for conducting the maneuvers necessary for opening a victim's airway are noted in a later chapter of this workbook.

Continued on next page

Victim Assessment, Continued

Breathing

After ensuring that the victim's airway is clear and open, the responding peace officer should determine if the victim is breathing.

Step	Action
1	<ul style="list-style-type: none">Take a position with the officer's ear near the victim's mouth and eyes looking toward the victim's chest <p>NOTE: Officer safety issues may require alternate techniques to assess breathing</p>
2	<ul style="list-style-type: none">Assess the victim's breathing for five seconds by:<ul style="list-style-type: none"><i>looking</i> for the rise and fall of the chest<i>listening</i> for the sound of breathing<i>feeling</i> for breath from the victim's nose or mouth

IF the victim is:	THEN the officer should:
<i>not breathing</i>	<ul style="list-style-type: none">give the victim two breaths each approximately 1 second long <p>NOTE: If the first breaths do not go in, reposition the airway and try to ventilate again. If the breaths do not go in the second time, use unconscious <u>obstructive airways technique</u> to force the obstruction from the airway.</p>
breathing	<ul style="list-style-type: none">check the victim's pulse

NOTE: Techniques for removing foreign body obstructions are noted in a later chapter of this workbook.

Continued on next page

Victim Assessment, Continued

Circulation

The presence of a **carotid pulse**, taken at a **carotid artery**, is the most reliable indication for the adult and child victim's heart is functioning.

Step	Action
1	<ul style="list-style-type: none">Place an index and middle finger on the front of the victim's throat at the largest <u>cartilage</u> of the larynx ("Adam's apple")
2	<ul style="list-style-type: none">Slide fingers off the victim's throat to the side of the neck toward the officer
3	<ul style="list-style-type: none">Position fingers between the trachea ("windpipe") and the large muscles on the side of the victim's neck for five to ten seconds

IF the victim has:	THEN the officer should:
<i>no pulse</i>	<ul style="list-style-type: none">begin cardiopulmonary resuscitation (CPR)
a pulse but is <i>not</i> breathing	<ul style="list-style-type: none">continue with <u>rescue breathing</u>

Continued on next page

Victim Assessment, Continued

Circulation (continued)

IF the victim has:	THEN the officer should:
a pulse, is breathing, but <i>unconscious</i>	<ul style="list-style-type: none">• check for indications of life-threatening conditions (e.g., major bleeding, shock, etc.)• place the victim in the recovery position (on the side with the head supported by the lower forearm), if appropriate, to aid breathing and allow fluids or vomit to drain from the mouth
a pulse, is breathing, and <i>conscious</i>	<ul style="list-style-type: none">• check for indications of life-threatening conditions (e.g., major bleeding, shock, etc.)

NOTE: For infants under one year, circulation should be assessed on the brachial artery (inside upper arm between biceps and triceps).

NOTE: Techniques for performing CPR and rescue breathing are noted in a later chapter of this workbook.

Life-threatening conditions

Once it is determined that the victim is breathing and has a pulse, the peace officer must control any major bleeding and treat the victim for shock. Such conditions must be treated first before any further assessment of the victim takes place.

NOTE: Techniques for administering emergency first aid measures for controlling bleeding, treatment for shock, and other conditions are noted in later chapters of this workbook.

Multiple Victim Assessment

[34.02.EO8]

Introduction

In some emergency situations, there will be more than one victim. In such situations, it is the peace officer's responsibility as first responder's to classify the victims for treatment. By doing so, treatment will be rendered first to those victims needing immediate attention for life-threatening conditions.

Classification categories

Officers should move from one victim to another, making a quick (less than one minute) assessment of each victim's condition and classifying each victim into a category.

The following table identifies the classification categories:

Category	Action
NONSALVAGEABLE	<ul style="list-style-type: none">• No further action (obviously dead or not breathing)
IMMEDIATE	<ul style="list-style-type: none">• Receives treatment first, once all victims are classified
DELAYED	<ul style="list-style-type: none">• Receives treatment once all victims classified as IMMEDIATE have been treated
MINOR	<ul style="list-style-type: none">• Direct to a safe area away from other victims and possible scene safety hazards

Continued on next page

Multiple Victim Assessment, Continued

Assessment criteria

Classification categories should be based on assessment of that victim's breathing, circulation, and mental status.

The following table describes the order of the assessment process and criteria for classifying each victim:

	Actions	IF:	THEN:
Breathing	<ul style="list-style-type: none">• Clear airway if necessary• Measure respiration rate	<i>no</i> respiration	<ul style="list-style-type: none">• classify victim as NONSALVAGEABLE
		<i>over</i> 30 cycles/min.	<ul style="list-style-type: none">• classify victim as IMMEDIATE
		<i>below</i> 30 cycles/min.	<ul style="list-style-type: none">• continue assessment by checking the victim's circulation
Circulation	<ul style="list-style-type: none">• Capillary refill on extremities	more than two seconds	<ul style="list-style-type: none">• classify victim as IMMEDIATE
		less than two seconds	<ul style="list-style-type: none">• continue assessment by checking the victim's mental status
Mental Status	<ul style="list-style-type: none">• Give simple commands such as "Open your eyes," or "Close your eyes."	<i>unable</i> to follow commands	<ul style="list-style-type: none">• classify victim as IMMEDIATE
		<i>follows</i> commands	<ul style="list-style-type: none">• classify victim as DELAYED or MINOR

Begin treatment

After completing the assessment and classification of all victims, treatment of victims classified as **IMMEDIATE** can begin.

Moving a Victim

[34.02.EO9, 34.02.EO10]

Introduction

As a first responder, one of the most difficult decisions a peace officer may need to make at an emergency scene is whether or not to move a victim.

Do not move

More harm can be done to a victim by moving them than by the original injury. This is especially true if a spinal cord injury is suspected.

DO NOT MOVE any injured victim unless it is absolutely necessary.

An *unconscious*, injured victim should be treated as though the victim has a spinal injury and therefore should *not be moved* unless it is absolutely necessary.

Conditions for moving a victim

A victim should be moved **only** when the victim is in a **life-threatening situation**. The following table identifies those conditions:

Life-threatening Situations		
Imminent danger	<ul style="list-style-type: none">• When the danger outweighs the risk of further injury from being moved	<ul style="list-style-type: none">• Fire or threat of fire or explosion• Toxic gases or radiation• Electrical hazards (e.g., downed power lines)• Uncontrolled moving traffic

Continued on next page

Moving a Victim, Continued

Conditions for moving a victim (continued)

Life-threatening Situations		
Unable to assess	<ul style="list-style-type: none">• When it is not possible to do a initial survey (ABCs) of the victim's condition• When the victim's condition or an officer's ability to provide basic life-saving procedures is not possible due to the victim's position	<ul style="list-style-type: none">• Slumped over a steering wheel• When CPR is required

General guidelines

If an injured person must be moved, officers should consider the following guidelines.

	General Guidelines
Plan Ahead	<ul style="list-style-type: none">• Identify a safe location before attempting to move the victim• Move only as far as is absolutely necessary
Reassure Victim	<ul style="list-style-type: none">• Tell the victim(s) what is going on and why the victim is going to be moved• Keep the victim as calm as possible

Continued on next page

Moving a Victim, Continued

General guidelines (continued)

	General Guidelines
Victim Stability	<ul style="list-style-type: none">• Keep victim in a straight line during the movement.• Keep victim lying down• Move the victim rapidly but also as <i>carefully</i> and <i>gently</i> as possible• Be careful not to bump the victim's head during movement <p>NOTE: If an infant is fastened in an infant seat, <i>do not</i> remove the infant. Move infant and the seat together.</p>

Shoulder drag

A number of different techniques may be used to move an injured victim. One maneuver that may be used is the shoulder drag technique. It can be done if the victim is in either a **supine (face up)** or **prone (face down)** position.

To avoid straining their backs when dragging a victim, officers should:

- bend their knees
- keep their backs straight
- let their leg muscles do most of the work

Continued on next page

Moving a Victim, Continued

Shoulder drag (continued)

The basic steps for the shoulder drag technique are noted in the following table:

Step	Action
1	<ul style="list-style-type: none">• Use hands and grasp the victim under the armpits
2	<ul style="list-style-type: none">• Stabilize the victim's head and neck to reduce the risk of injury
3	<ul style="list-style-type: none">• Carefully lift the victim keeping the head and shoulders as close to the ground as possible
4	<ul style="list-style-type: none">• Drag the victim so that the head, torso, and legs remain in a straight line• DO NOT pull sideways
5	<ul style="list-style-type: none">• Gently place the victim in the new location• Assess the victim's condition

Chapter Synopsis

Learning need	Peace officers must be able to assess the immediate condition of a victim, a fellow officer, or themselves if they become injured prior to beginning any form of emergency medical services, including basic life support.
----------------------	--

Initial survey [34.02.EO1, 34.02.EO2, 34.02.EO3, 34.02.EO4]	An initial survey is the initial rapid systematic assessment of a victim to determine if life-threatening conditions exist.
--	---

Assessment criteria [34.02.EO8]	Classification categories should be based on assessment of the victim's breathing, circulation, and mental status.
---	--

Moving an injured victim [34.02.EO9]	A victim should be moved only when the victim is in a life-threatening situation.
--	---

Shoulder drag technique [34.02.EO10]	The shoulder drag technique can be used to move a victim regardless if the victim is in a supine (face up) or prone (face down) position.
--	---

Workbook Learning Activities

Introduction

To help you review and apply the material covered in this chapter, a selection of learning activities has been included. No answers are provided. However, by referring to the appropriate text, you should be able to prepare a response.

Activity questions

1. What are universal safety precautions? Describe three situations when officers should use these measures when in contact with a person with an injury or illness.

2. Locate and take your own carotid and brachial pulses. What are the measurements? Under what circumstance should a peace officer consider taking a victim's brachial pulse to check circulation rather than a carotid pulse? Why shouldn't officers use their thumbs when taking a pulse?

Continued on next page

Workbook Learning Activities, Continued

Activity questions (continued)

3. Officers on patrol are flagged down by a woman who saw her husband collapse as they were painting the front of their house. When officers reach the man, they find him lying on his side on the grass. His wife tells officers that the victim fell from the fourth rung of the ladder. Describe, in a step-by-step fashion, how officers, as first responders, should conduct an initial survey of the victim. What, if any, precautions should they take, presuming the victim does not appear to have any external bleeding?

4. During multiple victim assessment (four victims and one officer), under what, if any, circumstances might a victim who has no respiration be classified as unsalvageable? Should an officer attempt rescue breathing or CPR (as appropriate) before moving on to assess the next victim?

Continued on next page

Activity questions (continued)

- Continued on next page*

Workbook Learning Activities, Continued

Activity questions (continued)

7. A peace officer responded to the scene of a collision and car fire. The officer pulled an injured driver out just before flames engulfed the passenger compartment. It was later determined that the driver had suffered a spinal injury as a result of the collision, and that moving the victim may have worsened the condition, leading to the victim being partially paralyzed.

- Is the officer liable?
- How would this change if there was no immediate danger?

Classroom Demonstrations

Introduction

During class, the instructor will discuss and demonstrate specific techniques for conducting initial assessments on an injured victim. Students will have the opportunity to practice each technique and develop their own levels of skill.

Student notes

Chapter 3

Basic Life Support

Overview

Learning need Peace officers may be required to provide basic life support for a victim, fellow officer, or themselves until additional medical services become available.

Learning objectives The following table identifies the student learning objectives for this chapter:

After completing study of this chapter, the student will be able to:	E.O. Code
<ul style="list-style-type: none">Recognize circumstances under which a victim's airway should be opened by using a:<ul style="list-style-type: none">Head-tilt/chin-lift maneuverJaw-thrust maneuver	34.03.EO1 34.03.EO2
<ul style="list-style-type: none">Identify the difference between a severe and a complete airway obstruction	34.03.EO3
<ul style="list-style-type: none">Perform procedures for clearing an obstruction from the airway of a conscious or unconscious:<ul style="list-style-type: none">AdultChildInfantPregnant or obese individual	34.03.EO21 34.03.EO22 34.03.EO23 34.03.EO24
<ul style="list-style-type: none">Demonstrate rescue breathing techniques when using a pocket face mask or mouth-to-mouth maneuver	34.03.EO7

Continued on next page

Overview, Continued

Learning objectives (continued)

After completing study of this chapter, the student will be able to:	E.O. Code
<ul style="list-style-type: none">• Demonstrate Cardiopulmonary Resuscitation (CPR) for adults, children, and infants, including:<ul style="list-style-type: none">- Ventilation duration- Pulse location- Compression depth- Compression rateCompression-to-ventilation ratio (one-person CPR)- Compression-to-ventilation ratio (two-person CPR)	34.03.EO8 34.03.EO9 34.03.EO10 34.03.EO11 34.03.EO12 34.03.EO13
<ul style="list-style-type: none">• Distinguish between the four primary bleeding control techniques	34.03.EO15
<ul style="list-style-type: none">• Demonstrate the general guidelines for controlling bleeding from an open wound	34.03.EO16
<ul style="list-style-type: none">• Identify indicators of shock	34.03.EO19
<ul style="list-style-type: none">• Perform first aid measures to treat shock	34.03.EO20

Continued on next page

Overview, Continued

In this chapter This chapter focuses on techniques for performing basic emergency and life support maneuvers. Refer to the following table for specific topics:

Topic	See Page
Rescue Breathing	3-4
Cardiopulmonary Resuscitation (CPR)	3-9
Airway Obstructions	3-22
Bleeding Control	3-37
Shock	3-44
Chapter Synopsis	3-47
Workbook Learning Activities	3-50
Classroom Demonstration	3-55

Rescue Breathing

[34.03.EO7]

Introduction

If it is determined that a victim's airway is open and no obstructions are present, yet the victim is still not breathing, the officer may attempt rescue breathing.

Rescue breathing

Rescue breathing is the process of using one's own breaths to artificially breathe for a victim. The rescue breathing process continues until the victim is able to breathe without assistance or other breathing support is provided by EMS personnel.

Scene safety

Ensure scene safety and use Personal Protective Equipment (PPE) by taking universal precautions.

	Actions
Responsiveness	<ul style="list-style-type: none">• Establish that the victim is unresponsive• Activate the EMS system (If a second person is available, have that individual activate the EMS system.)

Checking ABCs

Prior to beginning rescue breathing, a initial assessment of the victim should take place. The initial survey should include determining the victim's responsiveness as well as checking the victim's **ABCs**.

- **A**irway to ensure the victim's airway is open
- **B**reathing to determine if the victim is breathing
- **C**irculation to identify if the victim has a pulse

If it is determined that the victim is not responsive, has an open airway, but is not breathing, and has a pulse, then rescue breathing may be required.

Continued on next page

Rescue Breathing, Continued

Rescue breathing technique

The following table identifies the techniques for rescue breathing:

Step	Action	
1	<ul style="list-style-type: none">• Open the victim's airway using the head-tilt-/chin-tilt or jaw-thrust maneuver (whichever is most appropriate for the situation)	
2	Portable pocket mask	<ul style="list-style-type: none">• Take a position at the top of the victim's head• Place mask on the victim so the top of the mask is over the victim's nose while the base of the mask is between the lower lip and chin
	Mouth-to-mouth	<ul style="list-style-type: none">• Take a position to the side of the victim's head• Pinch victim's nose closed with thumb and index finger of the hand being used to hold the victim's forehead• Place mouth over the victim's mouth making a tight seal <p>NOTE: For an infant, the officer's mouth should cover both the mouth and nose.</p>
3	<ul style="list-style-type: none">• Take a breath and slowly exhale directly into the victim's mouth or through the one-way valve of the mask• Use only enough air to create a visible chest rise in the victim's chest• Break contact with the victim's mouth or the mouth piece of the mask• Watch the victim's chest as the air is released from the victim's lungs	

Continued on next page

Rescue Breathing, Continued

Rescue breathing technique (continued)

Step	Action
4	<ul style="list-style-type: none">• If breaths do not enter the victim's lungs:<ul style="list-style-type: none">- reposition the victim's head to open the airway.- attempt to breathe into the victim's lungs again.
5	<ul style="list-style-type: none">• Repeat the breathing cycle until the:<ul style="list-style-type: none">- victim begins to breathe without assistance,- officer is relieved by an equally or higher medically trained person,- officer becomes too exhausted to continue,- unable to detect a pulse after 2 minutes of rescue breathing, or- victim is pronounced dead by an authority.

NOTE: If the victim begins to breathe without assistance, continue to assess the victim's condition and provide care for shock.

Other conditions

If the victim's mouth is injured and cannot be used for rescue breathing, the officer should use a *mask-to-nose* position.

If the victim has a laryngectomy, a surgical procedure that implants an artificial airway (stoma) in the neck, the officer should use a *mask-to-stoma* position.

For both positions, the same methods should be used as with mouth-to-mouth/face mask techniques for rescue breathing.

Continued on next page

Rescue Breathing, Continued

Rescue breathing rates and duration

Rescue breathing duration and rate will vary depending on the victim's age.

	Adult (8 years and older)	Child (1 - 8 years)	Infant (newborn - 1 year)
Duration	1 second		
Rate	10 - 12 breaths/minute	12 - 20 breaths/minute	

NOTE: Officers should use their best judgment when estimating the age of a child or infant.

Breathing/pulse checks

The victim's pulse and breathing should be checked approximately every two minutes.

If the victim is:

- *not breathing* but has a pulse, continue rescue breathing
 - *not breathing* and has *no pulse*, begin Cardiopulmonary Resuscitation (CPR)
-

Recovery position

If the victim resumes adequate breathing and there are no indications of major bleeding or spinal injury, then the victim can be placed in the *recovery position*. This position allows for drainage from the mouth and prevents the victim's tongue from blocking the airway.

Continued on next page

Rescue Breathing, Continued

Recovery position (continued)

To place a victim in the recovery position:

- roll the victim onto either side toward the officer,
 - keep the victim's body in one unit with the spine as straight as possible,
 - move the victim's lower arm up and bend at the elbow,
 - rest the victim's head on the lower forearm,
 - move the victim's top leg toward the victim's chest, and continue monitoring the victim's breathing.
-

Gastric distention

Rescue breathing can force some air into the victim's stomach as well as lungs, causing the stomach to become distended. This condition is referred to as **gastric distention**. Gastric distention often occurs in children and infants.

Relief of gastric distention

If gastric distention is noted, recheck the airway and give smaller, slower breaths.

Vomiting

If a victim vomits, the vomit may enter the lungs and cause further life-threatening complications.

If vomiting should occur:

- turn the victim's entire body (*not just the head*) to the side as one unit to keep the spine straight
 - wipe the vomit from the victim's mouth
 - return the victim to the supine position
 - reopen the airway
 - continue rescue breathing
-

Cardiopulmonary Resuscitation (CPR)

[34.03.EO8, 34.03.EO9, 34.03.EO10, 34.03.EO11, 34.03.EO12, 34.03.EO13]

Introduction

If a victim is unresponsive, not breathing, and has no carotid pulse to indicate circulation, then the victim is in a state of cardiac arrest. Without immediate care, the victim will die.

CPR

Cardiopulmonary Resuscitation (CPR) is a method of artificially restoring and maintaining a victim's breathing and circulation. CPR is a key element of basic life support.

In order to survive, oxygenated blood must circulate through the body and reach the victim's brain. In order to ensure that this process takes place, a peace officer as a first responder must:

- maintain an open airway
 - breathe for the victim (rescue breathing)
 - physically force the victim's blood to circulate (external chest compressions)
-

Clinical and biological death

A victim is clinically dead the moment breathing and circulation stop.

Clinical death may be *reversible* if basic life support techniques such as CPR are begun immediately.

When a victim's breathing and circulation stop *and* brain cells die due to lack of oxygen, *irreversible* changes begin to take place, and vital organs begin to deteriorate. At this point, a victim is biologically dead. **Biological death** usually takes place within four to six minutes after breathing and circulation stop.

NOTE: If any doubt exists as to whether or not the victim is alive, CPR should be started.

NOTE: The point at which a victim is considered to be biologically dead may be defined by specific agency guidelines and policy.

Continued on next page

Cardiopulmonary Resuscitation (CPR), Continued

“Do not resuscitate” orders

A valid “do not resuscitate” (DNR) or “no-CPR” directive would also be a reason for not beginning CPR on a victim. If there is any doubt that the order may not be valid or if a family member requests that an order be ignored, CPR should be started.

Specific agency policy

Different agencies may have specific policies and guidelines regarding performing CPR on unconscious adults, children, and infants, or DNR orders. Officers are responsible for knowing and complying with their agency policies.

Checking ABCs

Prior to beginning CPR, an initial survey of the victim should take place. The initial assessment should include determining the victim’s responsiveness as well as checking the victim’s **ABCs**.

- **A**irway to ensure the victim’s airway is open
- **B**reathing to determine if the victim is breathing adequately
- **C**irculation to identify if the victim has a pulse

If it is determined that the victim is not responsive, has an open airway but is not breathing, and has no pulse, CPR should be started.

Continued on next page

Cardiopulmonary Resuscitation (CPR), Continued

Adult/child CPR: one- person

Once a peace officer has confirmed the victim's mental state, conducted an initial assessment, and has determined that there is no breathing or circulation, CPR should begin immediately.

NOTE: For the purposes of CPR, a child is defined as one to eight years.

	Actions
Responsiveness	<ul style="list-style-type: none">• Establish that the victim is unresponsive• Activate the EMS system (If second person is available, have that individual activate the EMS system.)
Position	<ul style="list-style-type: none">• Place victim in a supine position on a firm surface
Airway	<ul style="list-style-type: none">• Open the victim's airway using head-tilt or jaw-thrust maneuver• <i>Look, listen, and feel</i> for breathing once the airway is open <p>NOTE: If already breathing or breathing resumes effectively once the airway is opened, place victim in a recovery position, when appropriate.</p>

Continued on next page

Cardiopulmonary Resuscitation (CPR), Continued

Adult/child
CPR: one-
person
(continued)

	Actions
Initial Ventilation	<ul style="list-style-type: none">• If available, use a pocket face mask for ventilation during CPR• Give two slow breaths with each lasting 1 second• If the victim is a child, give two breaths each lasting 1 second• Blow into the victim's mouth until resistance is noted. (Feel for resistance orally and watch for the victim's chest to rise and fall)• Allow victim to exhale between breaths
Pulse	<ul style="list-style-type: none">• Check for a carotid pulse no more than a ten second time period <ul style="list-style-type: none">• If victim has:<ul style="list-style-type: none">- a pulse and is breathing -- treat for shock, monitor closely, and place in the recovery position, if appropriate- a pulse, continue rescue breathing (one breath every five to six seconds at a rate of approximately 10 to 12 breaths per minute)- no pulse, initiate CPR process

Continued on next page

Cardiopulmonary Resuscitation (CPR), Continued

Adult/child
CPR: one-
person
(continued)

	Actions
Compression Point	<ul style="list-style-type: none">• For Adult - Place the heel of one hand on the sternum at the imaginary nipple line, then place the second hand over the top of the first hand• For Child - Place one or two hands at the center of sternum at the imaginary nipple line <p>NOTE: External compressions are not effective unless performed in the correct position. Compressions to the wrong part of the chest may lead to further injury of the victim.</p>
External Compressions	<ul style="list-style-type: none">• Straighten and <i>lock</i> elbows• Position shoulders directly above hands• Using body weight, push <i>straight down</i> with enough force to compress the sternum 1 ½ - 2 inches• If victim is a child, compress the sternum 1/3 - 1/2 of victim's chest depth• Fully release compression pressure in the same amount of time it took to apply it• Deliver 30 compressions at a rate of <i>100 per minute</i> (Count out loud "1, 2, 3,")

Continued on next page

Cardiopulmonary Resuscitation (CPR), Continued

Adult/child CPR: one- person (continued)

	Actions
Ventilation/ Compression Cycle	<ul style="list-style-type: none">• After 30 compressions, reposition victim's airway• Give two effective ventilations• Continue cycle of <i>30 compressions to 2 breaths</i> for 5 cycles (approximately 2 minutes)
Assessment	<ul style="list-style-type: none">• Recheck carotid pulse and look, listen, and feel for breathing over a period of not more than five seconds
	<ul style="list-style-type: none">• If victim has:<ul style="list-style-type: none">- a pulse and is breathing adequately -- place victim in a recovery position, treat for shock, and monitor closely- a pulse but is not breathing -- discontinue chest compressions but <i>continue rescue breathing</i>- no pulse and is not breathing -- <i>continue CPR</i> at a rate of 30 compressions to two breaths (beginning with chest compressions)

Infant CPR

The technique for performing CPR on an infant, (newborn to one year of age) is similar to that for adults, but with adjustments that take into account the infant's size. The following table identifies the basic process for performing CPR on an infant:

	Actions
Responsiveness	<ul style="list-style-type: none">• Establish that the victim is unresponsive• If second person is available, have that individual activate the EMS system (If officer is alone, begin CPR immediately.)

Continued on next page

Cardiopulmonary Resuscitation (CPR), Continued

Infant CPR (continued)

	Actions
Position	<ul style="list-style-type: none">Place victim in a supine position on a firm surface
Airway	<ul style="list-style-type: none">Gently open the victim's airway using head-tilt maneuver (Do not overextend the infant's neck.)Look, listen, and feel for breathing once the airway is open
Initial Ventilation	<ul style="list-style-type: none">Give two effective ventilations with each lasting 1 secondAllow victim to exhale between breaths
Pulse	<ul style="list-style-type: none">Check for a brachial pulse over a ten second time periodIf victim has:<ul style="list-style-type: none">a pulse and is breathing -- treat for shock and continue to monitora pulse, but is not breathing -- continue rescue breathing (1 breath every 3 to 5 seconds at a rate of approximately 12 to 20 breaths per minute.)no pulse -- initiate CPR process
External Compressions	<ul style="list-style-type: none">Locate compression point on the victim's breastbone, one finger width below an imaginary line between the nipplesUsing two fingers only, depress the victim's breast with enough force to compress the sternum 1/3 to 1/2 depth of chestDeliver 30 compressions at a rate of 100 compressions per minuteFollow with 2 breaths, enough to visually see the chest rise (30 compressions to two breaths)

NOTE: If not sure if pulse is present, start CPR.

Continued on next page

Cardiopulmonary Resuscitation (CPR), Continued

Infant CPR (continued)

	Actions
Assessment	<ul style="list-style-type: none">• Check brachial pulse after five cycles of CPR or 2 minutes
	<ul style="list-style-type: none">• If victim has:<ul style="list-style-type: none">- a pulse and is breathing -- treat for shock and monitor closely- a pulse, but is not breathing -- continue rescue breathing- no pulse -- activate EMS system (if not already done) and continue CPR process at a rate of 30 compressions to two breaths

NOTE: One finger may be used for compression on a newborn if the rescuer has large hands.

Pausing CPR

CPR should be temporarily discontinued for only good reason (e.g., moving the victim from a location that has become dangerous).

If a temporary pause is absolutely necessary, it should be paused for as short a time as possible.

Stopping of CPR

CPR must be continued until:

- the victim's breathing and circulation resumes
 - the officer is relieved by an equally or higher medically trained person
 - the officer is too exhausted to continue
 - environmental hazards endanger the rescuer (e.g., gun shots)
 - continued CPR efforts would endanger the lives of others
-

Continued on next page

Cardiopulmonary Resuscitation (CPR), Continued

Adult CPR: two-persons

When performed correctly, two-person CPR is more efficient than CPR performed by one person. With two people, the victim gets more oxygen, chest compresses are interrupted less, and the individuals performing the maneuver do not tire as easily.

	Actions
Responsiveness	<ul style="list-style-type: none">• Establish that the victim is unresponsive• Activate the EMS system (If second person is available, have that individual activate the EMS system.)
Position	<ul style="list-style-type: none">• Position victim just as with one-person CPR• Officer performing ventilations takes a position at the head of the victim• Officer performing chest compressions takes a position to the side of the victim
Airway	<ul style="list-style-type: none">• Open the victim's airway using head-tilt/chin-lift or jaw-thrust maneuver• <i>Look, listen, and feel</i> for breathing once the airway is open
Ventilation	<ul style="list-style-type: none">• If not breathing, officer performing ventilations should give the victim two effective ventilations, each lasting <i>one second</i>
Pulse	<ul style="list-style-type: none">• Check for a carotid pulse no more than 10 seconds.• If victim has:<ul style="list-style-type: none">- <i>a pulse</i>, continue with <i>rescue breathing</i> only- <i>no pulse</i>, continue with <i>CPR</i>

Continued on next page

Cardiopulmonary Resuscitation (CPR), Continued

Adult CPR: two-persons (continued)

	Actions
Ventilation/ Compression Cycle	<ul style="list-style-type: none">• Continue cycle for two minutes or 5 cycles at a rate of thirty chest compressions to two ventilations• After two minutes, officer performing ventilations rechecks carotid pulse for no more than 10 seconds
Assessment	<ul style="list-style-type: none">• If victim has:<ul style="list-style-type: none">- a pulse and is breathing adequately -- place victim in a recovery position, (if appropriate), treat for shock, and monitor closely- a pulse but is not breathing -- discontinue chest compressions while one officer continues rescue breathing only- no pulse and is not breathing -- continue CPR

NOTE: All findings, counting, etc. should be announced clearly, *out loud* to avoid confusion between the assisting officers.

Child two-persons

A ratio of 15 compressions to 2 rescue breaths is recommended for children per American Heart Association 2005 guidelines.

Infant Two-persons

A ratio of 15 compressions to 2 rescue breaths is recommended. One rescuer may encircle the chest with both hands using the two thumbs together technique.

Changing positions

When performing two-person CPR, one person may become fatigued and wish to change positions. The most important factor in changing positions is that it be *done together* and *take as little time as possible*.

Continued on next page

Cardiopulmonary Resuscitation (CPR), Continued

Changing positions (continued)

The following table identifies the basic actions when changing positions during CPR:

Step	Action
1	<ul style="list-style-type: none">Either rescuer calls for a change at two minutes or the end of 5 cycles
2	<ul style="list-style-type: none">The compressor announces “<i>breathe</i>” at the end of the thirtieth compression in the cycle
3	<ul style="list-style-type: none">Once the ventilator disengages and as the victim’s chest begins to fall, the <i>ventilator</i> and <i>compressor</i> quickly change positions
4	<ul style="list-style-type: none">The <i>new ventilator</i> opens the airway and checks for a carotid pulse for no more than 5 seconds
5	<ul style="list-style-type: none">At the same time, the <i>new compressor</i> locates the compression point and waits for a signal from the <i>new ventilator</i> <p>NOTE: The new compressor should <i>never</i> begin compressions without waiting for verification that the victim still has no pulse.</p>
6	<ul style="list-style-type: none">Compression/ventilation cycles continue at a ratio of 30:2 at a rate of 100 per minute

Continued on next page

Cardiopulmonary Resuscitation (CPR), Continued

Automated external defibrillators (AED)

The cure for most cases of sudden cardiac arrest is immediate treatment with a defibrillator, a device that shocks the heart out of fatal rhythm, allowing normal, healthy rhythm to resume. Until recently, only professionally equipped EMT personnel, or hospitals had immediate access to these devices.

Automated external defibrillators (AED) are being placed in public transportation corridors, public buildings and venues that attract large numbers of participants (sporting events, concerts, parades, etc.) increasing public access to these life-saving devices. Peace officers should become familiar with the operation of these devices.

The AED protocol has seven basic steps:

- Check unresponsiveness
- Activate the EMS system
- Open the airway and check for breathing. If there is no breathing or breathing appears abnormal, give two slow breaths
- Check for pulse. If none, turn on the AED. A second rescuer should continue CPR until the AED is attached
- Attach the AED electrode pads
- Analyze the heart rhythm. Make sure no one is touching the victim

Press the “shock” button, if advised. Again, make sure no one is touching the victim.

Continued on next page

Cardiopulmonary Resuscitation (CPR), Continued

American Heart Association (AHA) guidelines

Current AHA guidelines recommend that “rescuers provide about two minutes of CPR before activating the AED to reanalyze the heart rhythm and attempt another shock.” Studies have shown that the first AED shock stops the abnormal cardiac arrest rhythm more than 85% of the time and that a two minute period of chest compressions between shocks can deliver oxygen to the heart increasing the likelihood of successful defibrillation.

Words of caution

AEDs as currently configured are intended for adult and children 1 year of age or older.

- AEDs are safe in all weather conditions (on dry skin)
- Never place AED electrode pads directly on top of medication patches. Remove patches first and wipe the skin dry
- If the victim has a pacemaker or an internal defibrillator with a battery pack (visible as a lump under the skin, approximately two inches long) avoid placing pads directly on top of the implant
- If the victim is lying on a metal surface (e.g. bleachers) avoid contact of the electrodes with the metal surface

NOTE: Refer to *California Code of Regulations*, Title 22, Division 9, Chapter 1.5 for additional information.

NOTE: Remove jewelry and excess chest hair within 12 inches of the pad before delivering shock.

Airway Obstructions

[34.03.EO1, 34.03.EO2, 34.03.EO3, 34.03.EO4, 34.03.EO5, 34.03.EO6]

Introduction

Respiratory failure is the inability to intake oxygen, to the point where life cannot be sustained. When breathing stops completely, the victim is in **respiratory arrest** which can quickly lead to **cardiac arrest** if action is not taken. Because of this, establishing and maintaining an open airway is of the highest priority.

Spinal cord injury

Prior to any attempt to open a victim's airway, officers must consider whether or not the victim may have suffered any type of spinal injury. If head, neck, or spinal cord injury is suspected, the victim's head and neck may need to be protected by providing as much manual stabilization as possible.

Indications of head, neck, or spinal injury may include, but not be limited to:

- the mechanism of injury (e.g., falling from a high position, vehicle collision, etc.)
- information provided by bystanders/witnesses

NOTE: Whenever a victim is found unconscious, responding officers should suspect a spinal cord injury and act accordingly.

Continued on next page

Airway Obstructions, Continued

Opening an airway

There are two maneuvers that peace officers as First Responders can use to open a victim's airway: head-tilt/chin-lift, and jaw-thrust. The following table provides information regarding each maneuver:

	Use	Step	Technique
Head-Tilt/ Chin-Lift	<ul style="list-style-type: none">Provides maximum airway opening	1	<ul style="list-style-type: none">Place one hand on the victim's foreheadPlace the fingers of the other hand under the bony area at the center of the victim's lower jaw
		2	<ul style="list-style-type: none">Tilt the victim's head back by:<ul style="list-style-type: none">- pressing backward on the forehead- lifting the chin with the fingers
		3	<ul style="list-style-type: none">Move the jaw forward to a point where the lower teeth are almost touching the upper teethIf necessary, use the thumb of the hand supporting the chin to pull open the victim's mouth

NOTE: **Should not** use the head-tilt/chin-lift maneuver if there are any indications of possible *head, neck, or spinal cord injury*.

NOTE: **Do not** compress the soft tissues under the lower jaw. This may obstruct the victim's airway.

NOTE: **Do not** place thumb or finger(s) inside the victim's mouth.

Continued on next page

Airway Obstructions, Continued

Opening an airway (continued)

	Use	Step	Technique
Jaw-Thrust	<ul style="list-style-type: none">• When head, neck, or spinal injury is suspected	1	<ul style="list-style-type: none">• Take a position at the top of the victim's head
	<ul style="list-style-type: none">• To open airway on an unconscious victim• Allows airway to be opened without moving the victim's head or neck	2	<ul style="list-style-type: none">• Gently place one hand on each side of the victim's head• Place fingertips at the rear point of the victim's jaw• Place thumbs on the victim's cheeks• Stabilize the victim's head
		3	<ul style="list-style-type: none">• Using the fingers, gently push the victim's jaw forward• If necessary, use thumb to pull open the victim's mouth

NOTE: **Do not** tilt or rotate the victim's neck if airway does not open, with the jaw thrust, head tilt, chin lift technique.

Continued on next page

Airway Obstructions, Continued

Special consideration

The following table identifies a number of special considerations when attempting to open a victim's airway:

Consideration	Additional Information
Infants and Children	<ul style="list-style-type: none">• Trachea ("windpipe") is narrower, softer, and more flexible than in adults• Over extension of an infant's/child's neck may collapse the trachea• Tongue takes up more space in the mouth than adults• Airways are smaller and easily obstructed
Facial Injuries	<ul style="list-style-type: none">• Severe swelling and bleeding may block airway
Dental Appliances	<ul style="list-style-type: none">• Normally, full/partial dentures should be left in• Remove only if they have become dislodged during the emergency and endanger the victim's airway

Assess breathing

Once the victim's airway has been opened, officers must assess whether or not the person is breathing. This is done by:

- **looking** for the rise and fall of the chest
- **listening** for the sound of breathing
- **feeling** for breath from the victim's nose or mouth and watch to see if the abdomen/chest rise and fall

Ventilation

If it is determined that the victim is not breathing, officers should:

- give two full, slow breaths (enough to adequately see the chest rise and fall)
- each approximately one second long

Continued on next page

Airway Obstructions, Continued

Ventilation (continued)

If the breaths do not go in, the victim's airway should be repositioned and ventilation should be repeated. If the breaths still do not go in, officers should look for an airway obstruction.

Airway obstructions

An airway obstruction can be either mild or severe. They are caused by a number of different materials blocking the person's air passages. Examples include, but are not limited to the following.

- Victim's tongue
 - Vomit or blood
 - Broken teeth or dentures
 - Foreign objects such as toys, ice, food
-

Mild airway obstruction

If the victim indicates an airway problem (i.e., choking) but is able to speak or cough, the victim is experiencing a **mild airway obstruction**. With a mild airway obstruction, it may be assumed that there is adequate air exchange to prevent respiratory failure.

A victim who is conscious with a mild airway obstruction should be encouraged to cough forcefully to dislodge and expel the object.

Continued on next page

Airway Obstructions, Continued

Mild airway obstruction (continued)

Do not interfere with the victim's attempts to cough (e.g., pound on the victim's back). This could lodge the obstruction even further, causing a **severe airway obstruction**. If the obstruction cannot be removed by coughing and the victim has labored breathing, is making unusual breathing sounds, or is turning blue/grey, the victim should be treated as if there is a severe airway obstruction.

NOTE: Grabbing the throat with one or both hands indicating the victim is unable to breathe is considered the universal choking sign.

Severe obstruction

The victim may be experiencing a severe airway obstruction if:

- unconscious and unable to be ventilated after the airway has been opened
- conscious but unable to speak, cough, or breathe

Under such conditions, additional measures may be required to free the victim's airway from a severe obstruction. The two primary maneuvers used are the abdominal thrust (if conscious) and CPR (if unconscious).

Tongue obstruction

A large number of severe airway obstructions leading to respiratory failure are caused by the victim's own tongue.

In the unconscious victim, the muscles of the lower jaw relax and the tongue can lose muscle tone. When this happens, the tongue can slide into the victim's airway.

Continued on next page

Airway Obstructions, Continued

Removing obstruction

If any object causing the obstruction can be seen it might be removed by using a finger sweep.

To conduct a finger sweep:

- open the victim's mouth by grasping both the tongue and lower jaw between the thumb and fingers
- insert the index finger of the other hand down along the cheek and then gently into the throat in a "hooking" motion
- if the object can be felt, grasp it and remove it

NOTE: The finger sweep maneuver should be done with care so that the object is not forced further into the victim's throat.

NOTE: **Do not** use a blind finger sweep. Objects should be removed from their mouths only if the objects can be *seen clearly*.

Abdominal thrust

The abdominal thrust (also referred to as the Heimlich maneuver) is one method used to force obstructions from a victim's airway that cannot be removed with a finger sweep. Abdominal thrusts force air out of the lungs, expelling the obstruction, and clearing the victim's airway.

Continued on next page

Airway Obstructions, Continued

Abdominal thrust (continued)

The following table identifies techniques for performing an abdominal thrust on conscious victims:

Conscious Choking Adult or Child	1	<ul style="list-style-type: none">• Ask the victim, “Are you choking?”, “I can help you”• Determine that the victim is choking (i.e., unable to speak, cough, or breathe)• Inform the victim before taking action
	2	<ul style="list-style-type: none">• Take a position behind the victim• Wrap arms around the victim’s waist and locate the victim’s navel
	3	<ul style="list-style-type: none">• Make a fist with one hand• Place the thumb side of the fist against the midline of the victim’s abdomen, above the navel
	4	<ul style="list-style-type: none">• Grab fist with other hand• Apply pressure inward and upward toward the victim’s head in a smooth, quick movement
	5	<ul style="list-style-type: none">• Repeat thrusts until object is expelled or victim breathes, coughs or loses consciousness

Continued on next page

Airway Obstructions, Continued

Abdominal thrusts (continued)

When a conscious victim becomes unconscious:

	Step	Action
Unconscious Adult or Child	1	<ul style="list-style-type: none">• Activate the EMS system• Place victim in a supine position <p>NOTE: When the victim is a child, officers should have a second person (if available) activate the EMS system, while the officers begin the maneuver immediately.</p>
	2	<ul style="list-style-type: none">• Open the victim's airway• Look inside the victim's mouth• Conduct a finger sweep of the victim's mouth, only if you see the object (Do not use a blind finger sweep.)• Attempt to ventilate victim's lungs• If airway remains obstructed, reposition the victim's head and attempt to ventilate again• If airway remains obstructed, perform 30 chest compressions, look in the airway, remove any visible debris, attempt to ventilate• Repeat this procedure until a chest rise is achieved during an attempted ventilation

NOTE: Abdominal thrusts ***should not*** be used on infants or pregnant women. Also, they may not be effective on adults who are obese.

NOTE: Prior to each ventilation, look in mouth for obstruction.

Continued on next page

Airway Obstructions, Continued

Chest thrusts

The chest thrust is another maneuver that can be used to force obstructions from a victim's airway. Chest thrusts are used in place of abdominal thrusts when the victim:

- is in late stages of pregnancy
- has abdominal injuries
- is too obese for abdominal thrusts to be effective

The following table identifies techniques for performing a chest thrust on a conscious victim who is in late stages of pregnancy or is too obese for abdominal thrusts.

	Step	Action
Conscious Choking Adult	1	<ul style="list-style-type: none">• Ask the victim, "Are you choking?", "Can I help you?"• Determine that the victim is choking (i.e., unable to speak, cough, or breathe)• Inform the victim before taking action
	2	<ul style="list-style-type: none">• Take a position behind the victim who is standing or sitting• Slide arms under the victim's armpits and encircle the victim's chest
	3	<ul style="list-style-type: none">• Form a fist with one hand• Place the thumb side of fist on the midline of the victim's sternum, level with the armpits• Grasp the fist with the free hand

Continued on next page

Airway Obstructions, Continued

Chest thrusts (continued)

	Step	Action
Conscious Choking Adult (continued)	4	<ul style="list-style-type: none">• Direct thrusts <i>straight back</i> toward the victim's spine• Use care not to direct thrusts up, down, or to either side
	5	<ul style="list-style-type: none">• Repeat thrusts until object is expelled or victim loses consciousness

Infants

A combination of back blows and chest compressions may be used to clear a foreign body from an infant's airway. The following table identifies techniques for chest thrusts on both conscious and unconscious infants:

NOTE: For the purposes of this workbook, an *infant* is newborn - one year.

	Step	Action
Conscious Choking Infant	1	<ul style="list-style-type: none">• Confirm that the infant's airway is obstructed (serious breathing difficulty, ineffective cough, absence of a strong cry)• <i>Do not</i> attempt to ventilate or conduct a finger sweep
	2	<ul style="list-style-type: none">• Support infant's body on forearm, face down (The officer's arm may be resting on one leg for additional support.)• Place infant's face in the palm of the hand with the infant's nose between the forefinger and middle finger• Position the infant's head lower than the body

Continued on next page

Airway Obstructions, Continued

Infants (continued)

	Step	Action
Conscious Choking Infant (continued)	3	<ul style="list-style-type: none"> Using the heel of one hand, deliver up to five blows to the infant's back between the shoulder blades
	4	<ul style="list-style-type: none"> If the airway remains obstructed, turn infant over so that the back of the infant's head is supported by the hand Keep the infant's head lower than the body Place fingers of one hand on the center of the infant's chest, one finger width below the nipples but above the xiphoid process
	5	<ul style="list-style-type: none"> Deliver five chest thrusts to compress the infant's chest <i>1/3 to 1/2 inch</i>
	6	<ul style="list-style-type: none"> If the airway remains obstructed, alternate between five back blows and five chest thrusts until the obstruction is clear or the infant loses consciousness
Conscious Infant becomes Unconscious	1	<ul style="list-style-type: none"> Activate the EMS system <p>NOTE: Officers should have a second person (if available) activate the EMS system, while the officers begin the maneuver immediately.</p>
	2	<ul style="list-style-type: none"> Position infant on its back, on a firm flat surface
	3	<ul style="list-style-type: none"> Carefully, open the infant's airway Look in the infant's mouth If obstruction is visible, use a finger sweep to <i>carefully</i> remove it

Continued on next page

Airway Obstructions, Continued

Infants
(continued)

	Step	Action
<i>Conscious Infant becomes Unconscious</i> (continued)	4	<ul style="list-style-type: none">• If airway remains obstructed, reposition the infant's airway and attempt to ventilate• If air <i>does not</i> enter the infant's airway reposition the infant's airway and attempt to ventilate a second time
	5	<ul style="list-style-type: none">• If still unable to effectively ventilate the infant, begin 30 chest compressions, look in the mouth for debris, attempt to ventilate• Repeat sequence as necessary until a chest rise (effective ventilation) is achieved

NOTE: Repeat steps 3 through 5 until obstruction is cleared.

Bleeding Control

[34.03.EO15, 34.03.EO16]

Introduction

Large or deep wounds or injuries can lead to uncontrolled bleeding, which in turn can lead to shock and eventually death.

Circulatory system

The three components to the human circulatory system are the:

- heart
- blood vessels
- blood

If any one component does not function properly, oxygen and nutrients will not reach the body's major organs in sufficient enough supply to support life.

Bleeding control techniques

There are four techniques that may be used to control or limit bleeding at the scene of a medical emergency.

	Description	Additional Information
Direct pressure	<ul style="list-style-type: none">• Direct pressure applied to the bleeding site until bleeding is controlled	<ul style="list-style-type: none">• Most common and effective technique• Should be used first before other bleeding control options• May be done by firmly applying direct pressure over the bleeding site using clean dressing

NOTE: If clean dressing is not available, a gloved hand or other clean material may be used.

Continued on next page

Bleeding Control, Continued

Bleeding control techniques (continued)

	Description	Additional Information	
Elevation	<ul style="list-style-type: none"> • Use of gravity to help reduce blood pressure to the site and slow the bleeding 	<ul style="list-style-type: none"> • Elevate bleeding site above the level of the heart • Used in combination with direct pressure <p>NOTE: Should not be used if a fracture to that limb or a spinal cord injury is suspected.</p>	
Pressure Points	<ul style="list-style-type: none"> • Applying direct pressure to a specific location where an artery is close to the body surface and near a bone • Used when bleeding is not controlled through direct pressure and/or elevation 	<u>Brachial artery</u>	<ul style="list-style-type: none"> • Used to control bleeding from upper limbs • Pressure is applied by placing the pads of fingers into the groove between the victim's biceps muscle and bone • Pressure should be maintained until bleeding is controlled
		Femoral artery	<ul style="list-style-type: none"> • Used to control bleeding from lower limbs • Pressure is applied by placing the pads of fingers into the crease between the victim's abdomen and leg • Pressure should be maintained until bleeding is controlled

Continued on next page

Bleeding Control, Continued

Bleeding control techniques (continued)

	Description	Additional Information
Tourniquet	<ul style="list-style-type: none">• Use of a device to close off all blood flow to and from a limb• Should only be used for life-threatening conditions as a last resort when all other methods have failed	<ul style="list-style-type: none">• Can be made of any material wide enough (at least 2 inches) so as to not cut into the victim's skin (e.g., flat belt, stocking, necktie, etc.)• Apply close to the wound, between the wound and the victim's heart (but not over a joint)• Wrap material around limb and draw tightly to the point where the bleeding is stopped and no further bleeding occurs• Note the time the tourniquet is placed; report to EMTs• If victim is covered, leave the area where the tourniquet is located exposed for EMTs to see• Tourniquet should not be loosened or removed once in place

NOTE: A dressing is any material applied to a wound to control bleeding and prevent contamination. A bandage is any material used to hold a dressing in place.

Continued on next page

Bleeding Control, Continued

Open wounds

An open wound is any injury where the skin has been broken, exposing the tissue underneath. **Abrasions**, **incisions**, **lacerations**, punctures, **avulsions**, and **amputations** are all examples of open wounds requiring attention to control bleeding.

The following table identifies types of open wounds:

	Description/Cause	Examples
Abrasion	<ul style="list-style-type: none">• A scraping away of only outer portion of the skin	<ul style="list-style-type: none">• Rug burns• Road burns• Skinned elbows/knees
Incision	<ul style="list-style-type: none">• Smooth, straight cut• Caused by sharp objects	<ul style="list-style-type: none">• Paper cuts• Razors• Edged weapons
Laceration	<ul style="list-style-type: none">• Jagged-edged wound• Caused by objects tearing or ripping the skin	<ul style="list-style-type: none">• Broken glass• Jagged metal• Saws• Severe blow or impact with blunt object
Puncture	<ul style="list-style-type: none">• Deep wound through the skin and other tissue	<ul style="list-style-type: none">• Arrows• Knives• Nails• Bullets• Impaled objects

NOTE: **Penetrating punctures** have only an entrance wound and can be shallow or deep. **Perforating punctures** have an entrance wound and an exit wound.

Continued on next page

Bleeding Control, Continued

Open wounds (continued)

	Description/Cause	Examples
Avulsion	<ul style="list-style-type: none">• A part or structure of the body that has been forcibly torn or cut away	<ul style="list-style-type: none">• Tip of nose that is cut off• External portion of ear torn away• Eye pulled from its socket
Amputation	<ul style="list-style-type: none">• Surgical or traumatic removal of a body <i>extremity</i>• Jagged skin and bone edges may be exposed• May involve massive bleeding	<ul style="list-style-type: none">• Accidents involving chain saws, industrial equipment, etc.

Continued on next page

Bleeding Control, Continued

Care for open wounds

Care of open wounds will require an initial assessment and then action to stop bleeding and prevention of shock. The following table identifies the appropriate steps to be taken when caring for open wounds:

	General Guidelines	
Assessment	<ul style="list-style-type: none">Expose the injury site before applying bleeding control (e.g., remove, loosen, or cut away clothing covering the wound)Assess for possible fractures associated with open wound	
Immediate care	Control Bleeding	<ul style="list-style-type: none">Cover the entire wound site with dressingApply pressure to stop bleedingBandages should be applied snugly but not so tight as to impair circulation to portions of the body distal (farther away from the torso) to the wound siteLeave fingers and toes exposed
	Impaled Objects	<ul style="list-style-type: none">Do not attempt to remove the object (Any movement of the object could cause further damage or increased bleeding.)Control bleeding by applying pressure on both sides of the objectDo not put pressure on the object itself

NOTE: If initial bandaging does not stop the blood flow, add additional bandaging.

Continued on next page

Bleeding Control, Continued

Care for open wounds (continued)

	General Guidelines	
Immediate care	Avulsions/ Amputations	<ul style="list-style-type: none"> • Place partially separated skin or tissue back in proper position before applying dressing and bandage • Attempt to locate any avulsed part or amputated extremity • Keep separated part/extremity dry, cool, and protected • <i>Do not immerse, pack in ice, or freeze separated part/extremity</i> • Transport separated part/extremity with victim for possible surgical replacement
Circulation	<ul style="list-style-type: none"> • Monitor pulse below the injury site • Check capillary circulation by pinching fingertips or toes (Color should return within two seconds to pinched area.) • If circulation is impaired, loosen bandage (do not remove) until circulation improves 	
Continued care	<ul style="list-style-type: none"> • If necessary, immobilize the injury site (e.g, <u>open fracture</u>) • Keep the victim lying still to prevent an increase in circulation • Maintain pressure on wound • Monitor the victim's ABCs • Reassure the victim (Fear and anxiety can increase a victim's heart rate and circulation.) • Treat for shock 	

Shock

[34.03.EO19, 34.03.EO20]

Introduction

Shock is a life-threatening condition. If not immediately cared for, the victim can die. **Perfusion** is the continued flow of blood through the capillaries supplying the body's tissues and organs with oxygen and removing waste products. Inadequate perfusion leads to shock.

Indications of shock

The following table identifies a number of possible indicators of shock:

Indicators	Cause
<ul style="list-style-type: none">• Altered mental status such as:<ul style="list-style-type: none">- confusion- anxiety- restlessness- combativeness- sudden unconsciousness	Oxygen deficiency to the brain
<ul style="list-style-type: none">• Pale, cool, moist skin• Profuse sweating• Thirst, nausea, vomiting• Blue/grey lips, nail beds, tongue, ears (i.e., cyanosis)• Dull eyes, dilated pupils	Diversion of blood to the vital organs
<ul style="list-style-type: none">• Rapid pulse rate• Weak pulse	Heart's attempt to pump more blood
<ul style="list-style-type: none">• Abnormal respiration rate• Shallow, labored breathing	Body's attempt to get more oxygen

Continued on next page

Shock, Continued

Severity of injury

There may be no relationship between severity of an injury and the onset of shock. Victims may appear to have no major injury but still show signs of restlessness or anxiety, which are early stages of shock.

For this reason, ***all victims of traumatic or medical emergencies*** should be provided care for shock from the time of initial contact.

NOTE: Injuries that might appear be minor (e.g., dislocated finger) or the absence of obvious internal injury, can cause a person to go into irreversible shock causing death.

Fainting

Fainting is a form of shock characterized by sudden unconsciousness. It is caused by dilation of blood vessels resulting in reduced flow of oxygenated blood to the brain.

Treating shock

All victims should be treated for shock even if no indications of shock are evident. When providing care to treat shock, officers acting as first responders should:

- control all external bleeding and treat other injuries
 - place the victim in appropriate position
 - be alert for vomiting
 - maintain the victim's body temperature but avoid overheating
 - place the victim in a position to help maintain blood flow
 - reassure the victim
 - continue to monitor the victim's **ABCs** and be prepared to take action if necessary (e.g., rescue breathing, CPR)
-

Continued on next page

Shock, Continued

Thirst

Even though the victim may be thirsty, *do not give anything to drink*. Shock can cause the gastrointestinal system to shut down. Fluids given orally may lead to vomiting.

Positioning victim

During treatment for shock, the position in which the victim is placed is dependent upon the nature of the injury or illness. The following table identifies the positions commonly used:

IF the victim:	THEN:
<ul style="list-style-type: none">• may have spinal or head injuries	<ul style="list-style-type: none">• do not elevate legs• immobilize the victim and leave in the position in which found
<ul style="list-style-type: none">• may have experienced a <u>stroke</u>	<ul style="list-style-type: none">• elevate the victim's head and shoulders
<ul style="list-style-type: none">• is having difficulty breathing	<ul style="list-style-type: none">• place the victim in a semi-sitting position• a position of comfort
<ul style="list-style-type: none">• has fracture(s) of the lower limbs	<ul style="list-style-type: none">• do not elevate legs• a position of comfort
<ul style="list-style-type: none">• has any other injuries or conditions	<ul style="list-style-type: none">• place the victim in a <i>supine position</i>• <i>elevate legs</i> approximately 6-12 inches

Chapter Synopsis

Learning need	Peace officers may be required to provide basic life support for a victim, fellow officer, or themselves until additional medical services become available.
Opening an airway [34.03.EO1, 34.03.EO2]	There are two maneuvers that peace officers as first responders can use to open a victim's airway: head-tilt/chin-lift, and jaw-thrust.
Mild airway obstruction [34.03.EO3]	If the victim indicates an airway problem (i.e., choking) but is able to speak or cough, the victim is experiencing a mild airway obstruction. With a mild airway obstruction, it may be assumed that there is adequate air exchange to prevent respiratory failure.
Using the abdominal thrust [34.03.EO4]	The abdominal thrust (also referred to as the Heimlich maneuver) is one method used to force obstructions from the victim's airway. Abdominal thrusts force air out of the lungs, expelling the obstruction, and clearing the victim's airway.
Chest thrust [34.03.EO5, 34.03.EO6]	The chest thrust is another maneuver that can be used to force obstructions from a victim's airway. Chest thrusts are sometimes used in place of abdominal thrusts when the victim is in late stages of pregnancy, has abdominal injuries, or is too obese for abdominal thrusts to be effective.
Rescue breathing [34.03.EO7]	<i>Rescue breathing</i> is the process of using one's own breaths to artificially breathe for a victim. The rescue breathing process continues until the victim is able to breathe without assistance or other breathing support is provided by EMS personnel.

Continued on next page

Chapter Synopsis, Continued

Cardio-pulmonary resuscitation
[34.03.EO8,
4.03.EO9,
4.03.EO10,
4.03.EO11,
34.03.EO12,
34.03.EO13]

	Adult (8 years and older)	Child (1-8 years)	Infant (newborn-1 year)
Ventilation Duration	1 second/breath	1 second/breath	Until chest visibly rises
Pulse Location	Carotid pulse	Carotid pulse	Brachial pulse
Compression Depth	1½-2 inches	1 inch	½-1 inch
Compression Rate	100/minute	100/minute	At least 100/minute
Compression-to-Ventilation Ratio	30:2 (one-person)	30:2	30:2
	30:2 (two-person)	15:2 (two-person)	15:2 (two-person)

Bleeding control techniques
[34.03.EO15]

There are four techniques that may be used to control or limit bleeding at the scene of a medical emergency.

Open wounds
[34.03.EO16]

An open wound is any injury where the skin has been broken, exposing the tissue underneath. Abrasions, incisions, lacerations, punctures, avulsions, and amputations are all examples of open wounds requiring attention to control bleeding.

Continued on next page

Chapter Synopsis, Continued

**Indicators
of shock
[34.03.EO19]**

There are numerous possible indicators that a victim might be going into shock.

**Treatment
for shock
[34.03.EO20]**

All victims should be treated for shock even if no indications of shock are evident.

Workbook Learning Activities

Introduction

To help you review and apply the material covered in this chapter, a selection of learning activities has been included. No answers are provided. However, by referring to appropriate text, you should be able to prepare a response.

Activity questions

1. As a peace officer, you respond to a playground where a one-year-old child has stopped breathing and lost consciousness. During your initial survey, you see what appears to be a piece of the child's pacifier in the child's throat. Explain step-by-step how you would proceed to open an airway and check and clear any airway obstruction. How would procedures differ if an obstruction were not visible?
2. If the child in question one does not spontaneously resume breathing when the obstruction is cleared, what action(s) should you take?

Continued on next page

Activity questions (continued)

- Continued on next page*

Activity questions (continued)

- Continued on next page*

Activity questions (continued)

- LD 34 – Chapter 3: Basic Life Support

Classroom Demonstrations

Introduction

During class, the instructor will discuss and demonstrate specific techniques for opening an airway, rescue breathing, CPR, controlling bleeding, and treating for shock. Students will have the opportunity to practice each technique and develop their own levels of skill.

Student notes

Workbook Corrections

Suggested corrections to this workbook can be made by going to the POST website at: www.post.ca.gov

Continued on next page

Workbook Corrections, Continued

Student notes

Chapter 4

Traumatic Injuries

Overview

Learning need Peace officers are often first to respond to the scene of a traumatic incident. They must be capable of activating the EMS system, and providing appropriate first aid to victims of traumatic injuries.

Learning objectives The following table identifies the student learning objectives for this chapter:

After completing study of this chapter, the student will be able to:	E.O. Code
• Recognize indicators of a possible head injury	34.04.EO1
• Recognize appropriate first aid measures for treating injuries to the head	34.04.EO2
• Recognize appropriate first aid measures for treating open and closed injuries to the: - Chest - Abdomen	34.04.EO10 34.04.EO11
• Identify the appropriate first aid measures for treating injuries to the bone, muscle, or joints	34.04.EO12
• Recognize appropriate first aid measures for treating: - Thermal burns - Chemical burns - Electrical burns - Radiation burns	34.04.EO14 34.04.EO15 34.04.EO16 34.04.EO17

Continued on next page

Overview, Continued

In this chapter

This chapter will focus on basic first aid measures for a number of specific types of traumatic injuries peace officers, acting as first responders, may encounter. Refer to the following table for specific topics:

Topic	See Page
Head Injuries	4-3
Chest and Abdominal Injuries	4-7
Bone, Joint, and Muscle Injuries	4-13
Burns	4-17
Chapter Synopsis	4-23
Workbook Learning Activities	4-24
Classroom Demonstrations	4-28

Head Injuries

[34.04.EO1, 34.04.EO2]

Introduction

Any person who has suffered a traumatic injury may also be subject to a possible brain or spinal cord injury. For this reason, peace officers, acting as first responders, should treat all traumatic injury victims as if they have a head injury.

Indications of head injury

Head injuries can involve injuries to the skull, scalp, brain, blood vessels and fluid around the brain, and/or neck. They may vary from those involving minor bleeding to those leading to life-threatening conditions and spinal cord injury.

The following table presents general signs and symptoms of a possible head injury:

	Indications of Possible Head Injury
Mechanism of Injury	<ul style="list-style-type: none">• Striking a vehicle's windshield or dashboard• Blow to the head• Falls
Mental Status	<ul style="list-style-type: none">• Agitated or confused• Combative or appears intoxicated• Decreased level of consciousness (e.g., appears "groggy")• Loss of short term memory• Loss of consciousness (even for a short period of time)
Vital Signs	<ul style="list-style-type: none">• Abnormal breathing patterns (e.g., snoring respirations)• Decreased pulse• General deterioration of vital signs

Continued on next page

Head Injuries, Continued

Indications of head injury (continued)

	Indications of Possible Head Injury
Visible Injury	<ul style="list-style-type: none">• Deformity of head/skull (e.g., protrusions, depressions, swelling, bruising, etc.)• Visible bone fragments
Appearance	<ul style="list-style-type: none">• Clear or bloody fluid from ears and/or nose• Unequal pupils• Bruises behind ears (i.e., “Battle signs”)• Discoloration around eyes (i.e., “raccoon eyes”)• Paralysis• Priapism (i.e., penile erection)
Other	<ul style="list-style-type: none">• Blurred vision• Projectile vomiting

Head injuries

The extent of a head injury may not always be obvious. Whenever a victim has suffered a traumatic head or neck injury, brain and spinal cord damage should **always be assumed**. First aid measures are noted in the following table:

	First Aid Measures for Head Injuries
Position	<ul style="list-style-type: none">• <i>Do not move</i> the victim’s head or neck• Have the victim remain in the position in which found
Assessment	<ul style="list-style-type: none">• Determine level of consciousness• Conduct a initial and focused survey• If unable to establish an open airway using the jaw - thrust technique after two or three attempts, the head-tilt chin-lift method may be used

Continued on next page

Head Injuries, Continued

Head injuries (continued)

	First Aid Measures for Head Injuries
Treatment	<ul style="list-style-type: none">• Activate the EMS system• Control bleeding if necessary• Be alert for the presence of cerebrospinal fluid in ears or nose. If present, bandage loosely so as not to restrict the flow• Do not apply direct pressure to any head/skull deformity• Be prepared for sudden and forceful projectile vomiting• Treat for shock• Do not elevate the victim's legs• Reassure the victim• Continue to monitor ABCs

Impaled objects

Unlike treatment for other situations involving impaled objects, any object (e.g., knives, arrows, screw drivers, etc.) that is impaled into a victim's cheek or face and causes an airway obstruction should be removed.

If the impaled object is obstructing the victim's airway:

- If there is no airway obstruction, **do not** attempt to remove the object
- carefully pull the object out from the direction it entered
- place dressings on both the inside and outside of the cheek to control bleeding

If the object resists coming out, **stop. Do not pull any farther.** Place a protective device around it to stabilize the object (e.g., paper cup) and secure the device with a bandage.

Continued on next page

Head Injuries, Continued

Nosebleeds

Victims with facial injuries may experience an accompanying nosebleed. If this occurs and **no spinal injury** is suspected, have the victim:

- assume a seated position
- lean slightly forward
- pinch the nose midway at the point where bone and cartilage meet
- maintain the position until bleeding stops

If the victim is unconscious:

- place the victim in the recovery position, if appropriate
- maintain an open airway

NOTE: ***Do not*** pack the victim's nostrils. This could cause blood to back up and create an obstructed airway.

Chest and Abdominal Injuries

[34.04.EO10, 34.04.EO11]

Introduction

Traumatic injuries to the chest or abdomen are potentially serious because of possible damage to the lungs and vital organs.

Types of chest and abdominal injuries

Traumatic injury to the chest and/or abdomen can lead to bleeding (external and internal) as well as damage to the lungs, heart, and other vital organs.

The chest and/or abdomen may be injured in a number of ways. Three of the most common are identified in the following table:

Cause	Additional Information
Blunt Trauma	Blow to the chest and/or abdomen causing: <ul style="list-style-type: none">fractured bones and cartilagebleedingdamage to the lungs, heart, great blood vessels (aorta, vena cava), or other vital organs
Penetrating Object	Caused by bullets, knives, metal or glass, etc., can lead to: <ul style="list-style-type: none">blood lossimpaired breathing or vital organ damage
Compression	Blunt trauma along with rapid chest and/or abdomen compression (e.g., striking a steering wheel) can lead to: <ul style="list-style-type: none">blood lossheart and vital organ damagefractured bones and cartilageruptured lungs, spleen, or other organs

Continued on next page

Chest and Abdominal Injuries, Continued

Closed chest wound

Although there may not appear to be any serious injury to the chest, blunt trauma or compression to the chest area can lead to a condition referred to as **flail chest**.

Flail chest is the condition where the ribs and/or sternum are fractured in such a way that a segment of the chest wall does not move with the rest of chest wall during respiration. It is caused when two or more ribs next to each other are broken.

The following table presents the indicators and first aid measures for closed chest wounds:

Indicators	First Aid Measures
<ul style="list-style-type: none">• <u>Paradoxical breathing</u> (when both sides of the chest do not move in a synchronized manner)• Painful and shallow breathing	<ul style="list-style-type: none">• Activate EMS system• Place victim in a<ul style="list-style-type: none">- recovery position, if appropriate, on the injured side with support for the victim's back- supine position with a soft object (e.g., coat held firmly over the injured area)• Both methods will:<ul style="list-style-type: none">- apply pressure to the injured area- reduce pain- help the victim breathe easier- keep the broken section of the chest in line with the rest of the chest• Treat for shock• Continue to monitor the victim's ABCs

Continued on next page

Chest and Abdominal Injuries, Continued

Open chest wound

All open wounds to the chest should be considered life-threatening.

For respiration to take place properly, the chest must function as a vacuum. With an open chest wound, air may enter the chest area causing a lung to collapse (e.g., sucking chest wound with a punctured lung). Under such conditions, the victim's ability to breathe, and the victim's heart function can be greatly impaired.

To prevent air from entering the chest cavity, an **occlusive dressing** should be applied to the wound as quickly as possible.

Occlusive dressing

An occlusive dressing:

- is a nonporous dressing (e.g., plastic bag)
- used to cover the wound
- creates an air-tight seal

NOTE: As the victim inhales, the dressing is sucked tight to the skin, providing a seal over the wound. If the dressing is placed properly, respiration should partially stabilize.

Continued on next page

Chest and Abdominal Injuries, Continued

Applying an occlusive dressing

The following table identifies a technique that can be used to apply an occlusive dressing to an open chest wound:

Step	Action
1	<ul style="list-style-type: none">Place a gloved hand over the wound to “seal” the wound
2	<ul style="list-style-type: none">Without moving the hand covering the wound, use the free hand to place a piece of plastic over the hand covering the wound site <p>NOTE: Plastic should be at least two inches wider than the wound itself.</p>
3	<ul style="list-style-type: none">While using the free hand to apply gentle pressure and maintain the seal around the wound, gently remove the other hand from under the plastic
4	<ul style="list-style-type: none">Tape all but one corner of the plastic in placeThe untaped corner will allow air to escape from the chest cavity when the victim coughs
5	<ul style="list-style-type: none">Provide care to prevent shockContinue to monitor the victim’s ABCs

NOTE: If the chest has both entrance and exit wounds, occlusive (airtight) dressings should be placed on both wounds. The physically higher wound should be vented.

Continued on next page

Chest and Abdominal Injuries, Continued

Closed abdominal wound

A victim with a closed abdominal wound will have no external bleeding but may have *internal bleeding* that can be severe and potentially life-threatening.

If a closed abdominal wound is suspected, peace officers should initiate the following first aid measures.

Indicators	First Aid Measures
<ul style="list-style-type: none">• Victim found lying in a fetal position (with legs pulled up to chest)• Rapid shallow breathing• Rapid pulse• Rigid or tender abdomen with or without swelling• Pain or tenderness to the touch during focused survey	<ul style="list-style-type: none">• Activate EMS system• If no spinal injury suspected, place victim in a comfortable position (e.g., supine with knees bent up)• Treat for shock• Continue to monitor the victim's ABCs• Be prepared for the victim to vomit

Continued on next page

Chest and Abdominal Injuries, Continued

Open abdominal wounds

An open abdominal wound can be caused by lacerations and punctures to the abdomen. Blood loss and the potential for infection should be of concern when dealing with an open wound to the abdomen.

If an open abdominal wound is identified, peace officers should initiate the following first aid measures.

First Aid Measures for Penetrating Object	
Assessment	<ul style="list-style-type: none">• Determine the victim's state of consciousness• Conduct initial and focused surveys
Treatment	<ul style="list-style-type: none">• Activate EMS system• If no spinal injury is suspected, place the victim in a supine position with the knees up• Apply sterile dressing over the wound to control bleeding• Treat for shock• Continue to monitor the victim's ABCs

Protruding organs

If any organs or portion of an organ protrude from the abdominal wound, ***do not*** attempt to touch, move, or replace them. Cover the organ and the rest of the wound with a moist dressing and seal with an occlusive dressing.

First Aid Measures for Exposed Organs	
Assessment	<ul style="list-style-type: none">• Determine the victim's state of consciousness• Conduct initial and focused surveys

Continued on next page

Chest and Abdominal Injuries, Continued

**Protruding
organs**
(continued)

First Aid Measures for Exposed Organs	
Treatment	<ul style="list-style-type: none">• Activate EMS system• If no spinal injury is suspected, place the victim in a supine position with the knees up• Cover with moist sterile dressing, if available• Seal with airtight bandage• Treat for shock• Continue to monitor the victim's ABCs <p>NOTE: If sterile materials are not available the airtight bandage should be applied over the injury.</p>

Bone, Joint, and Muscle Injuries

[34.04.EO12]

Introduction

Musculoskeletal injuries may have a grotesque appearance. Officers should not be distracted by the injury's appearance or begin first aid measures until an assessment is completed and treatment for other life-threatening measures are taken.

Musculo-skeletal system

The musculoskeletal system is the system of bones, muscles, and other tissue that support and protect the body and permit movement. The components of the musculoskeletal system include bones, joints, **skeletal muscles**, cartilage, **tendons**, and **ligaments**. The following table further describes each component:

	Description
Bone	<ul style="list-style-type: none">• Hard yet flexible tissue• Provides support for the body as well as protection of the vital organs
Joint	<ul style="list-style-type: none">• Place where bones fit together• Proper function critical in order for the body to move
Skeletal Muscle	<ul style="list-style-type: none">• Soft fibrous tissue• Controls all conscious or deliberate movement of bones and joints
Cartilage	<ul style="list-style-type: none">• Connective tissue that covers the outside of the ends of bones• Firm but less rigid than bone• Helps form certain flexible structures of the body (e.g., external ear, connections between the ribs and sternum, etc.)• Allows for smooth movement of bones at joints

Continued on next page

Bone, Joint, and Muscle Injuries, Continued

Musculo-skeletal system (continued)

	Description
Tendon	<ul style="list-style-type: none">• Bands of connective tissue that bind muscles to bones
Ligament	<ul style="list-style-type: none">• Connective tissue that attaches to the ends of bones and supports joints• Allows for a stable range of motion

Musculo-skeletal injuries

Three types of force can cause injury to the musculoskeletal system, and are identified in the following table:

Type of Force	Description	Example
Direct	<ul style="list-style-type: none">• Direct blow to an area	<ul style="list-style-type: none">• Being struck by an automobile
Indirect	<ul style="list-style-type: none">• Force from a direct blow to one area which causes damage to another	<ul style="list-style-type: none">• Landing on feet from a fall and injuring ankles, knees, etc.
Twisting	<ul style="list-style-type: none">• Sudden rapid movement that stretches or tears	<ul style="list-style-type: none">• Football and other sport related injuries

Continued on next page

Bone, Joint, and Muscle Injuries, Continued

Types of injuries

The four most common injuries are fractures, **dislocations**, **sprains**, and **strains**, identified in the following table:

	Description	Indicators
Fractures	<ul style="list-style-type: none">• Complete or partial break of a bone• Includes:<ul style="list-style-type: none">- open fractures where there is a break in the skin at the site of the fracture- <u>closed fractures</u> where there is no break in the skin at the site of the fracture	<ul style="list-style-type: none">• Limb deformity (differences in size or shape)• Swelling or discoloration to the area• Tenderness and localized pain• Breaking and/or grating sound• Possible loss of function
Dislocations	<ul style="list-style-type: none">• When a bone is pushed or pulled out of alignment from a joint	<ul style="list-style-type: none">• Constant pain• Increased pain with movement• Joint deformity• Swelling• Loss of movement (i.e., “frozen joint”)
Sprains	<ul style="list-style-type: none">• Severely stretched or torn ligaments• Associated with joint injuries	<ul style="list-style-type: none">• Pain• Swelling• Discoloration
Strains	<ul style="list-style-type: none">• Over-stretching or tearing of muscle	

Continued on next page

Bone, Joint, and Muscle Injuries, Continued

Bone, muscle, and joint injuries

Unless there is an obvious deformity or open wound with exposed bone, it is not possible to determine whether an injury is a fracture, dislocation, sprain, or strain without X-ray and other diagnostic procedures.

When a musculoskeletal injury is suspected and the injury is severe (i.e., fracture), peace officers should use the following first aid measures.

	First Aid Measures
Assessment	<ul style="list-style-type: none">• Conduct an initial and focused assessment to determine if there are any life-threatening injuries
Treatment	<ul style="list-style-type: none">• Activate EMS system, if necessary• <i>Do not</i> attempt to manipulate or “straighten out” an injury• Expose the injury by removing clothing covering the area• Control bleeding associated with open fractures• Stabilize the injury by immobilizing the bones above and below the joint• Check <u>capillary refill</u> and warmth of affected limb• Treat for shock• Do not elevate legs if injury is to the lower extremities

Burns

[34.04.EO14, 34.04.EO15, 34.04.EO16]

Introduction

A burn is an injury caused by heat, chemicals, or electricity. Burns can involve just the outer-most layer of the skin or go deeper into structures below the skin including muscle, bone, nerves, and blood vessels. Along with physical damage, victims with burns can also experience great pain and emotional trauma from the injury.

Victim assessment

Prior to any first aid measures, no matter how extreme the burn, a victim assessment including initial and focused surveys should be conducted.

Only when immediate life-threatening conditions have been addressed, should the officer's attention be directed to first aid treatment for the burns themselves. Burns to the face, nose and mouth may be life threatening due to respiratory distress.

Severity

Burns involving the skin are classified according to the depth of the burn in the tissue. Classifications include **first-degree burns**, **second-degree burns**, **third-degree burns**, and **fourth-degree burns**. The following table presents information regarding each:

Classification	Depth of Injury	Additional Information
First-degree	<ul style="list-style-type: none">• Damage <i>only</i> to the <u>epidermis</u> (outer-most layer of the skin)• Also referred to as <i>superficial burns</i>	<ul style="list-style-type: none">• Skin appears red• Can be very painful• Damage usually heals without scarring• Example: mild sunburn

Continued on next page

Burns, Continued

Severity
(continued)

Classification	Depth of Injury	Additional Information
Second-degree	<ul style="list-style-type: none">• Damage to the epidermis and the dermis (second layer of the skin containing nerves, hair follicles, and sweat glands)• Also referred to as <i>partial thickness burns</i>	<ul style="list-style-type: none">• Skin appears red and mottled (spotted)• Accompanied by blisters (plasma and fluid released from tissue that rises to top layer of skin)• May involve swelling• Causes intense pain• May produce slight scarring
Third-degree	<ul style="list-style-type: none">• Damage to the epidermis, dermis, and into fatty layer and muscle beneath the skin• Also referred to as <i>full thickness burns</i>	<ul style="list-style-type: none">• Most serious of all burns• Skin appears dry, leathery, and discolored (white, brown, or black)• May be extremely painful or the victim may experience little pain if nerve endings have been destroyed• May require skin grafting to heal• Causes dense scar formation
Fourth-degree	<ul style="list-style-type: none">• Damage to bone and underlying organs	

Continued on next page

Burns, Continued

First aid measures

The most common types of burns are **thermal burns**, **chemical burns**, and **electrical burns**. The following table provides a description along with appropriate first aid measures for each:

	Description	First Aid Measures
Thermal Burns	<ul style="list-style-type: none">• Caused by direct heat• Possible causal agents include:<ul style="list-style-type: none">- Radiation (exposure to sun, radioactive material)- Fire- Steam- Hot liquids- Hot objects	<ul style="list-style-type: none">• Activate EMS system• Remove victim from source of heat• Stop the burning process by cooling burned area with cool water• Apply a dry sterile dressing and bandage <i>loosely</i>• Treat for shock• Monitor ABCs

NOTE: Over cooling 3rd and 4th degree burns may lead to hypothermia.

Continued on next page

Burns, Continued

First aid measures (continued)

	Description	First Aid Measures
Chemical Burns	<ul style="list-style-type: none">• Caused by acids or alkalis coming into contact with the skin• Most frequently occurs in industrial settings	<ul style="list-style-type: none">• Activate EMS system• Officers should wear protective gloves and eyewear during the flushing process• If chemical is a <i>dry powder</i>, brush away as much chemical as possible <i>before flushing</i> with water• Remove excess chemical, exposed clothing, or jewelry prior to the flushing process to prevent injury to other parts of the body• Flush affected area with water for 15-30 minutes• After flushing, cover burned area with dry sterile dressing• Treat for shock• Monitor ABCs

NOTE: Bandage should hold dressing in place and protect the area from contaminants. Bandaging too tightly may not only cause pain but also restrict swelling.

Continued on next page

Burns, Continued

First aid measures (continued)

	Description	First Aid Measures
Electrical Burns	<ul style="list-style-type: none">• Occur when the body becomes a conduit for electrical current• Sources include:<ul style="list-style-type: none">- alternating current- direct current- lightning• May cause extensive internal injuries to the:<ul style="list-style-type: none">- heart (cardiac arrest)- central nervous system- vital organs	<ul style="list-style-type: none">• Ensure that the scene is safe to enter• DO NOT touch the victim's body until the source of the current has been turned off• If necessary, begin CPR immediately• Examine the victim for external wounds including burns caused by<ul style="list-style-type: none">- contact to thermal heat (metal),- the source of current coming into contact with the body (entrance wound), and- current leaving the body (exit wound).• Treat all wounds the same as with thermal burns• Treat for shock• Monitor ABCs

NOTE: Entrance and exit wounds caused by electrical current may be difficult to see initially. They will be found in different locations on the victim's body. For example, if the victim touches a live wire, current may enter the body through the hand, pass through the body, and exit through the victim's feet.

Continued on next page

Burns, Continued

First aid measures (continued)

	Description	First Aid Measures
Radiation Burns	<ul style="list-style-type: none">• Radiation sickness that occurs when the body is exposed to radiation in either a single large dose or chronically	<ul style="list-style-type: none">• Activate the EMS system• Evacuate the area of exposure• Remove all exposed clothing and seal it in a plastic bag, if available• If possible, wash body and hair thoroughly with soap and water to remove any remaining radioactive material• Dry and wrap the affected areas with a towel or blanket• Monitor victim's ABC's and treat for shock

NOTE: If symptoms occur during or after medical radiation treatments, notify physician or seek medical treatment. Handle affected areas gently. Treat symptoms or illnesses as advised by physician.

Continued on next page

Burns, Continued

Electrical current and vehicles

If officers respond to calls where live power lines have fallen onto a vehicle, they should:

- *not* touch the lines or any part of the vehicle
- instruct the occupants to remain in the vehicle
- wait for the utility company to turn off the power before taking any action

Occupants should *not* be told to leave the vehicle unless life-threatening circumstances exist (e.g., vehicle fire).

Radiation sickness

Radiation sickness is illness and symptoms resulting from excessive exposure to radiation, whether that exposure is accidental or intentional (as in radiation therapy).

Radiation: ionizing and non-ionizing

Radiation is normally classified into ionizing and non-ionizing types.

Ionizing radiation is radiation that produces immediate chemical effects (ionization) on human tissue and includes x-rays, gamma rays, and particle bombardment (neutron beam, electron beam, protons, mesons, and others). This type of radiation can be used for medical testing and treatment, industrial testing, manufacturing, sterilization, weapons and weapons deployment, and many other uses.

Non-ionizing radiation is familiar as light, radio waves, microwaves and radar. Types of radiation which generally do not cause tissue damage.

Continued on next page

Burns, Continued

Radiation sickness

Radiation sickness results when humans are exposed to excessive doses of ionizing radiation. Radiation exposure can occur as a single large exposure (acute), or a series of small exposures spread over time (chronic). Radiation sickness is generally associated with acute exposure and has a characteristic set of symptoms that appear in an orderly fashion. Chronic exposure is usually associated with delayed medical problems such as cancer and premature aging, which may happen over a long period of time.

The degree of illness (acute radiation sickness) is dependent on the dose and the rate of exposure.

- Total body exposure of 100 roentgens causes radiation sickness
- Total body exposure of 400 roentgens causes radiation sickness and death in half the individuals
- 100,000 rads causes almost immediate unconsciousness and death within an hour

The severity of symptoms and illness depends on the type and amount of radiation, the duration of the exposure, and the body areas exposed. Symptoms of radiation sickness usually do not occur immediately following exposure.

Signs and symptoms

The signs and symptoms of radiation sickness may include:

- Nausea and vomiting
 - Diarrhea
 - Skin burns (radio dermatitis)
 - Weakness
 - Fatigue
 - Loss of appetite
-

Continued on next page

Burns, Continued

Signs and Symptoms (continued)

- Fainting
 - Dehydration
 - Inflammation (swelling, redness and tenderness) of tissues
 - Bleeding from nose, mouth, gums and rectum
 - Low red blood cell count (anemia)
 - Hair loss
-

Acute exposure

In most cases, a large single dose of radiation can cause both immediate and delayed effects. Acute exposure, if large enough, can cause rapid development of radiation sickness that may include bone marrow damage, gastrointestinal disorders, bacterial infections, hemorrhaging, anemia and loss of body fluids.

Delayed effects can include cataracts, temporary infertility and cancer. Extremely high levels of acute radiation exposure can result in death within a few hours, days or weeks depending on the dose.

Chronic exposure

Chronic radiation exposure often produces effects that can be observed within weeks after the initial exposure. However, signs and symptoms of chronic radiation exposure may not show up until years later, or they may not develop at all.

Chronic exposure may increase your risk of cancer, precancerous lesions, benign tumors, cataracts, skin changes and congenital defects.

Radiation sickness: first aid

ONLY PROVIDE MEDICAL CARE IF YOU HAVE APPROPRIATE PROTECTIVE GEAR TO PREVENT POSSIBLE CONTAMINATION.

Chapter Synopsis

Learning need	Peace officers are often first to respond to the scene of a traumatic incident. They must be capable of activating the EMS system, and providing appropriate first aid to victims of traumatic injuries.
Indications of head injury and first aid measures [34.04.EO1, 34.03.EO2]	Head injuries can involve injuries so the skull, scalp, brain, blood vessels and fluid around the brain, and/or neck. They may vary from those involving minor bleeding to those leading to life-threatening conditions and spinal cord injury.
First aid for chest and abdominal injuries [34.04.EO10, 34.04.EO11]	Traumatic injury to the chest and/or abdomen can lead to bleeding (external and internal) as well as damage to the lungs, heart, and other vital organs.
First aid for bone, and muscle joint injuries [34.04.EO12]	Unless there is an obvious deformity or open wound with exposed bone, it is not possible to determine whether an injury is a fracture, dislocation, sprain, or strain without X-ray and other diagnostic procedures.
First aid for burns [34.04.EO14, 34.04.EO15, 34.04.EO16, 34.04.EO17]	Burns involving the skin are classified according to the depth of the burn in the tissue. Classifications include first-degree burns, second-degree burns, third degree burns, and fourth-degree burns.

Workbook Learning Activities

Introduction

To help you review and apply the material covered in this chapter, a selection of learning activities has been included. No answers are provided. However, by referring to appropriate text, you should be able to prepare a response.

Activity questions

1. A peace officer on patrol through a neighborhood park responds to a mother's calls for assistance. Her five-year-old son is experiencing a severe nosebleed after accidentally being kicked in the face as he walked in front of a child playing on the swings. The child is crying and appears to be very frightened. What actions should the officer take?

2. List at least three *behavioral* indicators that may lead you to believe that a victim may have a head injury. What physical signs might help an officer confirm this suspicion?

Continued on next page

Activity questions (continued)

- Continued on next page*

Workbook Learning Activities, Continued

Activity questions (continued)

5. Describe the appearance of first, second, and third degree burns. How should an officer treat a first degree burn on a child's legs caused by exposure to hot water?

6. Peace officers on patrol see a car pulled off the shoulder. Smoke and/or steam appear to be coming from under the hood. As they approach, they observe the driver has opened the hood and attempted to remove the radiator cap. Boiling antifreeze has sprayed onto the driver's face, causing second degree burns. Should this be treated as a chemical or a thermal burn? How should officers proceed?

Continued on next page

Workbook Learning Activities, Continued

**Activity
questions**
(continued)

7. Peace officers respond to a call involving a collision between a bicyclist and an automobile at a busy intersection. Upon arrival the officers note that the bicyclist is conscious and rational and is having no difficulty breathing. Her right leg appears deformed and upon closer examination, the officers recognize an open fracture below the knee. Dispatch has notified the officers that EMS medical units have been delayed and are not estimated to arrive for at least 20 minutes. What actions should the officers take? Should the victim be moved out of the intersection? What first aid measures should be taken?

Classroom Demonstrations

Introduction

During class, the instructor will discuss and demonstrate specific techniques for recognizing and treating a variety of traumatic injuries that peace officers as first responders may encounter. Students will have the opportunity to practice each technique and develop their own levels of skill.

Student notes

Chapter 5

Medical Emergencies

Overview

Learning need Peace officers must be able to provide basic first aid measures for a number of medical emergencies and conditions they may encounter.

Learning objectives The following table identifies the student learning objectives for this chapter:

After completing study of this chapter, the student will be able to:	E.O. Code
<ul style="list-style-type: none">Recognize indicators of, and first aid measures for a victim experiencing:<ul style="list-style-type: none">Cardiac emergencyRespiratory emergencySeizureStroke	34.05.EO1 34.05.EO2 34.05.EO3 34.05.EO4
<ul style="list-style-type: none">Differentiate between indicators and first aid measures for treating:<ul style="list-style-type: none">Insulin shock (hypoglycemia)Diabetic coma (hyperglycemia)	34.05.EO5 34.05.EO6
<ul style="list-style-type: none">Recognize appropriate first aid measures for a victim experiencing signs of poisons that have been ingested, inhaled, absorbed, or injected	34.05.EO7
<ul style="list-style-type: none">Differentiate between the indicators and first aid measures for treating:<ul style="list-style-type: none">Hypothermia and frostbiteHeat cramps, heat exhaustion, and heat stroke	34.05.EO8 34.05.EO9

Continued on next page

Overview, Continued

Learning objectives (continued)

After completing study of this chapter, the student will be able to:	E.O. Code
<ul style="list-style-type: none">Recognize appropriate first aid measures for stings and bites	34.05.EO13

In this chapter

This chapter will focus on basic first aid measures for a variety of medical emergencies and conditions peace officers as first responders may encounter. Refer to the following table for specific topics:

Topic	See Page
Cardiac Emergencies	5-3
Respiratory Emergencies	5-6
Seizures	5-9
Strokes	5-12
Diabetic Emergencies	5-14
Poisoning and Substance Abuse	5-18
Temperature Related Emergencies	5-24
Stings and Bites	5-32
Chapter Synopsis	5-38
Workbook Learning Activities	5-40
Classroom Demonstrations	5-43

Cardiac Emergencies

[34.05.EO1]

Introduction

A cardiac emergency can range from a victim experiencing shortness of breath or palpitations to full cardiac arrest. Swift action is necessary on the part of peace officers to prevent death or permanent neurological injury.

Cardiac emergencies

Heart attack is a common term describing minor to severe conditions. Minor conditions include blockage of blood or lack of oxygen to heart tissue, with varying levels of pain. If the victim does not receive appropriate care immediately, the victim's chances of survival are greatly reduced.

Coronary artery disease (CAD) (often referred to as coronary heart disease) is a disease where fatty deposits build up in the walls of the arteries that feed the heart's muscle. If an artery becomes blocked, the heart muscle will be deprived of blood and oxygen.

Other causes of cardiac emergencies

Along with coronary heart disease, there are a number of other conditions that can lead to cardiac emergencies. Cardiac arrest may also be caused by:

- drowning
 - electrocution
 - suffocation
 - choking
 - drug overdose
 - allergic reaction
-

Continued on next page

Cardiac Emergencies, Continued

Indicators

The following table identifies the most common indicators of a cardiac emergency:

	Indicators of Cardiac Emergency
Chest Pain	<ul style="list-style-type: none">• Crushing, dull, or heavy persistent pain• Sensation of squeezing or pressure
Radiating Pain	<ul style="list-style-type: none">• Pain, pressure, or discomfort moving:<ul style="list-style-type: none">- down either arm- in the jaw, shoulder, neck, or back- down the upper abdomen
Vital Signs	<ul style="list-style-type: none">• Difficulty breathing or shortness of breath• Abnormally slow or fast pulse
Mental Status	<ul style="list-style-type: none">• Anxiety or feeling of impending doom• Irritability or short temper• Denial of indicators
Other	<ul style="list-style-type: none">• Profuse sweating• Cool, moist, pale skin• Nausea or heartburn

Continued on next page

Cardiac Emergencies, Continued

First aid measures

Although the indicators of a cardiac emergency resemble the indicators of a number of other medical conditions (e.g., heartburn), peace officers should always *first assume that a cardiac emergency exists*, activate the EMS system (if not already activated), and take appropriate first aid measures.

	First Aid Measures for Cardiac Emergencies
Assessment	<ul style="list-style-type: none">• Conduct initial and focused surveys
Treatment	<ul style="list-style-type: none">• Place the victim in a comfortable position (e.g., seated, supine, etc.)• Keep the victim calm and still (even if the person denies indicators of a heart attack)• Provide care to prevent shock• Maintain victim's body temperature• Continue to monitor victim's ABCs and provide reassurance until EMS personnel arrive

Medications

Some victims with existing cardiac conditions may be taking prescription medications for that condition. Officers should ***never administer*** any medications, prescribed or otherwise.

If victims are oriented enough to ask for or decide they need their prescribed medication, peace officers may ***allow*** a victim to take them. Officers may assist the victim if required (i.e., removing medication from its container and placing it in the victim's hand).

Respiratory Emergencies

[34.05.EO2]

Introduction

Respiratory emergencies may range from victims who are having breathing difficulty, but nevertheless are breathing adequately, to victims who are not able to breathe at a level that will sustain life.

Adequate breathing

Normal breathing rate is determined based on the person's age.

Age	Breathing Rate
Adult (8 years and older)	12-20 breaths/minute
Child (1-8 years)	15-30 breaths/minute
Infant (newborn - 1 year)	25-50 breaths/minute

Causes of inadequate breathing

There are numerous possible causes that could lead to inadequate breathing and potential respiratory arrest (when breathing stops completely), including:

- existing illness (e.g., emphysema, asthma)
 - allergic reaction (causing swelling of the throat)
 - cardiac emergency
 - drowning
 - suffocation
 - obstructed airway
 - body positioning that restricts breathing (i.e., *positional asphyxia*)
 - drug overdose
 - **hyperventilation**
-

Continued on next page

Respiratory Emergencies, Continued

Indicators

The following table identifies the most common indicators of a possible respiratory emergency:

	Indicators of Respiratory Emergency
Breathing Rate	<ul style="list-style-type: none">• Abnormally fast (i.e., hyperventilation) or slow• Sporadic or irregular breaths
Labored Breathing	<ul style="list-style-type: none">• Increased effort by the victim• Breathing appears shallow or very deep• Little or no air is felt at the nose or mouth• Uneven or little chest movement
Breathing Sounds	<ul style="list-style-type: none">• Wheezing, gurgling, deep snoring sounds• No breathing sounds
Coloring	<ul style="list-style-type: none">• In advanced stages, lips, nail bed, skin will appear blue-grey in color due to lack of oxygen (i.e., <i>cyanosis</i>)
Mental Status	<ul style="list-style-type: none">• Anxious• Fearful• Panicky• Altered

Continued on next page

Respiratory Emergencies, Continued

First aid measures

If a peace officer suspects that a victim is experiencing a *respiratory emergency*, the officer should *activate the EMS system* (if not already activated) and take appropriate first aid measures.

	First Aid Measures for Respiratory Emergencies
Assessment	<ul style="list-style-type: none">• Conduct initial and focused surveys• <i>Look</i> for even rise and fall of the victim's chest• <i>Listen</i> for air entering and leaving the victim's nose and mouth• <i>Feel</i> for air moving into and out of the victim's nose and mouth
Treatment	<ul style="list-style-type: none">• Place the victim in a <i>position of comfort</i> (e.g., seated, supine, etc.)• If victim is unconscious, place in the recovery position, if appropriate• Keep the victim <i>calm and still</i>• Allow the victim to take prescribed medications (e.g., inhaler)• Loosen any restrictive clothing• Provide care to <i>prevent shock</i>• Continue to <i>monitor victim's ABCs</i> and provide reassurance• Be prepared to begin rescue breathing if necessary

Seizures

[34.05.EO3]

Introduction

A **seizure** is the result of a surge of energy through the brain. Instead of discharging electrical energy in a controlled manner, the brain cells continue firing, causing massive involuntary contractions of muscles and possible unconsciousness. If only part of the brain is affected, it may cloud awareness, block normal communication, and produce a variety of undirected, unorganized movements.

Epilepsy is a term for a convulsive disorder which causes brief, temporary changes in the brain's electrical system, known as a seizure.

Indicators of a seizure

Indicators of a seizure may include:

- staring spells
- disorientation
- lethargy
- slurred speech
- staggering or impaired gait
- tic-like movements
- rhythmic movements of the head (i.e., jerking uncontrollably)
- purposeless sounds and body movements
- dropping of the head
- lack of response
- eyes rolling upward
- lip smacking, chewing, or swallowing movements
- partial or complete loss of consciousness
- picking at clothing
- bluish skin tone
- urination

NOTE: Individuals with epilepsy may exhibit characteristics similar to the effects of drug use or alcohol intoxication.

Continued on next page

Seizures, Continued

Field contacts

When officers encounter someone experiencing a seizure, the officers should:

- not restrain them
- move objects out of the way which could harm them
- cushion the person's head
- keep uninvolved people away
- never put any object in the mouth

After the seizure has ended, individuals may experience a period of post-seizure confusion. Officers should remain with the individual until the individual is reoriented to the surroundings or in the care of a responsible person. Look for medical alert identification, place victim in the recovery position and care for any injuries that occurred during the seizure.

NOTE: Individuals with epilepsy often exhibit behavior similar to the effects of drug use or alcohol intoxication.

NOTE: Convulsions, confusion, and episodes of agitated behavior during an episode should not be perceived as deliberate hostility or resistance to the officer.

Medications

Depriving medications could trigger a seizure.

Officers should be guided by agency policy regarding the administering of prescribed medications.

Continued on next page

Seizures, Continued

Examples

While on patrol, two officers were stopped by a man who stated that there was a woman on the sidewalk who seemed to be “sick or something.” When the officers approached, they saw the woman on the ground. She was unconscious and jerking back and forth. One of the officers recognized that the woman was experiencing a seizure and told his partner to keep everyone else away. After a couple of minutes the woman’s actions stopped. When the woman regained consciousness, the officer approached her and reassured her that it was all right. The woman appeared to be dazed and confused so the officers remained with her until EMS arrived.

Agency policy

It is the responsibility of all officers to become familiar with and comply with their agency policies and guidelines regarding officer interactions and procedures involving persons with disabilities such as epilepsy and the management of seizures.

Strokes

[34.05.EO4]

Introduction

A victim experiences a stroke (i.e., *cerebrovascular accident (CVA)*) when an artery providing blood to the brain is blocked. A stroke can also be caused by a ruptured blood vessel in the brain creating pressure on brain tissues.

Indicators

A number of possible indicators of a cerebrovascular accident (CVA) are noted in the following table:

	Indicators of Stroke
Mental Status	<ul style="list-style-type: none">• Confusion• Delirium• Dizziness• Headache• Unconsciousness
Mobility	<ul style="list-style-type: none">• Paralysis on one side of the body• Numbness or weakness of a limb• <u>Convulsions</u>• Weak or sagging facial muscles• Unusual or severe neck or facial pain• Poor balance, clumsiness
Vision	<ul style="list-style-type: none">• Blurred or double vision• Unequal pupil size• Sensitivity to light
Communication	<ul style="list-style-type: none">• Impaired, slurred speech• Difficulty understanding speech
Other	<ul style="list-style-type: none">• Difficulty breathing and swallowing• Nausea, vomiting

Continued on next page

Strokes, Continued

First aid measures

If a peace officer suspects that a victim has experienced a stroke, the following first aid measures should be taken.

	First Aid Measures for Stroke
Assessment	<ul style="list-style-type: none">• Conduct initial and focused surveys• Activate the EMS system (if not already activated)
Treatment	<ul style="list-style-type: none">• If <i>conscious</i>, elevate head and shoulders slightly (semi-sitting position)• If unconscious, and appropriate, place in recovery position on affected side• Continue to monitor ABCs• Maintain an open airway• Reassure victim• Take appropriate actions to prevent shock• Protect any numb or paralyzed areas from possible injury• <i>Do not</i> give victim anything by mouth

Diabetic Emergencies

[34.05.EO5, 34.05.EO6, 34.05.EO7]

Introduction

The basic source of energy within the human cell is **glucose**. Glucose is circulated throughout the body in the bloodstream. In order for glucose to pass from the bloodstream into the body's cells, **insulin**, a hormone produced by the pancreas, must be present. An imbalance of insulin in the body and glucose in the bloodstream can lead to life-threatening conditions.

Diabetes

Diabetes is a condition brought on when the body does not produce a sufficient amount of insulin. Diabetes can occur at any age.

Insulin shock and diabetic coma

An improper level of insulin in the body can lead to two potentially dangerous conditions: **insulin shock** (hypoglycemia) and **diabetic coma** (hyperglycemia).

Indicators

There are a number of different indicators of a possible diabetic emergency. The following table presents a comparison of the indicators of insulin shock and diabetic coma:

	Indicators of a Diabetic Emergency	
	Insulin Shock	Diabetic Coma
Onset	<ul style="list-style-type: none">• Can come on suddenly• More common	<ul style="list-style-type: none">• Usually slow onset
Skin	<ul style="list-style-type: none">• Pale, cold, moist, clammy• Profuse perspiration	<ul style="list-style-type: none">• Red, warm, dry

Continued on next page

Diabetic Emergencies, Continued

Indicators
(continued)

	Indicators of a Diabetic Emergency	
	Insulin Shock	Diabetic Coma
Breathing	<ul style="list-style-type: none">• Otherwise normal breathing	<ul style="list-style-type: none">• Labored breathing• Breath has sickly sweet (fruity) smell
Mental Status	<ul style="list-style-type: none">• Hostile or aggressive behavior• Fainting, seizure• May appear intoxicated	<ul style="list-style-type: none">• Decreased level of consciousness• Restlessness• Confusion• May appear intoxicated
Pulse	<ul style="list-style-type: none">• Rapid pulse	<ul style="list-style-type: none">• Weak, rapid pulse
Other	<ul style="list-style-type: none">• Dizziness, headache• Excessive hunger• Drooling• Nausea or vomiting	<ul style="list-style-type: none">• Dry mouth, intense thirst• Excessive hunger• Excessive urination• Abdominal pain, vomiting• Sunken eyes

Continued on next page

Diabetic Emergencies, Continued

Diabetic emergency vs. other conditions

There are a number of indicators of a diabetic emergency that are similar to indications of alcohol intoxication or substance abuse.

- Aggressiveness
- Combativeness
- Uncooperative behavior
- Confusion, dazed appearance
- Decreased level of consciousness
- Impaired motor skills

Peace officers should *never assume* that a person exhibiting these indicators is intoxicated without further questioning and assessment.

First aid measures

Because it can be extremely dangerous and life-threatening if left untreated, a possible diabetic emergency must be thoroughly assessed and first aid measures taken immediately.

Along with *activating the EMS system* (if not already activated) officers should take the following first aid measures.

	First Aid Measures for Diabetic Emergencies
Assessment	<ul style="list-style-type: none">• Ask questions to determine if victim has exhibited any indications of a potential diabetic emergency• Look for medical alert jewelry or other indicators that the person may be diabetic (e.g., wallet identification card, oral medications, insulin in the refrigerator, etc.)• Conduct initial and focused surveys

Continued on next page

Diabetic Emergencies, Continued

First aid measures (continued)

	First Aid Measures
Treatment	<ul style="list-style-type: none">• If unconscious:<ul style="list-style-type: none">- place victim in recovery position, if appropriate- <i>do not</i> attempt to give the victim anything by mouth• If <i>conscious</i> and alert<ul style="list-style-type: none">- place victim in a position of comfort- give the victim <i>oral glucose</i>• Provide reassurance to the victim• Continue to monitor the victim's ABCs• Take appropriate measures to prevent shock

NOTE: Types of oral glucose include:

- table sugar (*not a sugar substitute*) dissolved in water
 - orange juice
 - honey
 - hard candy placed under the tongue
-

Poisoning and Substance Abuse

[34.05.EO7]

Introduction

A **poison** is any substance introduced to the body that causes damage. Children are the most common victims of poisoning. Adults may become victims of poisons from their environment as well as by overdoses of medications or substance abuse.

Poison identification

Peace officers acting as First Responders should make every effort to obtain pertinent information from the victim, family members, and bystanders as well as through their own observations.

Officers should attempt to determine:

- what substance or combination of substances is involved
- when was the victim exposed to the substance
- how much of the substance the victim was exposed to
- length of time the victim was exposed
- what effects the victim has experienced since the exposure
- what if any interventions others (e.g., family members, friends, etc.) have already taken

Officers should also look for indications of:

- medical and/or mental problems (e.g., bottles of medications, medical alert jewelry, etc.)
 - existence of injuries
 - evidence of alcohol or illegal drug use (e.g., drug paraphernalia, bottles, etc.)
-

Continued on next page

Poisoning and Substance Abuse, Continued

Peace officer safety

Peace officers responding to medical emergencies involving poisons should take appropriate precautions against exposing themselves to the substance as well.

Officers should:

- not enter any environment containing poisonous gases or fumes until the area has been well ventilated
 - use care when handling hypodermic needles or other sharp objects that may be contaminated
 - not take any actions that could cause them to become victim's of the substance
 - follow agency policies and procedures
-

Manner of exposure

Poisons can be taken into the body in various ways, either accidentally or deliberately. The following table describes each:

	Description	Examples
Ingestion	<ul style="list-style-type: none">• Swallowing the substance	<ul style="list-style-type: none">• Medications• Illegal drugs• Alcohol• Household or industrial chemicals• Petroleum products• Improperly prepared food
Inhalation	<ul style="list-style-type: none">• Breathing in the substance in the form of gases, vapors, or fine sprays	<ul style="list-style-type: none">• Carbon monoxide• Household or industrial chemicals• Petroleum products

Continued on next page

Poisoning and Substance Abuse, Continued

Manner of exposure (continued)

	Description	Examples
Absorption	<ul style="list-style-type: none">• Taking in the substance through unbroken skin or membranes	<ul style="list-style-type: none">• Insecticides• Agricultural chemicals• Plant materials (e.g., poison ivy)
Injection	<ul style="list-style-type: none">• Through deliberate or accidental punctures to the skin	<ul style="list-style-type: none">• Illegal drugs• Medications

Indicators

Specific indicators will vary greatly depending on the *poisonous substance* involved. The following table presents a number of indicators that may aid in determining the manner in which the poison was taken into the body:

	Indicators of Poisoning
Ingestion	<ul style="list-style-type: none">• Possible burns around the mouth or hands• Unusual stains or colors on skin or mouth• Strong odor on victim's breath• Difficulty breathing• Sudden unexplained, severe illness• Vomiting, abdominal cramping
Inhalation	<ul style="list-style-type: none">• Dizziness• Headache• Nausea, vomiting, abdominal cramping

Continued on next page

Poisoning and Substance Abuse, Continued

Indicators (continued)

	Indicators of Poisoning
Absorption	<ul style="list-style-type: none">• Itching• Redness, rash, or some other form of skin reaction• Increased skin temperature• Headache• Eye irritation• Allergic reaction
Injection	<ul style="list-style-type: none">• Swelling at injection site• Redness of affected skin

NOTE: Some individuals may have a systemic (i.e., whole body) reaction when exposed to certain substances. One symptom of a systemic reaction is anaphylactic shock, a condition that causes the airway to swell, making breathing difficult if not impossible.

Continued on next page

Poisoning and Substance Abuse, Continued

First aid measures

Just as the indicators vary, first aid measures for treating a poisoning victim vary based on the specific type of poison and how it was ingested. For serious medical emergencies, the officer should *activate the EMS system* (if not already activated).

If a peace officer, acting as an First Responder, suspects that a victim has been exposed to a poison, that officer should take the following first aid measures:

	First Aid Measures for Poisoning
Assessment	<ul style="list-style-type: none">• Determine the victim's level of consciousness• Conduct initial and secondary assessments (Look for signs of swelling, redness, puncture sites, etc.)• Attempt to identify the poisonous substance
Treatment	<ul style="list-style-type: none">• If necessary, remove victim from source of poison (gases, vapors, plant material, etc.), if done safely• If <i>victim is unconscious</i>, place in a recovery position, if appropriate• Contact poison control center for treatment advice• If exposure has been through absorption:<ul style="list-style-type: none">- flood affected areas with water- wash affected areas with soap and water• Take precautions to prevent shock• Continue to monitor victim's ABCs

Continued on next page

Poisoning and Substance Abuse, Continued

Alcohol and substance abuse

There are a number of indicators specific to poisonings caused by alcohol and/or substance abuse, of which officers should be aware. Indications of withdrawal from alcohol or drugs can include, but are not limited to:

- confusion
- hallucinations or psychotic behavior
- blackouts (i.e., loss of short term memory)
- altered mental status
- tremors or shaking
- profuse sweating
- increased pulse and breathing rates

Certain types of drug abuse can also be associated with violent outbursts and aggressive behavior. Officers should take necessary precautions to protect themselves and others when assisting an individual suspected of drug or alcohol abuse.

NOTE: For additional information regarding indicators and behavioral characteristics associated with specific types of drugs and their use, refer to LD 12: *Controlled Substances*.

Temperature Related Emergencies

[34.05.EO8, 34.05.EO9]

Introduction

The body must generate heat in order to maintain a constant internal body temperature. Excess heat is released through the lungs and skin. If the body is not able to generate enough heat or generates too much heat, the body's systems may shut down, creating a life-threatening condition.

Cold related emergencies

Hypothermia occurs when the body's internal temperature drops to the point where body systems are affected. Hypothermia can range from mild to severe due to a number of factors:

- length of exposure to cold temperatures
- condition of victim's clothing (wet or dry)
- age of victim (elderly and very young are more susceptible)
- existence of underlying illnesses or disorders (e.g., circulatory problems, infections/fever)
- traumatic injury (e.g., head injuries, etc.)
- alcohol consumption

NOTE: Hypothermia can develop even in temperatures that are above freezing.

Continued on next page

Temperature Related Emergencies, Continued

Indicators

The following table identifies indicators of hypothermia:

	Indicators of Hypothermia
Mild-Moderate Hypothermia	<ul style="list-style-type: none">• Violent shivering• Numbness• Fatigue• Forgetfulness• Confusion• Cold skin• Loss of motor coordination• Rapid breathing and pulse
Severe Hypothermia	<ul style="list-style-type: none">• Lack of shivering• Rigid muscles and joints• Slow shallow breathing• Irregular, weak, slow pulse• Dilated pupils• Decreased level of consciousness leading to unconsciousness• Unwilling or unable to do simple activities• Slurred speech• Blue-grey skin color

NOTE: Unconscious victims with hypothermia may appear clinically dead due to stiffness and extremely low pulse and respiration rates.

Continued on next page

Temperature Related Emergencies, Continued

First aid measures for hypothermia

First aid measures are dependent upon whether the victim's condition is mild or severe. Activate the EMS system (if not already activated).

	First Aid Measures for Hypothermia
Mild-Moderate Hypothermia	<ul style="list-style-type: none">• Move victim to a warm environment (e.g., patrol vehicle)• Remove any wet clothing and replace with dry• Re-warm victim <i>slowly</i>• Provide care to prevent shock• Monitor the victim's ABCs• If victim can swallow easily, give warm liquids (e.g., water)• Do not give alcoholic or caffeinated beverages, or nicotine because they can further hinder circulation• Keep the victim moving to increase circulation
Severe Hypothermia	<ul style="list-style-type: none">• Determine the victim's level of consciousness• Conduct initial and focused surveys• If victim has a pulse but is not breathing, begin rescue breathing• If victim has no pulse and is not breathing, begin CPR

NOTE: If the victim cannot be moved, take necessary measures to keep the victim from losing more body heat (e.g., wrap in blankets, etc.).

Continued on next page

Temperature Related Emergencies, Continued

Frostbite

Exposure to cold temperatures can also lead to cold-related injuries to parts of the body. Injuries that are the result of cold or freezing tissue include **frostnip** and **frostbite**.

Areas most commonly affected by frostbite are:

- ears
 - face and nose
 - hands
 - feet and toes
-

First aid measures for frostbite

The indicators of frostbite vary depending on the extent of exposure and damage. The following table presents information regarding the different degrees of frostbite:

	Indicators	First Aid Measures
Frostnip	<ul style="list-style-type: none">• Superficial freezing of skin's outer layer• Numbness• Pale skin color• Skin feels flexible to the touch• Tingling or burning sensation to the area upon warming	<ul style="list-style-type: none">• Remove victim from source of cold• Remove/loosen any clothing that may restrict circulation to the area

Continued on next page

Temperature Related Emergencies, Continued

First aid measures for frostbite (continued)

	Indicators	First Aid Measures
Frostbite	<ul style="list-style-type: none">• Freezing of tissue below the skin's surface• Skin feels stiff to the touch• Pale, grey-yellow, grey-blue, waxy, blotchy skin color• Pain or aching sensation to the area upon warming	<ul style="list-style-type: none">• Immobilize and protect the area• Wrap area in dry, loose bandage<ul style="list-style-type: none">- Wrap each digit separately• Allow area to rewarm slowly• Provide care to prevent shock

NOTE: ***Do not*** rub the affected area. Damage may be caused by ice crystals that have formed below the surface of the skin.

NOTE: ***Do not*** allow the frozen area to refreeze after warming. Refreezing can cause extensive tissue damage.

Heat cramps and heat exhaustion

If the body is unable to get rid of excess heat, the body's internal temperature can rise to a level that can cause pain, organ damage, or even death.

Heat cramps can strike when the body loses too much salt due to prolonged perspiration.

Continued on next page

Temperature Related Emergencies, Continued

Heat cramps and heat exhaustion (continued)

Heat exhaustion is a condition that is more serious than heat cramps. It is a form of shock that can occur when the body becomes dehydrated. Once a person who is exposed to heat becomes thirsty, that person may already be suffering from dehydration.

In both cases, the person will have a normal body temperature and be able to think clearly.

First aid measures for heat cramps and heat exhaustion

Heat cramps and heat exhaustion can be relatively minor illnesses if they are recognized and treated rapidly. The following table identifies the indicators as well as first aid measures for each:

	Indicators	First Aid Measures
Heat Cramps	<ul style="list-style-type: none">• Painful muscle spasms usually in the legs or abdomen• Lightheadedness• Weakness	<ul style="list-style-type: none">• Remove victim from source of heat• Have the victim rest• Massage cramped muscles• Provide water in small amounts• Do not give alcohol or caffeinated beverages
Heat Exhaustion	<ul style="list-style-type: none">• Profuse sweating• Dizziness• Headache• Pale, clammy skin• Rapid pulse• Weakness• Nausea and vomiting	

Continued on next page

Temperature Related Emergencies, Continued

Heat stroke

If heat exhaustion is not recognized and treated promptly, **heat stroke** may set in. Heat stroke occurs when the body's internal temperature rises abnormally high. Heat stroke is a *life-threatening* condition requiring immediate attention.

The following table provides information regarding the indicators as well as first aid measures for heat stroke:

	Indicators	First Aid Measures
Heat Stroke	<ul style="list-style-type: none">• Red, hot, dry skin• Rapid, irregular pulse• Shallow breathing• Confusion• Weakness• Possible seizures and/or unconsciousness	<ul style="list-style-type: none">• Activate the EMS system (if not already done)• Continue to monitor ABCs• Remove victim from source of heat• Loosen or remove victim's clothing• Cool victim's body as rapidly as possible by:<ul style="list-style-type: none">- dousing the person with cool water- wrapping the person in a wet sheet or blanket- placing an ice pack wrapped in a towel on the person's neck, groin, or armpits• Provide care to prevent shock

Continued on next page

Temperature Related Emergencies, Continued

Heat Stroke (continued)

NOTE: Heat stroke can affect children or the elderly who have circulatory problems, even when they are not exposed to extreme heat.

NOTE: Dry hot conditions, versus heat with high humidity, can bring on less fatigue. For this reason, individuals may remain in a dry hot environment longer and become more susceptible to heat related illnesses.

Stings and Bites

[34.05.EO13]

Introduction

Insect stings, spider bites, and snake bites can all be sources of injected toxins. Certain insects, spiders, and snakes can inject toxins that cause serious consequences if not treated rapidly.

Anaphylactic shock

Anaphylaxis (i.e., anaphylactic shock) is a severe, life-threatening allergic reaction caused by exposure to certain allergens. Exposure to an allergen (via insect stings, foods, etc.,) can cause:

- blood vessels to dilate leading to a sudden drop in blood pressure
 - swelling of the tissues that line the respiratory system causing an obstructed airway
-

First aid measures

Epinephrine is a hormone produced by the body. When administered as a medication soon after exposure, epinephrine will constrict blood vessels and dilate the bronchioles helping to open the victim's airway.

Individuals who are subject to anaphylaxis often carry prescription epinephrine to use if such a reaction occurs.

Continued on next page

Stings and Bites, Continued

Insect stings and bites

Insects that *sting* include wasps, hornets, bees, yellow jackets, and fire ants. Insects that *bite* include mosquitoes, lice, gnats, and ticks. In either case, most insect stings and bites are little more than an irritation to the victim; unless they produce a venom which induces anaphylaxis.

The following table identifies most common indicators and first aid measures for insect bites and stings:

	Indicators	First Aid Measures
Usual Reaction	<ul style="list-style-type: none">• Local swelling• Minor pain• Itching	<ul style="list-style-type: none">• Remove stinger by scraping with firm object (<i>Do not</i> attempt to <i>pull</i> out with tweezers.)• Wash area with soap and water• Apply ice to reduce swelling and slow the rate of toxin absorption
Allergic Reaction	<ul style="list-style-type: none">• Itching• Burning sensation• Hives• Swollen lips and tongue• Difficulty breathing• Respiratory failure	<ul style="list-style-type: none">• Assist victim in taking prescribed epinephrine• Activate the EMS system• Monitor ABCs• Take precautions to prevent shock• Be prepared to use rescue breathing or CPR if necessary

Continued on next page

Stings and Bites, Continued

Marine life stings

Poisoning from marine life is generally caused by the stings or puncture wounds of poisonous organisms (e.g., jellyfish, sea nettle, sea anemone, coral, Portuguese Man-O-War, stingray, sea urchin, etc.). The following table presents first aid measures for treating a victim of a marine life sting:

Indicators	First Aid Measures
<ul style="list-style-type: none">• Pain• Swelling• Discoloration	<ul style="list-style-type: none">• Wash area with soap and water• Apply <i>heat</i> (not cold) to deactivate venom enzymes• Apply dressing to puncture wounds if necessary• Monitor the victim's ABCs• If an allergic reaction (i.e., anaphylaxis) is suspected:<ul style="list-style-type: none">- assist victim in taking prescribed epinephrine if they have it- activate the EMS system- monitor ABCs- take precautions to prevent shock- be prepared to use rescue breathing or CPR if necessary

Continued on next page

Stings and Bites, Continued

Spider bites

Although most spiders are harmless, the venom from the Black Widow and Brown Recluse spiders can cause serious illness. The following table provides information regarding first aid measures for treating the victim or bites from these spiders:

	Description	Indicators	First Aid Measures
Black Widow	Marked by a real, hourglass shaped spot on its abdomen	<ul style="list-style-type: none">• Dull pain within 15 minutes of bite• Headache• Chills• Sweating• Dizziness• Nausea and vomiting	<ul style="list-style-type: none">• Wash site with soap and water• Apply ice to reduce swelling and slow the rate of venom absorption• Monitor victim's ABCs• Have victim seek medical treatment• Treat for shock
Brown Recluse	Marked by a brown or purplish violin-shaped mark on its back	<ul style="list-style-type: none">• Painless ulcer at site where bitten• Ulcer gradually increases in size (bull's-eye appearance)• Chills• Aches• Nausea	

Continued on next page

Stings and Bites, Continued

Snake bites

Most *native* snakes in California are not poisonous. The exceptions are the Rattlesnake and poisonous snakes that have been brought into the state. Bites from poisonous snakes can be extremely serious but rarely fatal. The following table presents first aid measures for treatment of a snake bite victim:

Indicators	First Aid Measures
<ul style="list-style-type: none">• Pain, redness, and swelling which begins quickly after bite• Fang marks• Shortness of breath• Tingling around victim's mouth• Bloody vomiting (appearance of coffee grounds)• Shock• Coma	<ul style="list-style-type: none">• Keep the victim calm and quiet• Place the affected area in a neutral position• Immobilize the affected area (use splints if necessary)• <i>Do not</i> attempt to suck the venom from the bite• <i>Do not</i> cut the area• Take measures to prevent shock• Seek medical attention

Continued on next page

Stings and Bites, Continued

Animal and human bites

Although animal and human bites do not involve toxins or venom, they can become infected if not treated properly. The victim of an animal bite may also be at risk of rabies if the bite was caused by an infected animal.

Indicators	First Aid Measures
<ul style="list-style-type: none">• Pain, redness, swelling at the site• Damage can range from puncture wound of skin to severe laceration or avulsion of tissue	<ul style="list-style-type: none">• Control bleeding if necessary• Wash site with soap and water• Cover with clean dry dressing• Take measures to prevent shock• Monitor victim's ABCs• Seek medical attention

NOTE: If possible, an attempt should be made to identify the circumstances that led to the bite and locate the animal for rabies testing.

Chapter Synopsis

Learning need	Peace officers must be able to provide basic first aid measures for a number of medical emergencies and conditions that they may encounter.
----------------------	---

Cardiac emergencies [34.05.EO1]	A cardiac emergency can range from a victim experiencing shortness of breath or palpitations to full cardiac arrest. Swift action is necessary on the part of peace officers as first responders to prevent death or life threatening injury.
--	---

Respiratory emergencies [34.05.EO2]	Respiratory emergencies may range from victims who are having breathing difficulty, but nevertheless are breathing adequately, to victims who are not able to breathe at a level that will sustain life.
--	--

Seizures [34.05.EO3]	A seizure is the result of a surge of energy through the brain. Instead of discharging electrical energy in a controlled manner, the brain cells continue firing, causing massive involuntary contractions of muscles and possible unconsciousness. If only part of the brain is affected, it may cloud awareness, block normal communication, and produce a variety of undirected, unorganized movements.
---------------------------------------	--

Strokes [34.05.EO4]	A victim experiences a stroke (i.e., <i>cerebrovascular accident (CVA)</i>) when an artery providing blood to the brain is blocked and the tissues of that part of the brain do not receive adequate amounts of oxygen. A stroke can also be caused by a ruptured blood vessel in the brain creating pressure on brain tissues.
--------------------------------------	--

Continued on next page

Chapter Synopsis, Continued

Diabetic emergency vs. other conditions
[34.05.EO5, 34.05.EO6]

There are a number of indicators of a diabetic emergency that are similar to indications of alcohol intoxication or substance abuse.

Poisoning/ substance abuse
[34.05.EO7]

Peace officers responding to medical emergencies involving poisons should take appropriate precautions against exposing themselves to the substance as well.

Hypothermia/ frostbite
[34.05.EO8]

The body must generate heat in order to maintain a constant internal body temperature. Any excess heat is released through the lungs and skin. If the body is not able to generate enough heat or generates too much heat, the body's systems may shut down, creating a life-threatening condition.

Heat cramps/ heat exhaustion/ heat stroke
[34.05.EO9]

If the body is unable to get rid of excess heat, the body's internal temperature can rise to a level that can cause pain, organ damage, or even death.

Stings/bites
[34.05.EO13]

Stings and bites can be sources of injected toxins. Certain insects and spiders can inject toxins that cause serious consequences if not treated rapidly.

Introduction

Activity questions

- Continued on next page*

Activity questions (continued)

- Continued on next page*

Workbook Learning Activities, Continued

Activity questions (continued)

5. How do you recognize a seizure? What should you do to protect the victim during the seizure? How would your response differ if the seizure is not over after about three minutes?

Classroom Demonstrations

Introduction

During class, the instructor will discuss and demonstrate specific techniques for recognizing and treating a variety of medical emergencies that peace officers may encounter. Students will have the opportunity to practice each technique and develop their own levels of skill.

Continued on next page

Classroom Demonstrations, Continued

Student notes

Chapter 6

Childbirth

Overview

Learning need Peace officers must have a basic understanding of first aid measures to assist before, during, and after child birth in an emergency situation.

Learning objectives The following table identifies the student learning objectives for this chapter:

After completing study of this chapter, the student will be able to:	E.O. Code
<ul style="list-style-type: none">Recognize the signs of imminent birth	34.06.EO2
<ul style="list-style-type: none">Recognize appropriate first aid measures for each of the following emergency situations that may occur in childbirth:<ul style="list-style-type: none">Excessive vaginal bleedingNewborn fails to breathe	34.06.EO7 34.06.EO8

Continued on next page

Overview, Continued

In this chapter

This chapter will focus on basic first aid measures for assisting a woman during childbirth. Refer to the following table for specific topics:

Topic	See Page
Normal Labor and Childbirth	6-3
Complications in Childbirth	6-5
Chapter Synopsis	6-6
Workbook Learning Activities	6-7

Normal Labor and Childbirth

[34.06.EO2]

Introduction

Only the woman herself can *deliver* her infant. If called upon to assist during normal childbirth, it is the peace officer's role to *activate the EMS system*, *determine if the woman can be transported* prior to the birth, and *provide support* as the woman delivers the infant.

First responder actions

The First Responder should build a rapport by introducing themselves to the mother. First responders should:

- use Personnel Protective Equipment (PPE) properly
 - prevent explosive delivery with gentle pressure on the delivery head
 - use a firm grip on the infant as newborns are slippery
 - dry infant quickly and keep warm
 - keep new born at the same level as the mother
 - delivery of placenta
-

Transport prior to birth

One of the first decisions the assisting officer will need to make is whether or not to arrange for transport to a medical facility prior to delivery of the infant. The woman can be safely transported only if she is in the *first stage of labor* (not straining, contractions are greater than 5 minutes apart, and there are no signs of crowning).

NOTE: If transport is safe, continue to monitor the woman while waiting for EMTs to arrive at the scene.

Continued on next page

Normal Labor and Childbirth, Continued

Imminent birth

If any of the following conditions exist, the mother is entering the second stage of labor and birth *may* be imminent. The woman should *not be transported*.

Indications that birth may be imminent include:

- contractions that are occurring *less than two minutes apart* (five minutes if second or subsequent birth)
 - the woman feels an urgent need to bear down
 - crowning is present
 - the amniotic sac has ruptured (i.e., the woman's water has broken)
-

Complications in Childbirth

[34.06.EO7, 34.06.EO8]

Introduction

Although most deliveries take place without difficulty, complications may occur. At such times, it is extremely important to activate the EMS system, provide emotional support and reassurance to the woman and take appropriate first aid measures until additional EMS personnel arrive at the scene.

Excessive bleeding prior to delivery

The presence of some blood prior to the beginning of delivery is normal. If bleeding is excessive, it may be an indication of a complication. There are a number of possible causes for this condition.

Indicators and first aid measures are noted in the following table:

Indicators	First Aid Measures
<ul style="list-style-type: none">• Profuse bleeding from vagina• Mother may or may not experience abdominal pain	<ul style="list-style-type: none">• Take appropriate measures to prevent shock• Absorb blood with towels or pads, apply more as necessary• Arrange for immediate transfer to a medical facility

Transportation considerations

Should any of the following conditions exist, immediately transport mother to nearest medical facility:

- Limb presentation
- Breach presentation
- Cord presentation
- Delayed delivery

In preparing for transportation, insure mother is in the knee to chest position.

Continued on next page

Complications in Childbirth, Continued

Newborn fails to breathe

A newborn should begin breathing on its own within 30 seconds after birth. If it fails to breathe, rubbing the infant's back or tapping the infant's feet may stimulate spontaneous respiration.

If the newborn still fails to breathe on its own, rapid first aid measures are required. The following actions should be taken:

	First Aid Measures
Airway	<ul style="list-style-type: none">• Open the infant's airway• Do not overextend the head and neck. This could close the airway or damage the infant's trachea
Breathing	<ul style="list-style-type: none">• Look and listen for breathing• If none, provide two breaths ("puffs")
Circulation	<ul style="list-style-type: none">• Check for a brachial pulse• If there <i>is a pulse</i>, begin rescue breathing• If there is <i>no pulse</i>, begin CPR immediately

NOTE: For additional information regarding infant rescue breathing and CPR, refer to Chapter 3: *Basic Life Support*.

Chapter Synopsis

Learning need Peace officers must have a basic understanding of first aid measures to assist before, during, and after delivery in an emergency situation.

Imminent birth
[34.06.EO2] Indications that birth may be imminent include:

- contractions that are occurring *less than two minutes apart* (five minutes if second or subsequent birth)
- the amniotic sac has ruptured (i.e., the woman’s “water has broken”)
- the woman feels an urgent need to bear down, and/or crowning is present

Excessive bleeding prior to delivery
[34.06.EO7] If the woman experiences profuse bleeding from the vagina prior to delivery, the assisting peace officer should:

- take appropriate measures to prevent shock
- absorb blood with towels or pads, adding them as necessary
- arrange for immediate transfer to a medical facility

Newborn fails to breathe
[34.06.EO8] A newborn should begin breathing on its own within 30 seconds after birth. If newborn fails to breathe after rubbing its back or tapping its feet, take appropriate action.

Workbook Learning Activities

Introduction

To help you review and apply the material covered in this chapter, a selection of learning activities has been included. No answers are provided. However, by referring to appropriate text, you should be able to prepare a response.

Activity questions

1. Under what conditions should the woman be transported even though her labor has progressed beyond the second stage indicated?

Continued on next page

Workbook Learning Activities, Continued

Activity questions (continued)

2. You respond to a call regarding a disabled car in a busy intersection. The car is blocking one lane, causing congestion as other cars attempt to move by. When approaching the vehicle, you find a woman in labor. She tells you that this is the birth of her second child. The woman's partner explains that the labor pains began more than ten hours ago but since the first labor lasted over 16 hours, they had decided to delay going to the hospital. When the water broke and labor became more intense sooner than expected, they became concerned and started for the hospital. The woman's partner is not wearing a watch so he can't tell you how far apart the contractions are. The woman is very upset, screaming that she has to push. The partner, who is also upset, looks at you and asks "What are we supposed to do?"

Continued on next page

Workbook Learning Activities, Continued

Activity questions (continued)

3. What should an officer do if an infant does not spontaneously begin breathing immediately at birth? How would the officer know when to begin rescue breathing or CPR on the newborn? Should the umbilical cord be cut to facilitate the officer's actions?

Supplementary Material

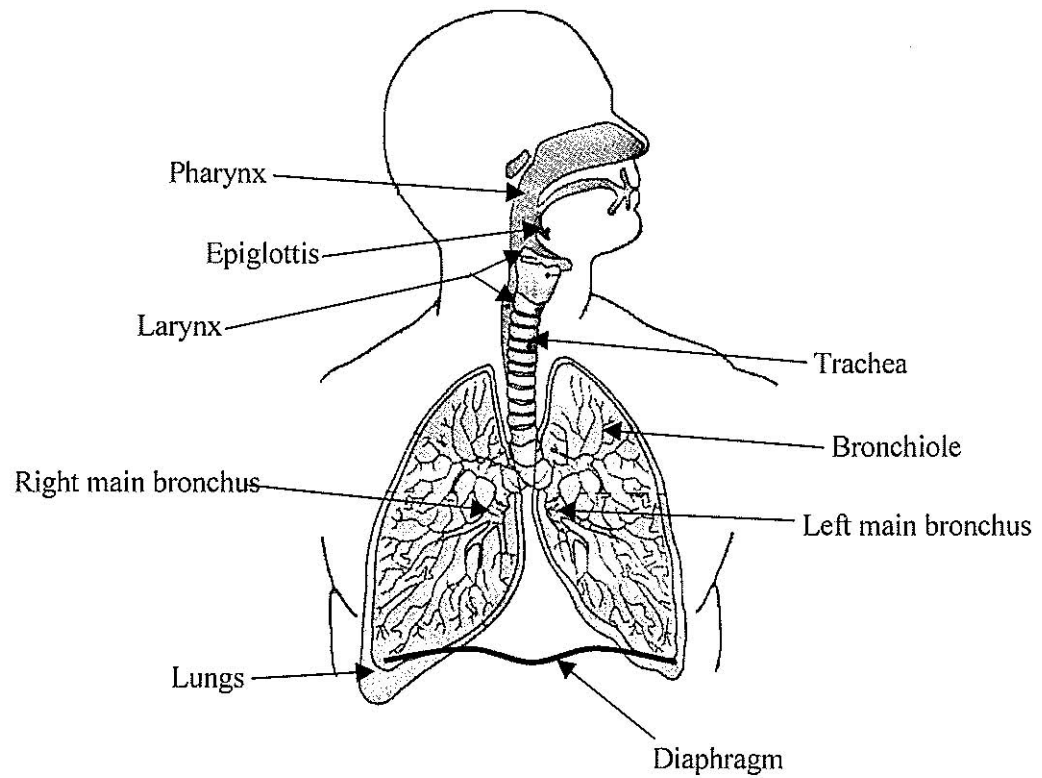
Illustrations

In this section

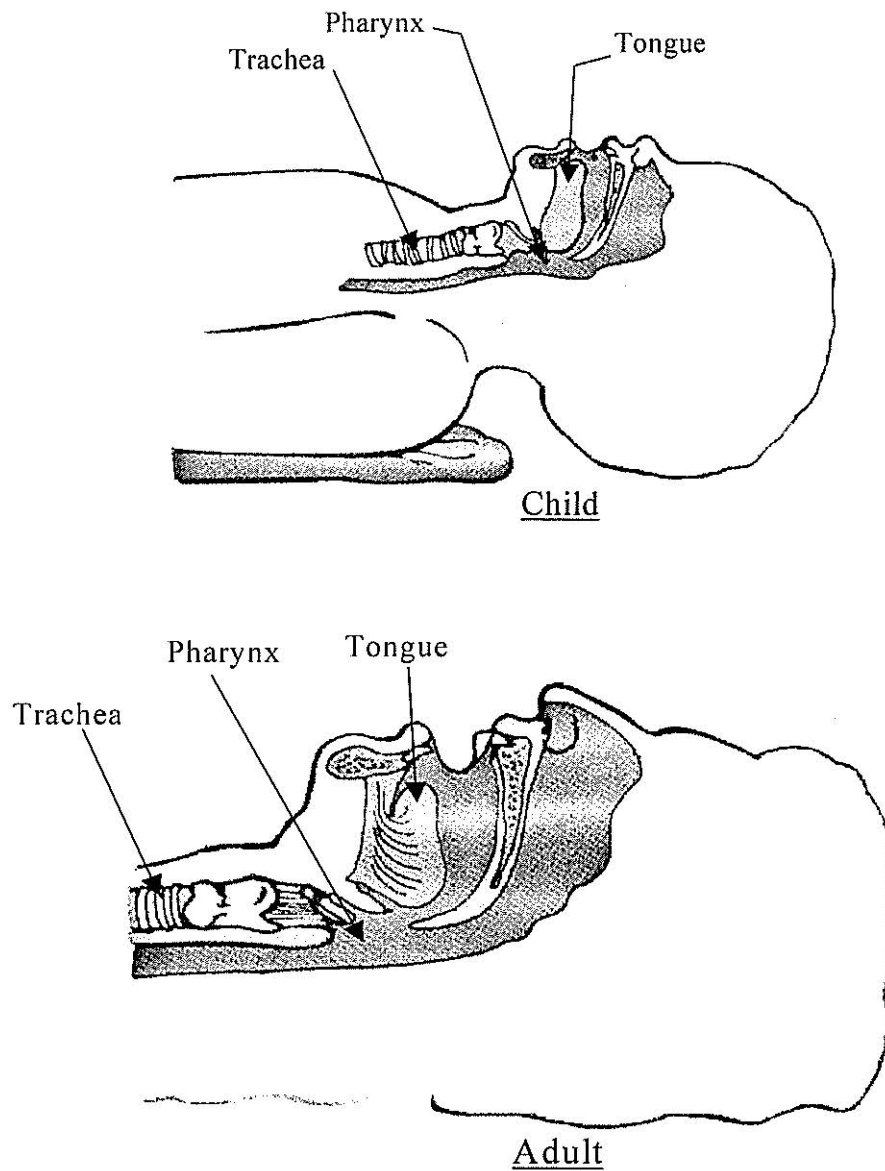
Refer to the following table for specific reference documents included in this section:

Graphic Illustrations	See Page
Respiratory system	S-2
Adult and Child Airways	S-3
Abdominal Quadrants	S-4
Major Organs	S-5
CPR Compression Site	S-6
Arterial Pressure Points	S-7
Infant In Utero	S-8

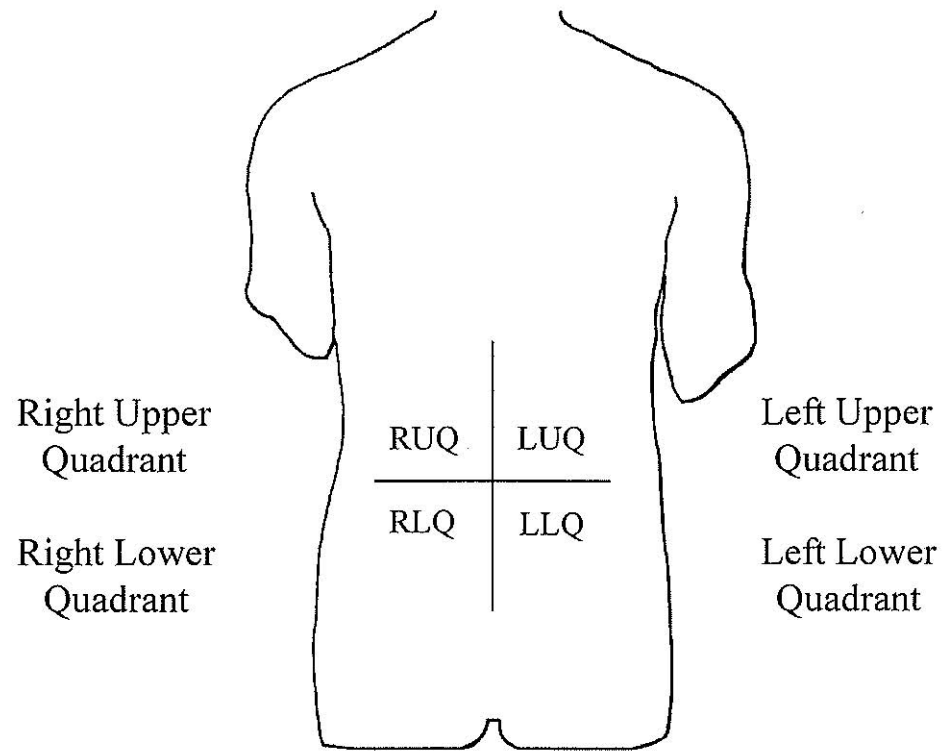
Respiratory System



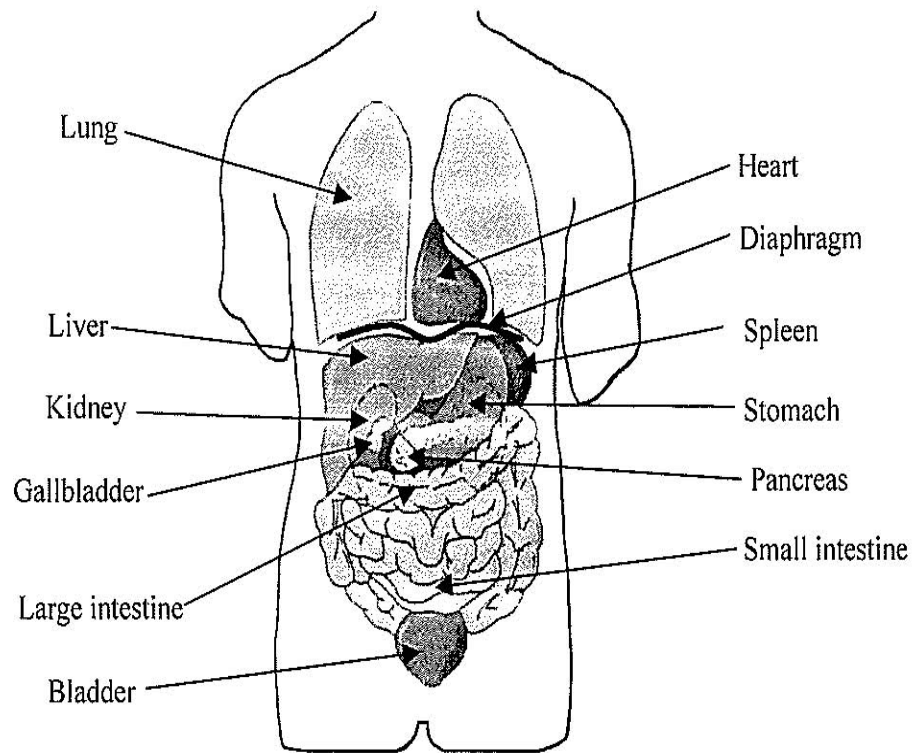
Adult and Child Airways



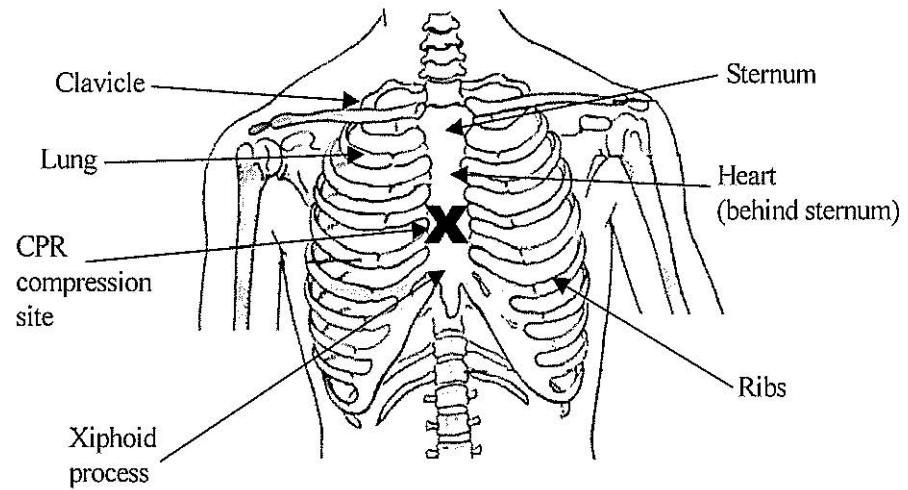
Abdominal Quadrants



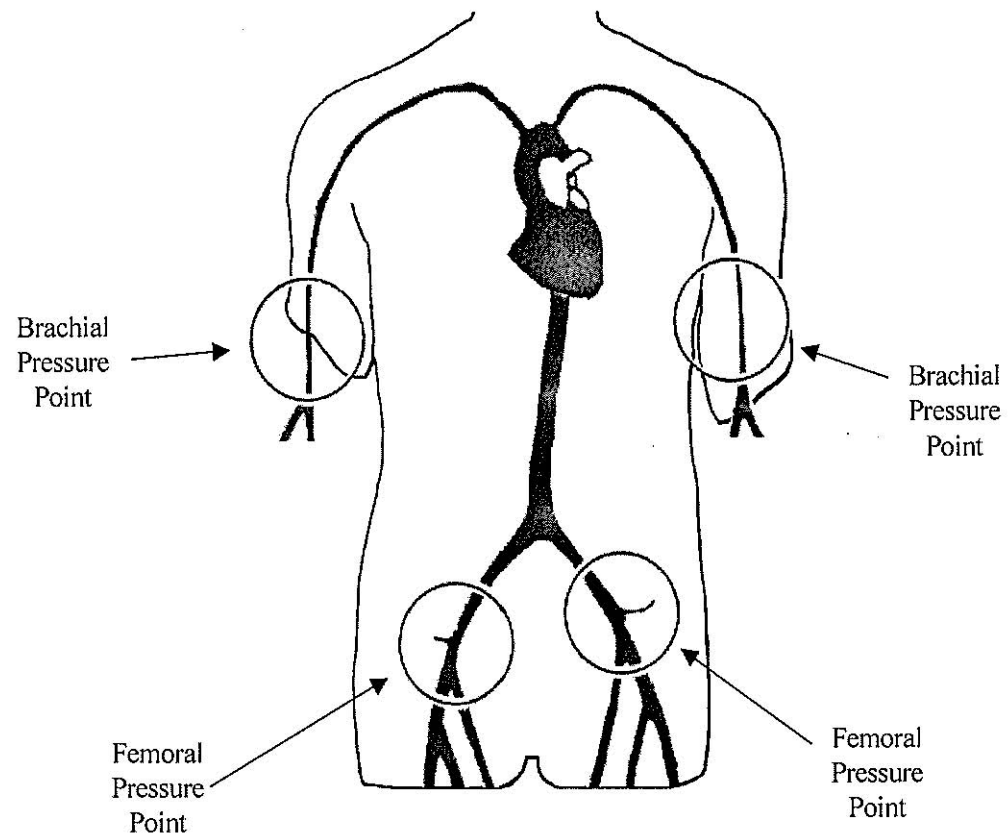
Major Organs



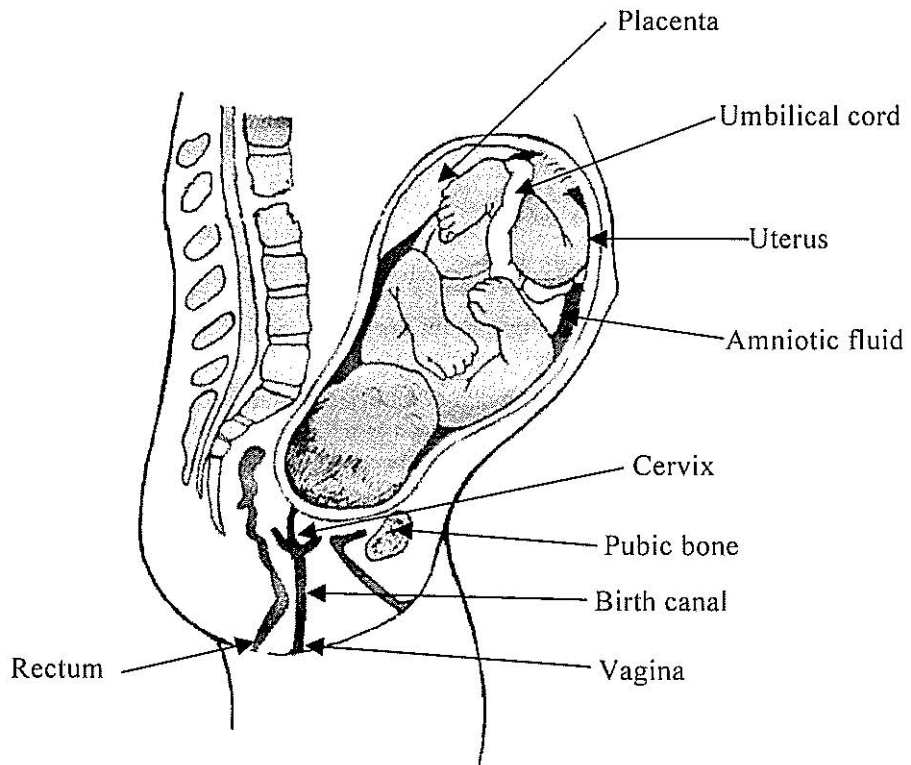
CPR Compression Site



Arterial Pressure Points



Infant In Utero



Glossary

Introduction	The following glossary terms apply only to Learning Domain 34: First Aid and CPR.
abdominal thrust	A technique used to force air out of the lungs, expelling obstructions from a victim's airway
abrasion	An open wound characterized by a scraping away of only the outer portion of the skin
airborne pathogen	A pathogen that is spread by tiny droplets sprayed during breathing, coughing, or sneezing
airway	The passageway by which air enters and leaves the lungs
amputation	An open wound characterized by a surgical or traumatic removal of a body extremity
anaphylaxis (anaphylactic shock)	A severe life-threatening allergic reaction caused by exposure to certain allergens
Automated external defibrillator (AED)	An external defibrillator capable of cardiac rhythm analysis which can deliver a electric shock to a cardiac arrest victim
avulsion	An open wound characterized by a part or structure of the body being forcibly torn or cut away

Continued on next page

Glossary, Continued

bacteria	Microscopic organisms that can live in water, soil, or organic material, or within the bodies of plants, animals, and humans
bandage	Any material used to hold a dressing in place
biological death	The point when breathing and circulation stop, brain cells die due to lack of oxygen, and vital organs begin to deteriorate
blood borne pathogen	A pathogen that is spread when the blood or other body fluids (e.g., semen, phlegm, mucus membranes, etc.) of one person come into contact with an open wound or sore of another
bone	Hard yet flexible tissue that provides support for the body as well as protection for vital organs
brachial artery	Artery located on the inside of the upper arm, between the biceps and triceps
Capillary refill	The filling of blood vessels that connect small veins with small arteries
cardiac arrest	A state when a victim is unresponsive, not breathing, and has no carotid pulse to indicate circulation
cardio-pulmonary resuscitation (CPR)	A method of artificially restoring and maintaining a victim's breathing and circulation

Continued on next page

Glossary, Continued

carotid artery	Large artery found on each side of the neck which carries blood to the head
carotid pulse	The most reliable indication that the victim's heart is functioning and to determine the severity of the victim's condition during the ABC assessment process; felt on either side of the neck
cartilage	Connective tissue that covers the outside of the end of bones; helps for certain flexible structures of the body and allows for smooth movement of bones at joints
chemical burn	Burn caused by acids or alkalis coming into contact with the skin
chest thrust	A maneuver used to force obstructions from a victim's airway; used instead of abdominal thrusts when the victim has abdominal injuries, is in late stages of pregnancy, is too obese for abdominal thrusts to be effective, or is an infant
clinical death	The moment breathing and circulation stop, reversible condition if basic life support is begun immediately
closed fracture	Broken bone where there is no break in the skin at the site of the fracture
convulsion	Violent uncontrolled muscle contractions

Continued on next page

Glossary, Continued

coronary artery disease (CAD)	A disease caused when fatty deposits build up in the walls of the arteries that feed the heart muscle (often referred to as coronary heart disease)
dermis	Second layer of the skin containing nerves, hair follicles, and sweat glands
diabetes	A condition brought on when the body does not produce a sufficient amount of insulin
diabetic coma	Overly high levels of glucose in the bloodstream (i.e., hyperglycemia)
dislocation	When a bone is pushed/pulled out of alignment from a joint
dressing	Any material applied to a wound to control bleeding and prevent contamination
electrical burn	Burn that occurs when the body becomes a conduit for electrical current
Emergency Medical Services (EMS)	First aid and medical services, rescue procedures and transportation, or other related activities necessary to ensure the health or safety of a person in imminent peril

Continued on next page

Glossary, Continued

emergency rescue personnel	Any person who is a peace officer, employee or member of a fire department, fire protection, or firefighting agency of the federal, state, city, or county government
epidermis	Outer-most layer of the skin
epilepsy	A medical condition characterized by seizures that recur without apparent reason
epinephrine	A hormone produced by the body; when administered as a medication, it will constrict blood vessels and dilate the bronchioles helping to open a victim's airway
fainting	A form of shock characterized by sudden unconsciousness
finger sweep	Opening the victims mouth by grasping both the tongue and lower jaw in hand then inserting the index finger along the victims cheek then the throat to hook the object
first-degree burn	Damage only to the epidermis, also known as a superficial burn
flail chest	A condition where the ribs and/or sternum is fractured and a segment of the chest wall does not move
focused survey	A systematic examination of a victim to determine whether serious conditions exist; includes gathering information, conducting head-to-toe check for injuries, and checking vital signs

Continued on next page

Glossary, Continued

fourth-degree burn	Damage to epidermis, dermis, fatty layer, muscle, bone, and underlying organs, also known as a full thickness burn
fracture	Complete or partial break of a bone
frostbite	Freezing of tissue below the skin surface
frostnip	Superficial freezing of outer layer of skin
gastric distention	When air is forced into the victim's stomach as well as lungs, causing the stomach to become distended; can happen during rescue breathing maneuver
glucose	The basic source of energy within the human cell
head-tilt/ chin-lift	Technique used to open a victim's airway when there are no indications of head, neck, or spinal injury
heart attack	When the heart muscle goes into distress due to lack of oxygenated blood. If the heart is sufficiently damaged, cardiac arrest will result. The greatest risk of death from heart attack is within 2 hours after the onset of symptoms
heat cramps	A condition caused when the body loses too much salt due to prolonged perspiration
heat exhaustion	A form of shock that can occur when the body becomes dehydrated; more serious than heat cramps

Continued on next page

Glossary, Continued

heat stroke	A life-threatening condition which occurs when the body's internal temperature rises abnormally high
hyper-ventilation	Abnormally rapid breathing
hypothermia	When the body's internal temperature drops to the point where body systems are affected
implied consent	The legal position that assumes that an unconscious, confused, or seriously ill victim would consent to receiving emergency medical services if that person were able to do so
incision	An open wound characterized by a smooth, straight cut caused by a sharp object
initial survey	A rapid systematic process for detecting life-threatening medical conditions; includes assessment for responsiveness, airway, breathing, circulation, control of major bleeding, and treatment for shock
insulin	A hormone produced by the pancreas that must be present in the body in order for glucose to pass from the bloodstream into the body's cells
insulin shock	Overly low levels of glucose in the bloodstream; hypoglycemia
jaw-thrust	Technique used to open a victim's airway when there are indications of head, neck, or spinal injury

Continued on next page

Glossary, Continued

joint	Location where bones fit together; allows for body movement
laceration	An open wound characterized by a jagged-edged wound caused by objects tearing or ripping the skin
ligament	Connective tissue that attaches to the end of bones and supports joints; allows for a stable range of motion
mild airway obstruction	When the victim indicates an airway problem (i.e., choking) but is able to speak or cough
occlusive dressing	A nonporous dressing used to cover a wound and create an air-tight seal
open fracture	Broken bone where there is a break in the skin at the site of the fracture
open wound	Any injury where the skin has been broken, exposing the tissue underneath
paradoxical breathing	When both sides of the chest do not move in a synchronized manner
pathogens	Agents that are spread through the air or by contact with another person's blood or body fluids that cause infection and disease

Continued on next page

Glossary, Continued

penetrating puncture	Open wound with <i>only</i> an entrance wound; can be shallow or deep
perforating puncture	Open wound with an entrance wound and an exit wound
perfusion	The continued flow of blood through the capillaries supplying the tissues and organs of the body with oxygen and removing waste products
poison	Any substance introduced to the body that causes damage
prone	face down
pulse	A pulse, measured in beats per minute, is an indication of the rate of blood flow through the body
puncture	An open wound characterized by a deep wound through the skin and other tissue
radiation burns	Illness and symptoms resulting from excessive exposure to radiation, whether that exposure is accidental or intentional (as in radiation therapy).
recovery position	On the victim's side with the head supported by the lower forearm

Continued on next page

Glossary, Continued

rescue breathing	The process of using one's own breaths to artificially breathe for a victim
respiration rate	The number of breathing cycles (inhaling and exhaling) per minute
respiratory arrest	Complete cessation of breathing
respiratory failure	The inability to intake oxygen, to the point where life cannot be sustained
second-degree burn	Damage to the epidermis and dermis, as known as partial thickness
seizure	The result of a surge of energy through the brain. Instead of discharging electrical energy in a controlled manner, the brain cells continue firing, bringing on sudden changes in sensation, behavior, or movement
severe airway obstruction	When a victim is unconscious and unable to breath after the airway has been opened and a finger sweep performed, or conscious but unable to speak, cough, or breathe
shock	A life-threatening condition caused by inadequate tissue perfusion
skeletal muscle	Soft fibrous tissue that controls movement of bones and joints

Continued on next page

Glossary, Continued

sprain	Severely stretched or torn ligament
strain	Over-stretched or torn muscle
stroke	When an artery providing blood to the brain is blocked and the tissues of that part of the brain do not receive adequate amounts of oxygen; can also be caused by a ruptured blood vessel in the brain creating pressure to brain tissues
supine	On the victim's back (face up)
tendon	Bands of connective tissue that bind muscles to bones
thermal burn	Burn caused by direct heat
third-degree burn	Damage to the epidermis, dermis, and into fatty layer and muscle beneath the skin also known as full thickness burn
virus	A submicroscopic agent that is capable of infecting living cells, reproducing, and causing various types of disease
vital signs	Vital signs are outward indications of what may be going on inside the body and whether or not a victim is injured or ill
