

# HANDBOOK OF EMERGENCY CARE PROCEDURES

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Dwight W. Lodge  
Harvey D. Grant



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Dwight W. Lodge  
Harvey D. Grant

*In affiliation with Rescue Training Associates, Ltd.*



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**To Fred and Valeria,  
without you this would have never been possible.**

**NOTICE**

*It is the intent of the author and publishers that this skills manual be used as part of a formal First Responder, EMT Basic, EMT Intermediate, EMT Paramedic course taught by a qualified instructor. The care procedures presented here represent accepted practices in the United States. They are not offered as a standard of care. Prehospital level emergency care is to be performed under the authority and guidance of a licensed physician. It is the reader's responsibility to know and follow local care protocols as provided by the medical advisors directing the system to which he or she belongs. Also, it is the reader's responsibility to stay informed of emergency care procedure changes.*

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# Foreword

In order to get the most out of this handbook you must use it as it was designed. It should be used as an adjunct to an emergency care text. Anytime you are instructed to perform a particular procedure, refer to the handbook and it will provide you with a step-by-step process to carry out the procedure properly.

Each procedure includes a bit of background information prior to the step-by-step explanation of its performance. Also, any relative facts which relate directly to the procedure will be preceded by a box (□). Any action points—steps that you must perform—are preceded by a bullet (●).

For example on page 339 under Fractured Scapula, you find as background information that “. . . you should note the quality of the patient's respirations, as rib fractures and pulmonary contusions frequently accompany injuries to the scapula.” Additional information or facts which will help in treating the patient are the signs and symptoms. These are preceded by a box, and include “point tenderness,” and “loss of normal range of motion.” Finally, the actual steps you must perform are preceded by bullets and include “Form a sling out of a triangular bandage,” and “Apply the sling to the arm of the injured side.”

# Preface

*A little neglect may breed great mischief . . . for want of a nail the shoe was lost; for want of a shoe the horse was lost; and for want of a horse the rider was lost.*

POOR RICHARD'S ALMANAC [1758]

Benjamin Franklin probably included those words in his almanac to make this point: Seemingly insignificant omissions can contribute to catastrophes. In no part of life is this more true than in the provision of prehospital emergency care.

If an emergency care provider fails to effectively ventilate a nonbreathing, noncirculating person during a CPR effort, the person is likely to die—the greatest catastrophe.

If an emergency care provider fails to effectively stabilize the injured cervical spine of an accident victim, movement during extrication and transportation may cause quadriplegia—not the greatest catastrophe perhaps, but to the victim and his family and friends, a catastrophe nonetheless.

If an emergency care provider fails to recognize a life-threatening problem during the patient assessment procedure and thus fails to initiate lifesaving measures . . . well, you get the idea.

Most emergency care procedures include a number of operations that must be performed correctly, in order, if the procedure is to be effective. Omitting steps can be attributed to stress, oversight, a misunderstanding of the importance of the steps, a temporary mental lapse, and of course, the lack of proper training.

Stress, oversight, misunderstanding, and amnesia are problems that each emergency care provider must deal with. The lack of training can be eliminated by better preparing instructors and expanding the procedural sections of emergency care textbooks. To those ends we dedicate this work.



# Acknowledgments

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## STANDARD TERMS

The following terms are used to denote direction of movement, position, and anatomical position.

# 1

## Medical Terminology

- ◻ **ABDUCTION** Movement away from the body's midline.
- ◻ **ADDUCTION** Movement toward the body's midline.
- ◻ **ADJACENT** Connecting toward a structure.
- ◻ **ANTERIOR** Front surface of the body.
- ◻ **ANTERIOR TO** In front of.
- ◻ **CAUDAD** Toward the tail.
- ◻ **CEPHALAD** Toward the head.
- ◻ **CIRCUMDUCTION** Circular movement of a part.
- ◻ **CRANIAL** Toward the cranium.
- ◻ **DEEP** Situated remote from the surface.
- ◻ **DISTAL** Situated away from the point of origin.
- ◻ **DORSAL** Pertaining to the back surface of the body.
- ◻ **DORSIFLEXION** Bending backward.
- ◻ **EXTENSION** Straightening, or moving jointed parts into or toward a straight condition.
- ◻ **EXTERNAL** Situated outside.
- ◻ **FLEXION** Bending, or moving jointed parts closer together.
- ◻ **INFERIOR** Situated below.
- ◻ **INTERNAL** Situated inside.
- ◻ **LATERAD** Toward the side of the body.
- ◻ **LATERAL** Situated away from the body's midline.
- ◻ **LATERAL ROTATION** Rotating outward away from the body's midline.
- ◻ **LEFT LATERAL RECURRENT** Lying horizontal on the left side.
- ◻ **MEDIAL** Toward the midline of the body.
- ◻ **MEDIAL** Situated toward the body's midline.
- ◻ **MEDIAL ROTATION** Rotating inward toward the body's midline.
- ◻ **PALMAR** Concerning the inner surface of the hand.
- ◻ **PERIPHERAL** Away from a central structure.
- ◻ **PLANTAR** Concerning the sole of the foot.
- ◻ **POSTERIOR** Pertaining to the back surface of the body.
- ◻ **POSTERIOR TO** Situated behind.
- ◻ **PRONATION** Lying face downward or turning the hand so the palm faces downward or backward.
- ◻ **PRONE** Lying horizontal, face down and flat.
- ◻ **PROTRACTION** A pushing forward, as the mandible.

**STANDARD TERMS**

The following terms are used to denote direction of movement, position, and anatomical posture.

- ABDUCTION. Movement away from the body's midline.
- ADDUCTION. Movement toward the body's midline.
- AFFERENT. Conducting toward a structure.
- ANTERIOR. Front surface of the body.
- ANTERIOR TO. In front of.
- CAUDAD. Toward the tail.
- CEPHALAD. Toward the head.
- CIRCUMDUCTION. Circular movement of a part.
- CRANIAD. Toward the cranium.
- DEEP. Situated remote from the surface.
- DISTAL. Situated away from the point of origin.
- DORSAL. Pertaining to the back surface of the body.
- DORSIFLEXION. Bending backward.
- EFFERENT. Conducting away from a structure.
- ELEVATION. Raising a body part.
- EXTENSION. Stretching, or moving jointed parts into or toward a straight condition.
- EXTERNAL. Situated outside.
- FLEXION. Bending, or moving jointed parts closer together.
- INFERIOR. Situated below.
- INTERNAL. Situated inside.
- LATERAD. Toward the side of the body.
- LATERAL. Situated away from the body's midline.
- LATERAL ROTATION. Rotating outward away from the body's midline.
- LEFT LATERAL RECUMBENT. Lying horizontal on the left side.
- MEDIAD. Toward the midline of the body.
- MEDIAL. Situated toward the body's midline.
- MEDIAL ROTATION. Rotating inward toward the body's midline.
- PALMAR. Concerning the inner surface of the hand.
- PERIPHERAL. Away from a central structure.
- PLANTAR. Concerning the sole of the foot.
- POSTERIOR. Pertaining to the back surface of the body.
- POSTERIOR TO. Situated behind.
- PRONATION. Lying face downward or turning the hand so the palm faces downward or backward.
- PRONE. Lying horizontal, face down and flat.
- PROTRACTION. A pushing forward, as the mandible.



- **PROXIMAL.** Situated nearest the point of origin.
- **RECUMBENT.** Lying horizontal, generally speaking.
- **RETRACTION.** A drawing back, as the tongue.
- **RIGHT LATERAL RECUMBENT.** Lying horizontal on the right side.
- **ROTATION.** Turning around an axis.
- **SUPERFICIAL.** Situated near the surface.
- **SUPERIOR.** Situated above.
- **SUPINATION.** Lying face upward or turning the hand so the palm faces forward or upward.
- **SUPINE.** Lying horizontal, flat on the back and face up.
- **VENTRAL.** Front surface of the body.

## PLANES

A plane is an imaginary flat surface that divides the body into sections.

- **CORONAL OR FRONTAL PLANE.** Imaginary plane that passes through the body from side to side and divides it into front and back sections.
- **MIDSAGITTAL PLANE.** Imaginary plane that passes through the body from front to back and divides it into right and left halves.
- **SAGITTAL PLANE.** Imaginary plane parallel to the median plane; it passes through the body from front to back and divides the body into right and left sections.
- **TRANSVERSE PLANE.** Imaginary plane that passes through the body and divides it into upper and lower sections.

## PREFIXES

Prefixes modify or qualify the meaning of the word roots to which they are attached. Medical terms can have more than one prefix.

- **A-; AN-.** Not; without; lacking; deficient.
- **AB-.** Away from.
- **AC-; AD-; AF; AG-; AL-; AN-; AP-; AS-; AT-.** Toward; in the direction of.
- **AMBI-.** Both.
- **AMPHI-; AMPHO-.** On both sides; around; both.
- **ANA-.** Upward; again; backward; excess.
- **ANT-; ANTI-.** Against; opposed to; preventing; relieving.
- **ANTE-.** Before; forward.
- **AP-; APO-.** Away from.

#### 4 MEDICAL TERMINOLOGY

- BI-. Two; twice; double; both.
- CAT-; CATA-. Down; lower; under; against; along with.
- CIRCUM-. Around.
- CO-; COL-; COM-; CON-; COR-. With; together.
- CONTRA-. Against; opposite.
- DE-. Down; away from.
- DI-. Twice; double.
- DIA-. Through; across; apart.
- DIPLO-. Double; twin; twice; twofold.
- DIS-. Apart; away; duplication.
- DYS-. Bad; difficult; abnormal; incomplete.
- EC-; EX-. Out of; away from.
- EN-; EM-. In; into; within.
- END-; ENDO-; ENT-; ENTO-. Within.
- EP-; EPI-. Over; above; upon.
- ESO-. Inward; within; inner.
- EU-. Good; well; normal; healthy.
- EX-; EF-. Away from; out of.
- EXO-. From the outside; toward the outside.
- EXT-; ECTO-. Outer; outside of.
- EXTRA-. On the outside; beyond.
- HEMI-. Half; partial; often refers to one side of the body.
- HYP-; HYPO-. Below normal; deficient; under.
- HYPER-. Beyond normal; excessive.
- IL-; IM-; IN-; IR-. In; into; not.
- INFRA-. Beneath; below.
- INTER-. Between.
- INTRA-; INTRO-. Within.
- MET-; META-. After; across; change.
- NON-. Not.
- OB-; OC-; OP-. Against; toward.
- PAR-; PARA-. Beside; abnormal.
- PER-. Through.
- PERI-. Around; surrounding.
- PRE-. In front of; before.
- PRO-. Before; forward; in front of.
- RE-. Back; again.
- RETRO-. Behind; backward; back.
- SEMI-. Half.
- SUB-; SUF-; SUP-. Under; below.
- SUPER-; SUPRA-. Above; over; excess.

- ☐ SYM-; SYN-. Joined; together; with.
- ☐ TRANS-. Across; through.
- ☐ ULTRA-. Beyond; exceeding.

## WORD ROOTS

- ☐ ABDOMIN-. Abdomen.
- ☐ ACANTH-. Thorn; spine.
- ☐ ACET-. Vinegar.
- ☐ ACETABUL-. Acetabulum (hip socket).
- ☐ ACID-. Sour.
- ☐ ACOU-. Hear.
- ☐ ACR-. Extremity; top; peak.
- ☐ ACT-. Do; drive; act.
- ☐ ACTIN-. Ray; radius.
- ☐ ACU-. Hear.
- ☐ ACU-. Needle.
- ☐ ADEN-. Gland.
- ☐ ADIP-. Fat.
- ☐ ADREN-; ADRENAL-. Adrenal glands.
- ☐ AER-. Air.
- ☐ AESTHE-. Perceive; feel.
- ☐ AGGLUTIN. Clumping.
- ☐ -AGOG; -AGOGUE. A leading away.
- ☐ -AGRA. Gout; rheumatism; pain.
- ☐ ALB-; ALBIN-. White.
- ☐ ALBUMIN-. Protein.
- ☐ ALEX-. Ward off.
- ☐ ALG-; ALGE-. Excessive sensitivity to pain.
- ☐ ALIMENT-. Nourishment.
- ☐ ALL-; ALLORTI-. Other; different; alternate; strange.
- ☐ ALVE-; ALVEOL-. Hollow; cavity; alveolus; air sac.
- ☐ AMBLY-. Dull; dim; faint.
- ☐ AMNI-. Fetal membrane; amnion.
- ☐ AMYGDAL-. Tonsil.
- ☐ AMYL-. Starch.
- ☐ AN-. Anus.
- ☐ ANCYL-. Stiffened; fused.
- ☐ ANDR-. Man; male.
- ☐ ANEURYSM. Aneurysm.
- ☐ ANG-. Choke; feel pain.

- ANGI-. Blood vessel; duct.
- ANKYL-. Stiffened; fused; crooked; looped.
- ANTER-; ANTERI-. Foremost.
- ANTHRAC-. Coal; carbuncle.
- ANTR-. Cavern.
- AORT-. Aorta.
- -APH-. Touch.
- APONEUR-. Aponeurosis.
- APPEND-; APPENDIC-. Appendix.
- AQUE-. Water.
- ARACHN-. Spider; web.
- ARCH-; ARCHE-. Beginning; origin.
- ARCT-; ARCTAT-. Compress.
- ARTERI-. Artery.
- ARTHR-. Joint; articulation.
- ARTICUL-. Joint.
- ASC-. Sac.
- ATEL-. Incomplete; imperfect.
- ATHER-. Fatty deposit.
- AUDI-. Hearing.
- AUR-. Ear.
- AUT-. Self.
- AUX-. Increase.
- AX-. Axis.
- AXILL-. Armpit.
- AXON-. Axis.
- AZOT-. Nitrogen; urea.
- BA-. Walk; stand; go.
- BACILL-. Small staff; rod.
- BACTER-; BACTERI-. Small staff; rod.
- BALAN-. Glans penis; glans clitoridis.
- BALL-. Throw.
- BAR-. Weight; pressure.
- BARTHOLIN-. Bartholin's glands.
- BAS-. Base; foundation.
- BI-. Life.
- BIL-. Bile.
- BLAST-. Bud; child; primitive cell.
- BLENN-. Mucus.
- BLEP-. Look; see.
- BLEPHAR-. Eyelid.